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REPORT: Supporting New Brunswick's Green Economy Transition and the Trade-related aspects of the NB Climate Change Act and Output-Based Pricing System (OBPS)

ABSTRACT: This report, prepared by a team of University of New Brunswick Law Students, explains how international trade parameters can impact provincial and federal carbon pricing legislation in the context of the New Brunswick Climate Action Plan. This project was funded by the Environmental Trust Fund and the Department of Environment and Local Government New Brunswick.

University of New Brunswick, Faculty of Law
Trade Law and Carbon Pricing Lab

Trade Law and Carbon Pricing Lab Final Report on International Trade Parameters of Carbon Pricing

Supporting New Brunswick's Green Economy Transition: Interdisciplinary Student Research Group for the Trade-related aspects of the NB Climate Change Act and Output-Based Pricing System (OBPS)

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List of Abbreviations

AB – Appellate Body
ACJO – Associate Chief Justice of Ontario
AD – Antidumping Agreement
AG – Attorney General
AA – Agreement on Agriculture
APEC – Asia-Pacific Economic Cooperation
ASATAP – Applies so as to Afford Protection
BCAs – Borden Carbon Adjustments
BTAs – Borden Tax Adjustments
CAEP – The Committee on Aviation and Environmental Protection
CAFTA – Central America Free Trade Agreement
CBAM – Carbon Border Adjustment Mechanism
CBDRRC – Common but Differentiated Responsibilities and Respective Capabilities
CEC – Commission for Environmental Cooperation
CICC – Canadian Institute for Climate Choices
CITE – Carbon Intensive and Trade Exposed
CO_2 – Carbon Dioxide
CO_2e – Carbon Dioxide Equivalent
COs – Certificates of Origin
Constitution – *Constitution Act*, 1982, being Schedule B to the *Canadian Act 1982* (UK), 1982, c 11
COP – Conference of Parties
CPS – Carbon Pricing Score
CSR – Corporate Social Responsibility
CTE – Committee on Trade and Environment
CUSMA – Canada-United States-Mexico Agreement
CVD – Countervailing Duty
DSB – Dispute Settlement Body
DSS – Dispute Settlement System
DSU – Dispute Settlement Understanding
ECCC – Environment and Climate Change Canada
ECR – Effective Carbon Rates
EGA – Environmental Goods Agreement
EITE – Emissions Intensive Trade Exposed
ESTs – Environmentally Sound Technologies
ETS – Emissions Trading Schemes
EU – European Union
EU ETS – European Union Emissions Trading System
EUR – Energy Use Rates
FFS – Fossil Fuel Subsidies
FIT – Feed-in Tariff
GATS – General Agreement on Trade in Services
GATT – General Agreement on Tariffs and Trade
GDP – Gross Domestic Production
GGE – Greenhouse Gas Emissions

GGPPA – Greenhouse Gas Pollution Pricing Act
GHG – Greenhouse Gas
GSP – Generalized System of Preferences
GtC – Gigatonnes of Carbon
ICAO – International Civil Aviation Organization
ICP – Internal Carbon Pricing
IEA – International Energy Agency
IDC – Intangible Drilling Costs
IMF – International Monetary Fund
IMO – International Maritime Organization
JSIs – Joint Statement Initiatives
kWh – kilowatt-hour
LCR – Local Content Requirements
LDCs – Least Developed Countries
LEPs – Large Emitters Programs
LNG – Liquefied Natural Gas
LTVP – Long Term Vision and Plan
Mb/d – Thousand Barrels of Oil Equivalent per day
MC12 – WTO 12th Ministerial Conference
MCI – Marginal Cost Incentives
MFN – Most Favoured Nation
NAFTA – North American Free Trade Agreement
NDCs – Nationally Determined Contributions
NGL – Natural Gas Liquids
NPR-PPMS – Non-Product Related PPMS
OBPS – Output-Based Pricing System
OECD – Organisation for Economic Co-Operation and Development
ONCA – Ontario Court of Appeal
OPEC – Organization of the Petroleum Exporting Countries
PCRs – Product Carbon Requirements
PCF – Pan-Canadian Framework on Clean Growth and Climate Change
PFCs – Perfluorochemicals
POGG – Peace, Order, and Good Governance
POS – Point of Sale
PPMs – Process and Production Methods
PR-PPMs – Product Related PPMs
PSNR – Permanent Sovereignty over Natural Resources
PSPC – Public Services and Procurement Canada
RBCG – Responsible Business Conduct Funding
RE – Renewable Energy
SCC – Supreme Court of Canada
SCM – Subsidies and Countervailing Duties Agreement
SDGs – Sustainable Development Goals
SDT – Special and Differential Treatment
TBT – Agreement on Technical Barriers to Trade
TFA – Trade Facilitation Agreement

