Congressional Research Service
Informing the legislative debate since 1914

Border Carbon Adjustments: Background and Recent Developments

June 28, 2022

Congressional Research Service
https://crsreports.congress.gov
R47167

CRS REPORT
Prepared for Members and
Committees of Congress

Congressional Research Service
Informing the legislative debate since 1914

SUMMARY

R47167

June 28, 2022

Jonathan L. Ramseur
Specialist in Environmental Policy

Brandon J. Murrill
Legislative Attorney

Christopher A. Casey
Analyst in International Trade and Finance

Border Carbon Adjustments: Background and Recent Developments

A key concern among policymakers is that differing climate change mitigation policies could create a competitive disadvantage for some domestic businesses—for example, by raising production costs compared to another country. In addition, differences among countries' climate policies could create incentives to shift economic activities to countries with less stringent or less comprehensive climate policies, ultimately leading to "emissions leakage." In general, greenhouse gas (GHG) emissions leakage can occur if a domestic policy to reduce domestic emissions leads to an increase in emissions in another location, thus undermining emission reductions resulting from the domestic climate policy. Policymakers might consider several approaches to address these potential concerns. One approach that has received interest in recent years is a border carbon adjustment (BCA).

A BCA is a potential trade-related option, such as an import fee or tariff, intended to mitigate adverse competitiveness effects and other concerns when one or more countries establish more ambitious policies to reduce GHG emissions than others. Although no countries have yet implemented a BCA as part of their climate change policies, the European Commission—which functions as the executive of the European Union (EU)—released a proposal in July 2021 for a BCA to complement its mandatory emissions reduction program. The Council of the EU reached agreement on a BCA framework in March 2022, and the European Parliament adopted its own position on a BCA framework in June 2022. The European Parliament and the Council of the EU share legislative power and must both approve a European Commission proposal for it to become EU law.

When establishing a BCA, several key questions would need to be addressed: (1) which materials or products would likely be subject? (2) how would the BCA fee on imports be determined? and (3) which countries' materials or products would be subject?

Establishing a BCA would likely present substantial implementation challenges. Depending on design specifics, a BCA would require calculating the economic impact of a domestic climate policy on a wide range of domestically produced goods as well as the analogous costs in other countries. To alleviate some of these challenges, policymakers could limit the program to a select number of industries and apply a simplified set of default values and assumptions for categories of goods.

The potential imposition of BCAs raises a range of trade issues and other related concerns. Some analysts have expressed concern that BCAs could be (or be interpreted as) disguised protections for domestic industry. Some experts have suggested that BCAs could negatively affect developing countries in the short run. Further, some researchers have highlighted the potential for unintended consequences from a BCA, including impacts to U.S. currency.

The World Trade Organization (WTO) oversees and administers multilateral trade rules, and serves as a forum for trade negotiations and trade disputes. It is uncertain whether a BCA would comply with WTO rules because a WTO dispute settlement panel has never considered the issue. In particular, it is uncertain whether a BCA would be consistent with General Agreement on Tariffs and Trade (GATT) principles. It is also uncertain whether specific GATT exceptions might allow a BCA that is otherwise deemed inconsistent with key GATT principles.

Some studies have questioned whether BCAs would be effective, considering the balance between expected benefits and implementation challenges, and potential consequences that may result from them. Policymakers have alternatives to BCAs that could be used to address leakage or competitiveness concerns. For example, within the framework of a cap-and-trade system, covered entities could receive emission allowances at no cost. This has occurred in the EU's cap-and-trade system, California's cap-and-trade program, and in the Regional Greenhouse Gas Initiative to a lesser extent. In addition, policymakers could support carbon-intensive, trade-exposed industries by funding research, development, and deployment efforts in particular sectors or for specific technologies. Climate policies could include funding to support transition assistance for specific industries or communities with large concentrations of impacted industries.

Contents

Introduction 1
Background and Context 1
What Are Border Carbon Adjustments? 3
Which Materials or Products Would Likely Be Subject to a BCA? 4
How Would the BCA Fee on Imports Be Determined? 5
Which Countries' Materials or Products Would Be Subject to a BCA? 5
BCA Implementation Challenges and Options 6
World Trade Organization Issues 6
GATT Obligations Related to Border Adjustments 7
GATT Exceptions 8
Other Trade-Related Issues 8
Alternatives to BCAs 9
Selected Viewpoints from Government Leaders and Officials 10

Contacts

Author Information 11

Introduction

A border carbon adjustment (BCA) is a potential trade-related option intended to mitigate adverse competitiveness effects and other concerns when one or more countries establish more ambitious policies to reduce greenhouse gas (GHG)[1] emissions than others. Other countries may also have an incentive to adopt more stringent climate policies to avoid the BCAs.

BCAs have been a subject of high-level bilateral and multilateral discussions among countries in recent months. The 27-member European Union (EU) is considering a proposed BCA framework among its institutions.[2] The European Commission, which represents the interests of the EU as a whole and functions as the EU's executive, introduced a BCA legislative proposal in July 2021.[3] The Council of the EU (which represents the interests of the national governments of the member states) reached agreement on the proposed BCA framework in March 2022.[4] The European Parliament adopted its own position on the BCA framework in June 2022.[5] The European Parliament and the Council of the EU share legislative power and must both approve a European Commission proposal for it to become EU law.

The EU proposal, which is still under development and could take a year or more to enact and implement, has raised concerns in a number of other countries, including the United States. In addition, in August 2021, Canadian government officials initiated a consultation process among stakeholders seeking input on BCA issues in the context of Canada's national carbon tax framework.[6]

This report explains what BCAs are and examines some of the international challenges they might present if pursued in government policies. In addition, the report discusses alternatives to BCAs and includes selected viewpoints from a range of stakeholders.

Background and Context

Under the 2015 Paris Agreement, all Parties agreed to submit "Nationally Determined Contributions" (NDCs) containing nonbinding pledges to mitigate GHG emissions, among other

[1] The primary greenhouse gases (GHGs) emitted by human activities—and estimated by the U.S. Environmental Protection Agency (EPA) in its annual inventories—include carbon dioxide (CO_2), methane, nitrous oxide, sulfur hexafluoride, chlorofluorocarbons, hydrofluorocarbons, and perfluorocarbons. Other GHGs include carbonaceous and sulfuric aerosols, hydrochlorofluorocarbons, and elevated tropospheric ozone pollution generated by emissions of nitrogen oxides and volatile organic compounds, such as solvents.

[2] For more details, see CRS In Focus IF11211, *The European Parliament and U.S. Interests*, by Kristin Archick; see also European Parliamentary Research Service, *EU Carbon Border Adjustment Mechanism Implications for Climate and Competitiveness*, June 2022, https://www.europarl.europa.eu/thinktank/en/document/EPRS_ATA(2022)729462.

[3] For more information, see European Commission, "Carbon Border Adjustment Mechanism," https://ec.europa.eu/taxation_customs/green-taxation-0/carbon-border-adjustment-mechanism_en.

[4] Council of the European Union, "Council Agrees on the Carbon Border Adjustment Mechanism (CBAM)," press release, March 15, 2022, https://www.consilium.europa.eu/en/press/press-releases/2022/03/15/carbon-border-adjustment-mechanism-cbam-council-agrees-its-negotiating-mandate/.

[5] European Parliament, "CBAM: Parliament Pushes for Higher Ambition in New Carbon Leakage Instrument," press release, June 22, 2022, https://www.europarl.europa.eu/news/en/press-room/20220516IPR29636/climate-change-meps-push-for-accelerated-eu-action-and-energy-independence.

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

actions.[7] Parties agreed to update or submit new NDCs by 2020 and every five years thereafter.[8] GHG emission reduction goals in the NDCs vary across countries, according to their "common but differentiated responsibilities," under the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement.[9] The national climate change policies required to achieve these commitments would likely differ in terms of scope, stringency, and timing. Assuming these policies are implemented and the goals achieved,[10] they would likely result in a range of economic impacts across countries.

For example, a 2017 study estimated the cost of emission reduction in selected countries to meet their individual NDCs.[11] The study's cost estimates are comparable to an estimate of the carbon price (e.g., tax or fee) that would be needed in particular countries to achieve their NDCs. Although the study's estimated results are outdated for several reasons (e.g., many countries have updated their NDCs since the study's publication), the relative cost estimates may be instructive. The cost estimates ranged from zero (e.g., China and India)[12] to hundreds of dollars per metric ton of carbon dioxide (e.g., the European Union, Japan). The estimate for the United States was roughly $100 per metric ton.

One key concern among policymakers is that differing climate policies could cause the domestic price of goods to increase more than the prices of similar goods manufactured abroad, potentially creating a competitive disadvantage for some domestic businesses.[13] This is a particular concern for "emissions-intensive, trade-exposed" (EITE) industries, such as steel manufacture, as discussed below. A second key concern is that differences among countries' climate policies could create incentives to shift economic activities to countries with less stringent or less comprehensive climate policies, ultimately leading to "emissions leakage." In general, GHG emissions leakage can occur if a domestic policy to reduce domestic emissions leads to an increase in emissions in another location, thus undermining emission reductions resulting from the domestic climate policy.[14]

---

[7] The Paris Agreement is an international treaty under the United Nations Framework Convention on Climate Change (UNFCCC), which since 1992 has been the primary international forum among national governments to address GHG-induced climate change. Two principles agreed to in the UNFCCC are that (1) Parties should act "on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities" and (2) developed country Parties should take the lead in combating climate change. For more information about the treaties, see CRS Report R46204, *The United Nations Framework Convention on Climate Change, the Kyoto Protocol, and the Paris Agreement: A Summary*, by Jane A. Leggett.