TPP – Trans-Pacific Partnership
TRIMS – Trade-Related Investment Measures
TRIPS – The Agreement on Trade-Related Aspects of Intellectual Property Rights
TTIP – Transatlantic Trade and Investment Partnership
UN – United Nations
UNEP – United Nations Environment Programme
UNFCCC – United Nations Framework Convention on Climate Change
VAT – Value Added Tax
WCI – Western Climate Initiative
WTO – World Trade Organization

Executive Summary

Climate change is the single largest challenge of our time. It is an existential threat to the survival of human beings; a threat that must be addressed immediately. This report provided by the Trade Law and Carbon Pricing Lab at the University of New Brunswick Faculty of Law, funded by the provincial Environmental Trust Fund, argues that we can combat climate change using international law, specifically international environmental law and international trade law. Efforts to combat climate change must include both domestic and international components. Internationally, Canada is bound by their emissions targets through the Paris Agreements. Domestically, the provinces must help to implement change to achieve these targets.

This report demonstrates that decarbonization of energy intensive industries is possible; however, major systematic shifts in production processes are required. Therefore, this report focuses on the decarbonization of energy intensive industries such as oil, steel, aluminium, and other large manufacturing industries, which are responsible for 25-30% of greenhouse gas (GHG) emissions. This report seeks to provide an overview of the benefits and challenges associated with carbon pricing mechanisms available to Canada, with a particular focus on recommending Border Carbon Adjustments (BCAs) to the Federal Government. BCAs are a tax added to imports whose Canadian-origin counterparts are subjected to a domestic carbon tax. This ensures that Canadian producers are not at a competitive disadvantage in the Canadian market when compared to international producers and the entire Canadian market is carbon accountable.

One of the biggest fallbacks of carbon pricing is carbon leakage. Carbon leakage occurs when foreign carbon-unregulated products become more competitive than domestic carbon-regulated products due to the carbon tax imposed on the domestic products. There are ways to ensure that leakage phenomena are reduced, such as the foreign product selling over the domestic product. One of the most frequently cited solutions in this regard are BCAs.

This report suggests that BCAs are compatible with Canada's obligations under the World Trade Organization (WTO), which is the principal organization for international trade. This report outlines the relevant WTO law and highlights the specific provisions that are important for New Brunswick to consider such as the General Agreement on Trades and Tariffs (GATT), including the principles of Most Favoured Nation (MFN), National Treatment, and Articles XX and XXIV, as well as the Agreement on Subsidies and Countervailing Measures (ASCM). Further, this report highlights the roles of the federal and provincial governments in the international trade process.

BCAs, as any trade measure, must be compatible with WTO law. The MFN principle mandates that similarly situated products imported from different WTO Member states must be subject to the same treatment. The National Treatment principle also requires that domestic goods cannot be treated more favourably than imported goods. Therefore, BCAs must have the same impact on all imports of similarly situated products and must be equal to or lower than the domestic carbon tax on domestically produced products. If the foreign product has already been subject to a carbon tax in its country of origin, then it should be exempt from BCAs due to the WTO prohibition on double taxation.

Article XX of the GATT accounts for the fact that trade liberalization may conflict with important societal values and outlines general exceptions to permit otherwise incompatible with WTO law measures. For instance, BCAs may be justified under Article XX(b) of the GATT as a measure "necessary to protect human, animal or plant life or health." The measures must be designed and necessary for the protect the life or health, must be connected to the objective in an allottable way, and the protection must not outweigh the restrictiveness of the BCA. Article XX(g) also allows for exemptions to WTO rules for measures relating to the conservation of natural resources. Therefore, even if BCAs are found to be incompatible with WTO law, they may still be permitted under this exception. The measure must be implemented in conjunction with restrictions on domestic production and consumption, and any revenue generated from BCAs must be spent in a way that supports their environmental objective.

The Chapeau (introductory paragraph) of Article XX ensures that the application of provisionally justified measures do not constitute misuse or abuse of the exceptions. To do so, the Chapeau qualifies justification measures by requiring they are not "arbitrary or unjustifiable discrimination between countries where the same conditions prevail" or a "disguised restriction on international trade." These measures have a high threshold. Canada and, to the extent it is necessary, its provinces should negotiate with their trading partners to meet this threshold.

Furthermore, domestic carbon pricing scheme must not be constructed in a way that acts like an export subsidy, otherwise it will be contrary to WTO law. Subsidies are defined as "a financial contribution by a government of public body" where there is "a direct transfer of funds" or "government revenue that is otherwise due is forgone or not collected." An export subsidy is where the benefit is contingent on exporting. Subjecting Canadian industries to lower thresholds, "grandfathering", or providing rebate costs for their emissions to compensate for trade competitiveness effects and carbon leakage would all be considered export subsidies.