[8] Each successive NDC of a Party "will represent a progression" and "reflect its highest possible ambition, reflecting its common but differentiated responsibilities and respective capabilities, in light of different national circumstances."

[9] The UNFCCC Article 2 includes the principle of "common but differentiated responsibilities and respective capabilities," sometimes with the acronym CBD-RC, which carries over in its subsidiary Paris Agreement.

[10] Based on past experience with international commitments to reduce GHG emissions (including prior U.S. targets), the degree to which these emission targets will be met is uncertain. This issue is beyond the scope of this report.

[11] See Keigo Akimoto et al., "The Analyses on the Economic Costs for Achieving the Nationally Determined Contributions and the Expected Global Emission Pathways," *Evolutionary and Institutional Economics Review*, vol. 14 (2017).

[12] The study authors stated that some countries' estimated abatement costs were zero, because these countries could meet their NDCs using "business-as-usual" climate policies.

[13] Although some industries may become less profitable, lose market share, and reduce jobs, not all businesses within a sector may be affected similarly. For example, under an emission cap or carbon price framework, a company using electricity produced with hydropower would experience less cost increase than a company using electricity produced with coal. In addition, some businesses may be more energy efficient than others or use less emitting processes. Some may be able to reduce their emissions in response to the new policies at lower cost than others.

[14] Some studies have raised questions regarding the degree to which emissions leakage would be a concern under a

Policymakers might consider several approaches to address these potential concerns. One approach that has received interest in recent years is a BCA.[15] The sections below discuss the concept, scope, and logistics of a BCA approach.

What Are Border Carbon Adjustments?

To address the potential impacts associated with different climate policies across countries, a BCA would impose a trade measure, such as a fee or tariff,[16] on certain imported materials or products. BCA frameworks could also provide a rebate to exporters of certain materials or products based on increased costs from a domestic climate policy. Generally, a BCA would seek to promote "equal conditions of competition" for foreign and domestic companies supplying products or services within a taxing jurisdiction.[17] Some observers have noted that BCAs could encourage other countries to adopt comparable climate policies.[18]

Although no countries have yet implemented a BCA as part of their climate change policies,[19] the European Commission released a *proposal* in July 2021 for a BCA that would complement its mandatory emissions reduction program.[20] This proposal is under discussion and debate among the legislative institutions of the EU. In Congress, most of the recent carbon tax or emission fee legislative proposals include a BCA.[21]

When establishing a BCA, several key questions would need to be addressed, which are discussed below.[22]

---

unilateral approach. This issue is beyond the scope of this report. See, for example, Warwick McKibbin et al., "The Role of Border Carbon Adjustments in a U.S. Carbon Tax," *Climate Change Economics*, vol. 9, no. 1 (2018); Adele Morris, *Making Border Carbon Adjustments Work in Law and Practice*, Tax Policy Center, July 26, 2018; and Joseph Aldy, "Frameworks for Evaluating Policy Approaches to Address the Competitiveness Concerns of Mitigating Greenhouse Gas Emissions," *National Tax Journal*, vol. 70, no. 2 (2017).

[15] Policymakers, stakeholders, and researchers refer to these mechanisms by a variety of names, including *border adjustments*, *border tax adjustments*, *border carbon adjustment mechanism*, or *carbon border adjustment mechanism* (the term used in the EU), among others. This report uses the term *border carbon adjustments* (BCAs).

[16] A *tariff* is a customs duty levied on imported and exported goods and services. For more background, see CRS In Focus IF11030, *U.S. Tariff Policy: Overview*, by Christopher A. Casey.

[17] Organisation for Economic Co-Operation and Development (OECD), *OECD International VAT/GST Guidelines on Neutrality*, 2011, https://www.oecd.org/tax/consumption/guidelinesneutrality2011.pdf.

[18] See for example, Adele Morris, *Making Border Carbon Adjustments Work in Law and Practice*, Tax Policy Center, July 26, 2018.

[19] As a component of its climate policy, California has a mechanism to address imported electricity from surrounding states (California Air Resources Board cap-and-trade program, https://ww2.arb.ca.gov/our-work/programs/cap-and-trade-program). Some argue this is a form of a BCA. See, for example, Aaron Cosbey et al., "Developing Guidance for Implementing Border Carbon Adjustments: Lessons, Cautions, and Research Needs from the Literature," *Review of Environmental Economics and Policy*, vol. 13, no. 1 (2019).

[20] European Commission, Proposal for a Regulation of the European Parliament and of the Council Establishing a Carbon Border Adjustment Mechanism, July 14, 2021, COM/2021/564 final, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021PC0564.

[21] See CRS Report R45472, *Market-Based Greenhouse Gas Emission Reduction Legislation: 108th Through 117th Congresses*, by Jonathan L. Ramseur.