The federal government should regulate both carbon emissions and carbon trade. While it may be the provinces who will mostly benefit by BCAs, it is clear from domestic and international law that the federal government must regulate. The *Constitution Act, 1867*, splits the roles of the federal and provincial governments in Canada. Commerce, international engagement, and trade relations all fall under the authority of the federal government. Further, the Supreme Court of Canada in *References re Greenhouse Gas Pollution Pricing Act*, 2021 SCC 11, confirmed that the federal government has jurisdiction over "establishing minimum national standards of GHG price stringency to reduce GHG emissions" under the national concern branch of the peace, order, and good government ("POGG") power. Moreover, paragraph 12 of Article XXIV of the GATT states that federal states are responsible for the actions of regional and local governments within their territory. This means that the federal government is responsible for ensuring any measures enacted by Canadian provinces and territories must also comply with WTO law.

Across Canada and the world, many carbon pricing systems already exist. This report provides examples of and discusses such programs. The Government of New Brunswick may be interested in taking inspiration from one or more of these examples, especially with respect to their local implementation components. Such examples include the European Union's proposed Carbon Border Adjustment Mechanism, to prevent carbon leakage on imported products, and the European Union's current Emissions Trading System, which only applies to products that originate within the European Union.

Finally, there are many other measures that may be implemented alongside BCAs. This includes green procurement and investment, where the province would require purchases to be made with environmental considerations in mind. Examples of these existing initiatives around Canada and the world are also highlighted in this report. The Government of New Brunswick is encouraged to consider implementing their own provincially to address the urgency of the climate crisis as soon as possible.

1. Introduction

A. Climate Change

Climate change is the single biggest challenge of our times. Frequently, experts on disaster management discuss the COVID-19 pandemic or financial crises of the past to suggest that these will seem minor in comparison to the problems that the world will face due to climate-related phenomena.[1] The world is already experiencing lengthier and deadlier climate disasters including rising sea levels, hurricanes, floods, fires, and droughts.[2] This will only continue to worsen. Governments, organizations, corporations, and individuals around the world need to act collectively to tackle this crisis.

However, traditional approaches prove to be largely unsuccessful. The economically focused approach argues that central banks test the viability of financial institutions based on climate change risks.[3] However, predictions made by models that assume faulty parameters may lead to catastrophic events.[4] For example, if a model suggests a region will experience a 30% increase in rainfall over the next 20 years, but it actually experiences a decrease in rainfall, the problems that region will face will be exacerbated beyond the tragic changes to their climate.[5] The region's economic well-being will suffer due to wasting money on adaptations based on changes to its climate (i.e., rainfall increase) that did not come to fruition.[6] These uncertainties support the idea of not predicting climate change risks, since they are currently unpredictable due to faulty models. Sonia Seneviratne, a professor at the Institute for Atmospheric and Climate Science of ETH Zurich, argues this uncertainty serves as an argument to act as quickly as possible to ensure the models, and their parameters, are improved so all major climate change risks can be modelled.[7]

[1] IPCC Sixth Assessment Report, "Climate Change 2022: Impacts, Adaptation, and Vulnerability" <https://www.ipcc.ch/report/ar6/wg2/>
[2] World Meteorological Organization, "Weather-related disasters increase over past 50 years, causing more damage but fewer deaths" (31 August 2021) online: < https://public.wmo.int/en/media/press-release/weather-related-disasters-increase-over-past-50-years-causing-more-damage-fewer>.
[3] Kate Mackenzie, "What Smart People Get Wrong About Climate Change Extremes", (10 September 2021), online *Bloomberg*: <https://www.bloomberg.com/news/articles/2021-09-10/what-smart-people-get-wrong-about-climate-change-extremes> [Mackenzie].
[4] IPCC Sixth Assessment Report, "Climate Change 2022: Impacts, Adaptation, and Vulnerability" <https://www.ipcc.ch/report/ar6/wg2/>
[5] Mackenzie, supra note 3.
[6] Ibid.
[7] Ibid.

2. International Law

A. International Environmental Law

Any effort to effectively address climate change must include both domestic and international components. Climate change transcends national borders, thus international cooperation is vital. Such cooperation includes adopting international agreements as well as ensuring that domestic measures work in tandem with actions of other governments.[8] Scholars argue that, due to this global approach, an international legal community emerged viewing the international stage as the proper realm to combat environmental issues. This view is gaining prominence as evidenced by the fact that over 480 international agreements have been signed since the 1990s.

Many hold the opinion that there is no way to promote economic growth while simultaneously ensuring international environmental justice.[9] Without unprecedented technological advances, there is no way to increase outputs while using less inputs. Simply put, there are not enough resources in the world to meet current demands.[10] However, sustainable development has been identified to address this problem, a concept that is discussed further in various parts of this report.