[22] A number of researchers have examined these questions and other design issues associated with BCAs. See, for example, Brian Flannery et al., *Framework Proposal for a US Upstream GHG Tax with WTO-Compliant Border Adjustments: 2020 Update*, Resources for the Future, 2020; Aaron Cosbey et al., "Developing Guidance for Implementing Border Carbon Adjustments: Lessons, Cautions, and Research Needs from the Literature," *Review of Environmental Economics and Policy*, vol. 13, no. 1 (2019); Samuel Kortum and David Weisbach, "The Design of Border Adjustments for Carbon Prices," *National Tax Journal*, vol. 70, no. 2 (June 2017).

Which Materials or Products Would Likely Be Subject to a BCA?

Many BCA approaches would apply a fee to imported goods from industrial sectors that are expected to experience the greatest impacts from unilateral climate policies. These industries are often described as "emission-intensive, trade-exposed."

An industry's GHG emission intensity is a function of the following:

1. direct emissions from its manufacturing process, such as carbon dioxide (CO_2) from cement or steel production; and
2. indirect emissions from the inputs (e.g., electricity, natural gas) to the manufacturing processes (e.g., steel, cement, and chemical production).

"Emissions-intensive" industries would be impacted by climate policies affecting direct emissions during manufacture and climate policies affecting "upstream" emissions by suppliers, such as electricity generators, that may pass higher costs through to electricity consumers. Emission-intensive industries are likely to experience greater cost increases than less emission intensive industries, all else being equal.[23]

Trade-exposed industries are those that face greater international competition, compared to other domestic industries. One potential measure of a sector's trade exposure would compare the combined value of a sector's exports and imports with the value of its domestic production and imports.

A 2009 interagency report prepared during the consideration of federal GHG reduction legislation identified industrial sectors that would meet specific emission-intensive, trade-exposed criteria.[24] For the most part, these sectors included industries in chemical, paper, nonmetallic minerals (e.g., cement and glass), and primary metals (e.g., aluminum and steel) sectors.

The European Commission BCA would initially apply only to a selected number of goods: iron and steel, cement, fertilizer, aluminum, and imported electricity.[25] The European Parliament framework would add organic chemicals, plastics, hydrogen, and ammonia to the scope of coverage.[26]

---

[23] A 2015 study estimated that the "energy-intensive industries of iron and steel, aluminum, pulp and paper, cement, glass, and industrial chemicals would bear total percentage declines in domestic production, on the order of 3 to 5 percent, in excess of the manufacturing sector average of 1.5 percent." See Joseph Aldy and William Pizer, "The Competitiveness Impacts of Climate Change Mitigation Policies," The Harvard Project on Climate Agreements, 2015.

[24] Interagency Report, *The Effects of H.R. 2454 on International Competitiveness and Emission Leakage in Energy-Intensive Trade-Exposed Industries*, 2009, https://www.epa.gov/sites/default/files/2016-07/documents/interagencyreport_competitiveness-emissionleakage.pdf. Federal agencies in the Obama Administration prepared this report in response to a request from several Senators considering H.R. 2454 (111th Congress) and related legislation. H.R. 2454 ("Waxman-Markey") passed the House in 2009 and would have established a GHG emission cap-and-trade program, among other provisions. The legislation included emission allowance rebates and other assistance for industries based on their energy intensity and trade intensity.

[25] European Commission, *Proposal for a Regulation of the European Parliament and of the Council Establishing a Carbon Border Adjustment Mechanism*, July 14, 2021, COM/2021/564 final, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021PC0564; see also the commission website explaining the framework, https://ec.europa.eu/taxation_customs/green-taxation-0/carbon-border-adjustment-mechanism_en.

[26] European Parliament, "CBAM: Parliament pushes for higher ambition in new carbon leakage instrument," press release, June 22, 2022, https://www.europarl.europa.eu/news/en/press-room/20220516IPR29636/climate-change-meps-push-for-accelerated-eu-action-and-energy-independence.

How Would the BCA Fee on Imports Be Determined?

In general, a BCA would likely levy a fee on the estimated tons of GHG emissions associated with imported goods (often described as its carbon or emissions content). The rate of the fee would likely be based on a domestic carbon price in the country of import, such as a carbon tax or emissions fee, or a calculated implicit carbon price from a regulatory program or other related policies.[27] To achieve this objective, one government may levy a fee on an imported product from another country, based on estimates of the GHG emissions generated during the manufacturing process of the imported product. Estimated emissions would include direct emissions from onsite processes and may also include indirect emissions associated with the product's manufacture, such as emissions from electricity generation at offsite locations.

The European Commission BCA would apply only to direct GHG emissions generated from the onsite production of covered materials (e.g., iron and steel). The European Commission approach includes a plan to evaluate whether its BCA should include indirect emissions from these materials.[28] The European Parliament framework would include indirect emissions.[29]

In addition, some proposed BCA frameworks further adjust the import fee to account for the climate policies (and costs) in place in the exporting country.[30] The EU BCA includes this type of adjustment.

Which Countries' Materials or Products Would Be Subject to a BCA?

Policymakers may consider including or excluding materials from some countries from a BCA for a range of reasons. For example, a BCA may exclude imports from countries that have climate policies (e.g., carbon prices) that are comparable to domestic policies. In the EU, imports of goods from all non-EU countries would be covered by the EU's BCA. Certain countries that participate or link with the EU's emission trading system would be excluded from the EU BCA.[31] In recent U.S. federal legislative proposals, BCAs would apply fees to imported goods from countries that do not have climate policies comparable with those of the United States. Under these approaches, the federal agency in charge of implementing the BCA program, such as the Department of the Treasury, would generally be required to make this determination. How such determinations of climate policy parity are made, and by whom, can raise challenging technical and policy issues.

Policymakers may consider excluding goods from less developed countries or materials from countries whose trade of covered materials is below certain volume thresholds.[32] The former

[27] Calculating a BCA fee for imports from regulatory programs or policies may present greater challenges than a calculation based on explicit carbon prices, such as taxes or fees.

[28] European Commission, "Carbon Border Adjustment Mechanism: Questions and Answers," https://ec.europa.eu/commission/presscorner/detail/en/qanda_21_3661.

[29] EU Parliament, "CBAM: Parliament Pushes for Higher Ambition in New Carbon Leakage Instrument," press release, June 22, 2022, https://www.europarl.europa.eu/news/en/press-room/20220603IPR32157/cbam-parliament-pushes-for-higher-ambition-in-new-carbon-leakage-instrument.

[30] See CRS Report R45472, *Market-Based Greenhouse Gas Emission Reduction Legislation: 108th Through 117th Congresses*, by Jonathan L. Ramseur.

[31] European Commission, "Carbon Border Adjustment Mechanism: Questions and Answers," July 2021, https://ec.europa.eu/commission/presscorner/detail/en/qanda_21_3661.

[32] See, for example, Aaron Cosbey et al., "Developing Guidance for Implementing Border Carbon Adjustments:

might encourage economic development in the exporting country. The latter might reduce the administrative burden on the country with the BCA. However, such exclusions might raise concerns in the World Trade Organization (discussed below).

BCA Implementation Challenges and Options

Establishing and operating a BCA would likely present implementation challenges.[33] Depending on design specifics, a BCA would require calculating the economic impact resulting from a domestic climate policy on domestically produced goods and materials as well as the analogous costs in other countries. A calculation involving a carbon price and its impact on materials directly subject to the price—often coal, natural gas, and oil—could be relatively straightforward. A calculation involving a carbon price and its impact on materials indirectly affected by a carbon price—such as steel or fertilizer—would be more complicated. Analogous calculations might be needed for imported goods produced in many countries—goods that might cross national borders multiple times before being shipped to the importing country—further increasing the complexity of the program.

To alleviate some of the measurement complexity, policymakers could limit the program to a select number of industries and apply default values and assumptions to particular manufacturing processes. For example, some have proposed using average emission values for particular sectors (e.g., steel) and for different countries.[34] However, this simplified approach could result in less accurate import price adjustments, which could potentially affect the accuracy of GHG emission reductions achieved by the program.[35]

Another option would be to allow companies to provide measured, independently verified emissions data as an alternative to default values. Emerging technologies, such as improved sensors and digital ledgers, may allow for increasing reliability of tracking products through supply chains.

World Trade Organization Issues

The World Trade Organization (WTO) is the 164-member international organization created to oversee and administer multilateral trade rules, serve as a forum for trade negotiations, and resolve trade disputes. The WTO encompassed and succeeded the General Agreement on Tariffs and Trade (GATT), which was established in 1947.[36] The GATT is one of the WTO agreements

---

Lessons, Cautions, and Research Needs from the Literature," *Review of Environmental Economics and Policy*, vol. 13, no. 1 (2019).

[33] See, for example, Marco Sakai and John Barrett, "Border Carbon Adjustments: Addressing Emissions Embodied in Trade," *Energy Policy*, vol. 92 (2016); Sam Kortum and David Weisbach, "Border Adjustment for Carbon Emissions," Resources for the Future, 2016; Carolyn Fischer et al., "Carbon Taxes and Energy-Intensive Trade-Exposed Industries," in *Implementing a U.S. Carbon Tax: Challenges and Debates*, ed. Ian Parry et al. (Washington, DC: International Monetary Fund, 2015).