International environmental law focuses on global interests that transcend the notion of nation-states.[11] International environmental lawyers generally oppose the classic emphasis on state sovereignty. In particular, they take issue with claims to Permanent Sovereignty over Natural Resources (PSNR).[12] When sovereign countries have the right to exploit their own resources, they often do so without any consideration of environmental consequences to the international community.[13] To combat this, the United Nations Environment Programme (UNEP) was created in 1972 in an attempt to protect the environment by encouraging limited sovereign resource exploitation.

Out of these attempts emerged the 'no harm' principle. This principle indicates that a country's right to use its territory is limited by the obligation to avoid causing serious trans-boundary harm, which is regarded as a foundational principle of international environmental law. This principle reflects how international legal doctrines are often balanced at the turning point of competing sovereign interests. There is a tension between individual countries wanting to exploit resources to spark their economic growth, and the international community which bears the costs of irresponsible resource exploitation by individual countries.[14]

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[8] Simon Lester. "How the United States Can Lead the Effort to Reduce Carbon Emissions." Cambridge University Press, World Trade Review (2021) at page 1.
[9] Sundhya Pahuja, "Conserving the world's resources?" in James Crawford & Martti Koskenniemi, eds, *Camb Companion Int Law* Cambridge Companions to Law (Cambridge: Cambridge University Press, 2012) 405 [Pahuja].
[10] Ibid at 408.
[11] Ibid at 398.
[12] Alan Boyle & Catherine Redgwell, *Birnie, Boyle, & Redgwell's International Law and the Environment*, 4th ed (Oxford: Oxford University Press, 2021).
[13] Ibid.
[14] Ibid.

The international aspect of the climate crisis is also evidenced by "the commons", which refers to the commonwealth shared by the entire world.[15] The commons exist beyond nation states' jurisdictions and boundaries.[16] The commons are sometimes also referred to as an area without law. Specifically, in doctrinal terms, the commons refer to areas that are not subject to any state sovereignty.[17] The accepted practice of international law is that the commons cannot be appropriated by a single state but may be freely used by all.[18] Given the fact that the world is now dominated by nation-states, there are very few common areas remaining. Those that remain include the atmosphere, outer space, the High Seas, and Antarctica.[19] The atmosphere is the most important shared resource on our planet. Thus international law can arguably be used as a tool to protect this resource.[20] The 'common concern' principle embodies the international community's effort to protect shared resources for all of humanity. For instance, the principle offers a potential counterweight to the tensions that exist between states by emphasizing the creation of a sense of community.[21] Given the major climate change obstacles that lay ahead, international environmental law may need to rethink the relationship with the commons.[22]

Historically, international environmental law focused on the demand side of policy whereby climate change treaties and related decisions were silent on fossil fuels. The United Nations Framework Convention on Climate Change (UNFCCC) mentions fossil fuels in relation to the response measures that can aid or protect highly dependent fossil fuel producing companies from mitigation policies.[23] The Paris Agreement continues the historical silence as it contains no explicit commitment that binds its signatories to restrict fossil fuel production. To date, the Paris Agreement is the most recent international treaty focusing on the climate crisis and international environmental law. It covers substantive issues of climate change mitigation, adaptation, and means of implementation such as capacity building, finance, and technology transfers. Moreover, it includes a host of procedural and institutional arrangements.

I. The Paris Agreement

Contextual Background and Legal Framework of the Paris Agreement

The Bali Conference, COP13, was particularly concerned with greenhouse gas emissions. The developed nations' strategy had three elements: 1) the declaration of a global goal of reduction of greenhouse gas emissions by 2050; 2) that all nations would have to declare the specific year in which their national emissions would reach a peak; and 3) to establish a system of global carbon

[15] Pahuja, supra note 9, at 409.
[16] Ibid at 409.
[17] Ibid at 410.
[18] Ibid at 410.
[19] Ibid at 410.
[20] Ibid at 415.
[21] Ibid at 416.
[22] Ibid at 417.
[23] United Nations Climate Change News, "Fossil Fuels are Biggest Part of Global Ecological Footprint", (29 July 2019), online: <https://unfccc.int/news/fossil-fuels-are-biggest-part-of-global-ecological-footprint>.

trading.[24] Developing countries opposed all three elements. They argued that setting a global goal "without indicating how different countries would share the mitigation burden amounted to a one-sided restriction on less-developed countries".[25] They also argued that they could not promise any immediate or binding reductions on emissions in the near future. In Copenhagen, at COP15, the division between developed and developing countries that formed during COP13 became more evident. In this Conference of the Parties, the developed countries promised to provide $100 billion dollars in climate financing for developing countries per year, by 2020.[26] This promise has yet to be fulfilled.

At COP16, the Cancún Agreements promoted a type of self-differentiation that took a more nuanced approach to the distinction between developing and developed countries. In Paris, at COP21, this approach was adopted and taken further; each party was allowed to communicate their nationally determined contributions, rather than have them prescribed.[27] The Paris meeting was more democratic with a more science-oriented stance on climate change than previous COP meetings. Another success was that "the principle of differentiation inform[ed] the discussion of mitigation, adaptation, financial transfer, technology transfer, and support for capacity building in the developing countries".[28] Equity and common, but differentiated, responsibilities also remained. It is now acknowledged that differentiation requires both flexibility and adaptability.[29] Thus, the Agreement marks a step forward in the gradual blurring of country categories that better account for diverse national circumstances, capabilities, and vulnerabilities, all of which are constantly evolving.

The Agreement focuses on the political will necessary to identify a climate plan that balances ambition and differentiation.[30] The Agreement was adopted on January 27th, 2016, in the *Report of the Conferences of the Parties on its twenty-first session, held in Paris from 30 November to 13 December 2015*.[31] During negotiations, there was no political consensus on the core elements and features of the emerging agreement.

During the negotiations, many countries put weight on legality. From this discussion, several issues arose: (1) the legal form of the agreement; whether is it a treaty under international law; (2) whether individual provisions can create legal obligations; (3) whether the provisions are sufficiently precise to constrain countries; (4) whether the agreement can be applied in court; (5) whether the agreement is enforceable; (6) whether the agreement otherwise promotes

[24] Thiagarajan Jayaraman, "The Paris Agreement on Climate Change: Background, Analysis, and Implications" (2015) 5:2 Review of Agrarian Studies at 46 [Jayaraman].
[25] Ibid at 47.
[26] Ibid at 48.
[27] Sandrine Maljean-Dubois, "The Paris Agreement: A New Step in the Gradual Evolution of Differential Treatment in the Climate Regime?" (2016) 25 Review of European, Comparative & International Environmental Law at 3 [Maljean-Dubois].
[28] Jayaraman, supra note 24 at 56.
[29] Delimatsis, Panos, and Leonie Reins, eds. *Trade and Environmental Law* (Edward Elgar Publishing, 2021).
[30] Lavanya Rajamani, "Ambition and Differentiation in the 2015 Paris Agreement: Interpretative Possibilities and Underlying Politics" (2016) 65:2 Int Comp Law Q at 493 [Rajamani].
[31] *Report of the Conferences of the Parties on its twenty-first session, held in Paris from 30 November to 13 December 2015*, 29 January 2016, FCCC/CP/2015/10/Add.1 [*Report of the Conferences 21st*].

accountability (through transparency and review); and (7) the domestic acceptance process and legal status of the agreement.[32]

The legality of the Agreement depends on the Paris Agreement as a whole. The Paris Agreement qualifies as a treaty under international law because it creates legal obligations for the Parties and compliance is mandatory. However, not every provision of the agreement creates a legal obligation.[33] The legal character depends on the language of individual provisions. The specific character of a provision is often determined by the choice of verb. For example, 'shall' denotes legal obligation whereas 'should' constitutes a recommendation. Internationally, a provision can have a legally binding character without being justiciable or enforceable. Treaties often contain a mix of different provisions, such as obligations, recommendations, and statements of opinions.[34] Legally binding provisions may provide greater commitment and assurance of compliance. Transparency, accountability, and precision can create enforcement despite the Agreement being described as non-enforceable. However, domestically the Paris Agreement is not justiciable, meaning that generally the Agreement does not create rights that can be brought before domestic courts directly by citizens.

The overall goals of the Paris Agreement are to combat climate change by preventing global temperatures from rising above 2 degrees Celsius, with the aim of limiting it to 1.5 degrees Celsius above pre-industrial levels.[35] This is to be done without threatening food production and through the provisional use of financial aid to developing nations.[36] To limit rising temperatures, the Agreement contains a net zero GHG emission concept. This concept requires anthropogenic GHG emissions to be reduced as far as possible, with remainder emissions mitigated via removal of GHG. To achieve these goals, each party of the Agreement is subject to binding obligations of conduct in relation to national mitigation contributions. [37]

The overarching architecture of the Agreement is a 'pledge and review' approach to climate governance, where Parties unilaterally declare the action that they are willing to take. UNFCCC works as a notary who reviews the implementation of the Parties' pledged action. This 'bottom up' approach leaves a wide margin of discretion to countries on how to contribute to tackling climate change. This involves signatories preparing nationally determined contributions (NDCs) that the country intends to achieve. Countries must then pursue domestic mitigation to achieve these goals.[38]

The Agreement has strong procedural obligations for NDCs. Specifically each party must: (1) prepare, communicate, and maintain NDCs that it intends to achieve; (2) provide information necessary for clarity, transparency, and understanding during their NDC communication; (3)