[34] See, for example, Michael A. Mehling et al., "Designing Border Carbon Adjustments for Enhanced Climate Action," *The American Society of International Law*, vol. 113, no. 3 (2019); Aaron Cosbey et al., "Developing Guidance for Implementing Border Carbon Adjustments: Lessons, Cautions, and Research Needs from the Literature," *Review of Environmental Economics and Policy*, vol. 13, no. 1 (2019).

[35] Congressional Budget Office, *Border Adjustments for Economywide Policies That Impose a Price on Greenhouse Gas Emissions*, 2013.

[36] For an overview of the WTO, see CRS Report R45417, *World Trade Organization: Overview and Future Direction*, coordinated by Cathleen D. Cimino-Isaacs.

that set forth rules and disciplines for practices that affect international trade in goods and services.[37] These rules can be enforced by the WTO's dispute settlement mechanism, which provides a means for the resolution of trade disputes between members concerning these rules and may decide whether a member has complied with its WTO obligations.[38]

It is uncertain whether a BCA would comply with WTO rules because a WTO dispute settlement panel has never considered the issue. In particular, it is uncertain whether a BCA would be consistent with key GATT principles, such as nondiscrimination obligations. It is also uncertain whether specific GATT exceptions, such as those for national security[39] and the protection of human, animal, or plant life or health,[40] may allow a BCA that is otherwise deemed inconsistent with key GATT principles.

GATT Obligations Related to Border Adjustments

GATT explicitly allows WTO members to impose, "on the importation of any *product* … a charge equivalent to an internal tax … in respect of the like domestic product or in respect of an article from which the imported product has been manufactured or produced in whole or in part."[41] Some recent U.S. legislative proposals that would levy an emission fee or carbon tax apply the fee or tax not on particular products but rather on emissions or the inputs that result in emissions, namely fossil fuels.[42] Under these proposals, carbon-intensive materials, such as steel, cement, and certain chemicals, would not be directly subject to the proposed tax or fee. Some observers contend that a tax on products based on emissions or inputs could be used to establish a BCA, but this notion is untested.[43] In addition, it is unclear whether GATT contemplates the adjustment of an *implicit* tax on domestic products that would arguably result from the imposition of domestic environmental regulations.[44]

A key WTO issue is whether a country's BCA imposes a fee on imported products in excess of like domestic products. Under the GATT's national treatment requirement for taxation measures,[45] a country may not impose a BCA on imported products in excess of the internal tax imposed on like domestic products.[46] Depending on the design and scope of a BCA, it may be difficult to determine if a BCA were in excess of the tax or fee on domestic products.

---

[37] For a link to all of the WTO Agreements discussed in this report see *Legal Texts: The WTO Agreements*, WORLD TRADE ORG., https://www.wto.org/english/docs_e/legal_e/final_e.htm.

[38] WTO, Understanding on Rules and Procedures Governing the Settlement of Disputes (DSU), https://www.wto.org/english/docs_e/legal_e/28-dsu.pdf.

[39] GATT art. XXI.

[40] *Id.* art. XX(b).

[41] *Id.* art. II:2(a) (emphasis added).

[42] See CRS Report R45472, *Market-Based Greenhouse Gas Emission Reduction Legislation: 108th Through 117th Congresses*, by Jonathan L. Ramseur.

[43] See, for example, Jennifer Hillman, *Changing Climate for Carbon Taxes: Who's Afraid of the WTO?*, at 6, 9 (2013), http://www.climateadvisers.com/wp-content/uploads/2014/01/2013-07-Changing-Climate-for-Carbon-Taxes.pdf.

[44] Two proposals in the 117th Congress would arguably base a BCA on such an implicit tax. The BCA framework that would be established under S. 2378 and H.R. 4534 would not be linked to a federal carbon tax or fee but would base a BCA on "domestic environmental costs," which would include existing Clean Air Act regulations, among other costs.

[45] GATT art. III:2.

[46] *Id.* In addition, Article I of the GATT sets forth the Agreement's most-favored-nation (MFN) treatment obligation, which generally prohibits a WTO member from discriminating against imported products of one WTO member country as compared to products of another WTO member, including by taxing one WTO member's products in excess of another member's like products. This provision might be relevant if a BCA imposes a higher tax on the products of one

Based on a GATT panel decision in another context, it is uncertain whether a BCA based on the amount of GHGs emitted during the manufacture or production of an imported product would conform to WTO rules, because this BCA would be based on the method of production rather than the product itself.[47] However, some scholars have argued that a BCA could be designed to allocate GHG emissions from the production process to particular products.[48]

GATT Exceptions

If a BCA is adopted and later found to violate the GATT's requirements, a country could seek to retain the BCA under one of the GATT's general exceptions.[49] For example, one exception involves measures "necessary to protect human, animal or plant life or health."[50] Another exception provisionally allows GATT-inconsistent measures "relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption."[51] Certain conditions must be demonstrated to meet these exceptions. Whether a BCA would satisfy any of these exceptions and their associated conditions would likely be fact-dependent.[52]

In addition, another GATT provision contains an exception for national security.[53] A country could argue that a BCA falls within the scope of that exception because climate change is a national security emergency. It is unclear whether a WTO panel would accept this rationale. Some WTO members have expressed concern that overuse of the national security exception will undermine the world trading system, because countries might enact a multitude of protectionist measures under the guise of national security.[54]

Other Trade-Related Issues

The potential imposition of BCAs raises a range of trade issues and other related concerns. For example, some analysts have expressed concern that carbon border adjustment tariffs could be (or be interpreted as) disguised protections for domestic industry.[55] That is, some have argued that

WTO member as compared to another.