[32] Daniel Bodansky, "The Legal Character of the Paris Agreement" (2016) 25:2 Review of European, Comparative & International Environmental Law at 142 [Bodansky].
[33] Ibid at 150.
[34] Ibid at 145.
[35] *Report of the Conferences 21st*, supra note 31, at page 21.
[36] Ibid at Agreement Article 2.
[37] UNFCCC National Adaptation plans https://www4.unfccc.int/sites/NAPC/News/Pages/national_adaptation_plans.aspx, and NDCs https://www4.unfccc.int/sites/NDCStaging/Pages/All.aspx; see also Delimatsis and Reins, eds. supra note 29.
[38] *Report of the Conferences 21st*, supra note 31, at Agreement Article 4(2).

communicate a successive NDC every five years that progresses beyond the Party's current NDC[39]; (4) account for their NDC in a way that promotes environmental integrity and avoid double counting; and (5) regularly provide a national GHG greenhouse gas inventory and the information necessary to track progress in implementing and achieving its NDC.[40] Although NDC obligations are not justiciable or enforceable, they are legally binding, which likely increases commitment to meeting the targets.[41]

The Paris Agreement is based on self-differentiation where each party's NDC must reflect their highest possible mitigation ability. The Agreement establishes a sliding scale of differentiation rather than a binary one, which creates a more flexible approach that can continue to evolve over time.[42] Differential treatment "seeks to foster a form of substantive equality which cannot be achieved through reliance on sovereign equality in a world where states are unequal in many respects".[43] The degree of differentiation varies in the Agreement between 'developed' and 'developing' countries, introducing 'other parties'.[44] For example, developed countries were invited to communicate a "quantified economy-wide emission reduction target", whereas developing countries were merely encouraged to submit "nationally appropriate mitigation actions".[45] These 'other parties' are typically emerging countries, though this lacks a precise definition. Overall, the issue of differentiation for developing countries was becoming increasingly irrelevant before the shift to the binary scale. This shift is arguably a positive one because it encourages the highest possible mitigation efforts by all parties.

In addition to the obligation on parties to formulate their own climate plans, the Agreement also established an elaborate oversight system that ensures parties properly implement their plans to mitigate climate change. It is believed that the more autonomy given to parties, the more likely it is that parties will reach their long-term emissions goals. As a result, the Agreement provides autonomy to the parties in determining their climate change plans, but also robustly oversees each party's implementation of their specific plan.

Overall, there is a focus on taking initiative and responsibility in achieving the Agreement's goals. The Agreement indicates that technology should be used cooperatively and be disseminated to combat climate change.[46] Parties must also take measures to increase education around climate change.[47] Furthermore, the Agreement provides details on the requirements for nations to remain transparent, including requiring submissions of specific reports.[48]

Relevant Articles of the Paris Agreement

[39] Ibid at Agreement Article 5(9).
[40] Bodansky, supra note 32, at 142.
[41] Ibid at 143.
[42] Maljean-Dubois, supra note 27, at 6.
[43] Ibid at 2.
[44] Ibid at 10.
[45] Ibid at 8.
[46] *Report of the Conferences 21st*, supra note 31, at Agreement Article 10(2).
[47] Ibid at Agreement Article 12.
[48] Ibid at Agreement Article 13.

In its preamble, the Agreement references human rights, rights of Indigenous peoples, and local communities.[49] This suggests that Parties are expected to interpret their obligations under the agreement considering their existing human rights obligations.

The global and individual goals of developed and developing nations with respect to mitigation are contained in Article 2. Article 2.1(a) of the Agreement states that all parties agree to strive maintain the increase in global average temperatures "well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognising that this would significantly reduce the risks and impacts of climate change".[50] Yet, there is no clear indication of how this will be done. The only quantity discussed is that only 325 GtC can be emitted between 2021 and 2100.[51]

The preamble and Article 2.2 of the Agreement state "[the] principle of equity and common but differentiated responsibilities and respective capabilities (CBDRRC), in light of different national circumstances".[52] The addition of 'in light of different national circumstances' increases flexibility and no longer distinguishes between developed and developing countries based on UN or OECD memberships.[53] It establishes that all parties "aim to reach global peaking of GGEs as soon as possible".[54] This is important because the political, social, cultural, and economic circumstances in each country are constantly evolving.

Article 4(2) is arguably the most significant legally binding obligation. It reads: "Each Party shall prepare, communicate, and maintain successive nationally determined contributions that it intends to achieve. Parties shall pursue domestic mitigation measures, with the aim of achieving the objectives of such contributions".[55] The result of this measure is that parties have "binding obligations of conduct to prepare, communicate and maintain contributions, as well as pursue domestic measures".[56] The actual specific GHG reduction results for each country are not legally binding, rather the outcomes are a result of good faith. Parties are required to clearly communicate their contributions every five years. Collective and individual expectations on parties will ensure all parties will have a 'direction of travel' towards increasingly rigorous actions from all parties regarding measures implemented to reduce GHGs.[57] By allowing parties to develop their own plans, differentiation will continue. This is a major benefit because many countries are at various stages of development that reflects their CBDRRC. Each party has the common ambitious goal of mitigating climate change but will contribute to the common goal via differing responsibilities that reflect the party's development status (i.e., developed countries will have more responsibilities than developing countries).

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[49] See the Paris Agreement at https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement.
[50] Jayaraman, supra note 24 at 51.
[51] See IPCC Special Report, Mitigation pathways compatible with 1.5°C in the context of sustainable development https://www.ipcc.ch/sr15/chapter/chapter-2/ .
[52] Maljean-Dubois, supra note 27, at 6.
[53] Ibid at 6.
[54] Annalise Savaresi, "The Paris Agreement: A New Beginning?" SSRN Electronic Journal, (August 2016): 1-12 at 9 [Savaresi].
[55] Rajamani, supra note 30, at 497.
[56] Ibid at 497.
[57] See for example Government of Canada Complementary actions to reduce emissions, https://www.canada.ca/en/services/environment/weather/climatechange/pan-canadian-framework/complementary-actions-reduce-emissions.html .

Article 9 of the Agreement requires that developed countries, such as Canada, provide financial assistance to developing nations to mitigate damages and to help developing nations meet their own obligations under the Agreement.[58] These countries must provide $100 billion USD per year to developing countries.[59] This number will be renegotiated in 2025. Parties must promote environmental integrity, transparency, accuracy, completeness, comparability, and consistency.[60] Further, countries must also support developing countries in these goals.[61] Additionally, all developed country parties to the Agreement are encouraged to provide or continue to provide such support voluntarily.[62]

Article 15 establishes a mechanism to "facilitate implementation of and promote compliance with"[63] the provisions of the Agreement. The mechanism is a committee of experts operating in a transparent, non-adversarial, and non-punitive way. The committee reports annually to the COP and evaluates national capabilities and circumstances when making recommendations. In addition to other mechanisms and processes existing in Articles 13 and 14, Article 15 is a "value add" because the committee:

1. Can supplement a Party's NDC (nationally determined contributions) submission,
2. Always has standing,
3. May be the only process dictating compliance/ non-compliance with an obligation,
4. Can provide assistance,
5. Is in a position to look at systemic issues.[64]

However, the wording of Article 15 presents a few problems. Namely the scope of what is covered, how the committee's work is initiated, the committee's role and output, and the procedures of operation are not yet decided.[65] As such, there are several paths forward, and the Agreement's provisions are not likely changed by Article 15.

The Canadian Pledge Regarding the Paris Agreement

In Canada, international law only becomes binding through domestic ratification through legislation. This means that Parliament must bring an international treaty, like the Agreement, into domestic Canadian law. Information regarding the Canadian stance on the Agreement can be found on the Federal Government website, in the article entitled *Progress towards Canada's greenhouse gas emissions reduction target*.[66] Canada appears to have a few obligations under the Agreement, and New Brunswick has even less. Further, there is very little legal force behind Canada's pledges

[58] *Report of the Conferences 21st*, supra note 31, at Agreement Article 9(1).
[59] Ibid at Decision section 53.
[60] Ibid at Agreement Article 5(13).
[61] Ibid at Agreement Article 4(5).
[62] Ibid at Agreement Article 9(2).
[63] Susan Biniaz, "Elaborating Article 15 of the Paris Agreement: Facilitating Implementation and Promoting Compliance" (2017) 10 IDDRI Policy Brief at 1.
[64] Ibid at 2.
[65] Ibid at 2.
[66] Canada Environment and Climate Change Canada, *Progress towards Canada's greenhouse gas emissions reduction target: Canadian environmental sustainability indicators* (Ottawa: Environment and Climate Change Canada, March 2021).

since most of the binding obligations apply only to procedural elements or reports due to the UNFCCC.

As for Canada's specific targets, they were designed to reach the goal of having emissions 30% less than 2005 levels by the year 2030. While this is not binding, it is an internationally recognized commitment to combat climate change. Canada adhered poorly to these emissions targets.[67] The Canadian government has suggested that it has made climate change mitigation a priority,[68] but Canadian emissions continue to rise.[69] A more optimistic projection for Canada would be the 244 metric tons of CO_2 (roughly 45%) above the 2030 target.[70] Going forward, to meet any kind of goal Canada needs to price carbon emissions aggressively.[71]

The Paris Agreement directly references subnational and regional portions of the country, which necessarily includes New Brunswick.[72] This part of the Agreement indicates that subnational authorities are a key component and must make contributions to the "long-term global response to climate change to protect people, livelihoods and ecosystems, taking into account the urgent and immediate needs of those developing country Parties that are particularly vulnerable to the adverse effects of climate change."[73] Provincial carbon pricing schemes are an excellent first step, however , more can be to be done on the subnational level.