[47] This reasoning stems from a 1991 GATT panel decision that considered whether the United States could treat imported Mexican tuna differently than United States tuna because the Mexican tuna's production method resulted in the incidental killing of dolphins. The Panel determined that the regulation was directed at the method of production of the tuna rather than the tuna itself. The Panel determined that distinguishing between tuna based on the production method was impermissible under Article III because it was not a regulation of a product. See GATT Panel Report, *United States—Restrictions on Imports of Tuna*, GATT Doc. DS21/R, GATT BISD 39S/155, para. 5.15 (September 3, 1991) (unadopted).

[48] See, for example, Hillman, *supra* note 31, at 6, 9.

[49] These are found in GATT Article XX, ¶¶ (a) through (j).

[50] GATT art. XX(b).

[51] *Id.* art. XX(g).

[52] See Appellate Body Report, *United States—Import Prohibition of Certain Shrimp and Shrimp Products*, WT/DS58/AB/R, paras. 158-59 (October 12, 1998).

[53] GATT art. XXI.

[54] See, for example, WTO Council for Trade in Goods, *National Security Cited in Two Trade Concerns at Goods Council Meeting*, June 30, 2017, https://www.wto.org/english/news_e/news17_e/good_10jul17_e.htm.

[55] Peter Holmes et al., "Border Carbon Adjustments and the Potential for Protectionism," *Climate Policy*, vol. 11, no. 2 (2011); Gary Clyde Hufbauer, "Divergent Climate Change Policies Among Countries Could Spark a Trade War. The WTO Should Step In," Peterson Institution for International Economics, 2021, https://www.piie.com/blogs/trade-and-investment-policy-watch/divergent-climate-change-policies-among-countries-could.

countries could use subtle adjustments to the complex calculations often involved in the proposed BCAs to privilege domestic industries.[56]

Similarly, experts have suggested that BCAs could negatively affect developing countries in the short run.[57] A survey conducted by the United Nations Conference on Trade and Development (UNCTAD) notes that the EU's proposed carbon border adjustment mechanism, for example, "could impact the development of poorer countries and reduce their opportunities for export-led development." However, the study also noted that the impact would be highly variable, and certain developing countries could gain advantages. For example, a 2020 study argued that because the steel industries of India and Turkey are relatively carbon efficient, they would likely "take crude steel share from China, Russia, and the Ukraine" if the EU implemented a carbon border adjustment tariff.[58]

Further, some researchers have highlighted the potential for unintended consequences from a BCA. For example, some studies have found that a border adjustment may lead to lower net exports than the carbon price alone, due to the adjustment's terms-of-trade effect on U.S. currency.[59] Some of the concerns may be lessened to some degree if a larger number of nations establish comparable emission reduction policies.

Alternatives to BCAs

Some studies have questioned whether BCAs would be justified, considering the expected benefits, implementation challenges, and potential consequences that may result. For example, a 2017 study concluded that "our review of the economics of unilateral carbon taxes, however, does not find strong justifications for [BCAs]."[60] A 2015 study concluded that "attempting to 'protect' energy-intensive U.S. manufacturing firms from international competitive pressures through various policies may have only a limited impact on these firms.… [G]iven the magnitude of the competitiveness impacts on climate policy in our simulation, the potential economic and diplomatic costs of such policies may outweigh the benefits and justify no action."[61]

Policymakers have alternatives to BCAs, which could be used to address leakage or competitiveness concerns. For example, within the framework of a cap-and-trade system, one alternative is to provide emission allowances to covered entities at no cost. This has occurred in the EU-ETS, California's cap-and-trade program, and in the Regional Greenhouse Gas Initiative (RGGI) to a lesser extent.[62] Policymakers could support carbon-intensive, trade-exposed industries by funding research, development, and deployment efforts in particular sectors or for

[56] Ibid.

[57] For example, Elena Ianchovichina and Harun Onder, "Carbon Border Taxes: What Are Their Implications for Developing Countries?" Brookings Institution, October 5, 2021, https://www.brookings.edu/blog/future-development/2021/10/05/carbon-border-taxes-what-are-their-implications-for-developing-countries/.

[58] Ben Aylor et al., "How an EU Carbon Border Tax Could Jolt World Trade," Boston Consulting Group, 2020, https://www.bcg.com/publications/2020/how-an-eu-carbon-border-tax-could-jolt-world-trade.

[59] See, for example, Warwick McKibbin et al., "The Role of Border Carbon Adjustments in a U.S. Carbon Tax," *Climate Change Economics*, vol. 9, no. 1 (2018).

[60] Samuel Kortum and David Weisbach, "The Design of Border Adjustments for Carbon Prices," *National Tax Journal*, vol. 70, no. 2 (June 2017).

[61] Joseph Aldy and William Pizer, "The Competitiveness Impacts of Climate Change Mitigation Policies," The Harvard Project on Climate Agreements, 2015.

[62] The Regional Greenhouse Gas Initiative is a regional cap-and-trade system on CO_2 emissions from electric power plants in 11 U.S. states: Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, Vermont, and Virginia.

specific technologies. In addition, climate policies could include funding to support transition assistance for specific industries or communities with large concentrations of impacted industries.

Selected Viewpoints from Government Leaders and Officials

Government leaders and officials from around the world have expressed a range of varying viewpoints regarding BCAs and their possible implementation. This section provides selected examples of these viewpoints. The examples below do not represent an exhaustive list.

- The U.S. 2021 NDC states, "The United States will work to ensure that our firms and workers are not put at an unfair competitive disadvantage and cooperate with allies and partners that are committed to fighting climate change. As appropriate, and consistent with domestic approaches to reduce United States greenhouse gas emissions, this includes consideration of carbon border adjustments in relation to carbon-intensive goods."[63]
- The Government of Canada stated that "whether BCAs are necessary to mitigate carbon leakage risks ultimately depends on the level of ambition and effectiveness of other countries' GHG emission curbing actions….This is why the Government wants to engage with key trading partners and other like-minded countries who are taking climate action to better understand their perspectives and plans for BCAs or alternative measures and ensure there is as much coherence and coordination as possible among different policies and approaches."[64]
- Officials from the BASIC country group—Brazil, South Africa, India and China—issued a Joint Statement in April 2021, expressing "grave concern regarding the proposal for introducing trade barriers, such as unilateral carbon border adjustment, that are discriminatory and against the principles of Equity and CBDR-RC [the UNFCCC principle of Common but Differentiated Responsibilities and Respective Capabilities]."[65]
- Artyom Bulatov, deputy head of the European Co-operation Department at Russia's Foreign Ministry, reportedly stated that "it appears that some of our partners cannot resist the temptation to instrumentalise the climate agenda for the benefit of their economies…. We took note of the plans to use the CBAM as an additional source of income for the EU budget.... And frankly speaking it goes fully in line with protectionism in the trade sphere."[66]

[63] The United States of America Nationally Determined Contribution, Reducing Greenhouse Gases in the United States: A 2030 Emissions Target, Submitted April 2021, https://www4.unfccc.int/sites/NDCStaging/Pages/All.aspx.

[64] Government of Canada, Exploring Border Carbon Adjustments for Canada, August 2021, https://www.canada.ca/en/department-finance/programs/consultations/2021/border-carbon-adjustments/exploring-border-carbon-adjustments-canada.html.

[65] Joint Statement issued at the conclusion of the 30th BASIC Ministerial Meeting on Climate Change hosted by India on April 8, 2021, https://www.environment.gov.za/mediarelease/basic_ministerialmeeting_climatechange_india.

[66] Nastassia Astrasheuskaya and Mehreen Khan, "Russian Businesses Start Counting Cost of EU Carbon Border Tax," *Financial* Times, May 17, 2021.

- Indian Trade Minister Piyush Goyal reportedly stated it would be "very unfair today to bring trade policy and trade barriers and use trade as a means to foist [new restrictions] upon the developing world or the less developed countries."[67]

Author Information

Jonathan L. Ramseur
Specialist in Environmental Policy

Christopher A. Casey
Analyst in International Trade and Finance

Brandon J. Murrill
Legislative Attorney

Disclaimer

This document was prepared by the Congressional Research Service (CRS). CRS serves as nonpartisan shared staff to congressional committees and Members of Congress. It operates solely at the behest of and under the direction of Congress. Information in a CRS Report should not be relied upon for purposes other than public understanding of information that has been provided by CRS to Members of Congress in connection with CRS's institutional role. CRS Reports, as a work of the United States Government, are not subject to copyright protection in the United States. Any CRS Report may be reproduced and distributed in its entirety without permission from CRS. However, as a CRS Report may include copyrighted images or material from a third party, you may need to obtain the permission of the copyright holder if you wish to copy or otherwise use copyrighted material.

[67] Mark Linscott, "Carbon Border Adjustment Mechanisms: Will Innovative Climate Policy Launch a Trade War?" *New Atlantacist*, June 2021, https://www.atlanticcouncil.org.