The Future of the Paris Agreement

It remains to be seen how the Agreement will be implemented, and whether it will prove fit for purpose. The Agreement represents a balanced compromise between Parties. Though the agreement is not perfect and leaves some questions unanswered, it is likely the best that could be achieved in the circumstances. The Agreement sheds no light on the future of the Kyoto Protocol or the extent to which the Agreement will facilitate voluntary cooperation in the implementation of Parties' action.[74] Hard work still lies ahead, but with the Paris Agreement there is considerably more optimism than before for various national institutions and subnational government bodies to adopt a more aggressive stance.[75]

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[67] Jeff Rubin, "Closing the Gap Between Canadian Emissions Targets and Performance: The Role of a National Carbon Tax". *CIGI Papers,* no.105 (May 2016): 1-10 at page 2 [Rubin].
[68] Ibid at page 2.
[69] See Government of Canada, Greenhouse Gas Emissions, https://www.canada.ca/en/environment-climate-change/services/environmental-indicators/greenhouse-gas-emissions.html .
[70] Rubin, supra note 67, at page 2.
[71] Ibid at page 3.
[72] *Report of the Conferences 21st*, supra note 31, at Agreement at Article 7(2).
[73] Ibid at Agreement Article 7(2).
[74] Savaresi, supra note 54, at 1-12.
[75] One case concerning the Agreement, which reached the Supreme Court of the Netherlands, is *The State of the Netherlands (Ministry of Economic Affairs and Climate Policy) v Urgenda Foundation*. The Netherlands reduced their target below their original goal of 25-40% after the Agreement was reached. Critics said this was to avoid having to be stuck to the 25-40% target when reassessing in the future. In brief, the outcome of the case was that the Netherlands would be bound by their 25% minimum. The Supreme Court referenced the Agreement in their decision; however, it was referenced less as binding law and more as an indication of the importance of having strict reduction goals. The Paris Agreement through its long-term temperature goals and its goal of making finance flows consistent with a pathway towards low GHG emissions and climate resilient development can serve as a foundation to establish new rules for the elimination of fossil fuel subsidies. Reading the Paris Agreement in conjunction with the preamble provision "to promote universal access to sustainable energy in developing countries…" leads

B. International Trade Law

International trade law has the potential to be an effective means of addressing climate change.[76] This assertion is founded in the quantity, types, and elasticity of imports that are carbon heavy. In addition to regulating these imports, international trade measures could be remarkably effective in curbing overall CO_2 emissions.[77] For example, tariffs can be successful in reducing emissions.[78] However, multilateral trade policies are arguably preferable for mitigating climate change due to the potential of carbon leakage and other issues that will likely occur if agreements are only bilateral.[79]

The WTO is the primary international organization regulating international trade law. The WTO has under its umbrella several legal agreements that its members have signed and that create obligations for its members.[80] For example, the Agreement on Subsidies and Countervailing Measures (SCM Agreement)[81] and several WTO Dispute Settlement Body (DSB) decisions. Disputes between Members including allegations of violating WTO agreements are brought before WTO panels and, if an appeal is necessary, the Appellate Body (AB). The GATT,[82] the former version of organization that transitioned into the WTO in 1995, was never meant to be an international organization. The rules and logistics of enforcing international trade rules in the realm of environmental regulations that stem from the GATT are not as robust.[83] These issues include lack of *stare decisis*, lack of self-execution and enforcement of GATT decisions, and more.[84] If Canadian carbon pricing mechanisms were to be challenged by Canada's trading partners, a formal complaint would be filed at the WTO. Therefore, it is critical to understand the organization's rules, agreements, and overall functions.

While the renegotiation of tariffs is generally frowned upon by WTO Members as it tends to counter the WTO goal of progressive elimination of tariffs, it is permissible under WTO law, and public international law, and may be a good option for environmental policy implementation,

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arguably to a legal obligation for parties to assess and mitigate the risks of financial support for fossil fuel production. The Paris Agreement additionally breaks new ground by including a reference to the imperatives of a just transition of the workforce and the creation of decent work and quality jobs.

[76] Olga Nartova & Anirudh Shingal, "The potential of tariff policy for climate change mitigation: legal and economic analysis." *Journal of World trade* (2014) 48:5 1 at 9.

[77] Ibid at 16-21.

[78] Ibid at 12.

[79] Ibid at 8-9.

[80] Maria Panezi, "The Climate-Change Tent and the Trade Cathedral: Assessing the Relationship between Environmental Regulations and WTO Law after the Paris Agreement" Chapter in *Global Environmental Change and Innovation in International Law*, edited by Neil Craik et al 249 (Cambridge: Cambridge University Press, 2018) doi:101017/9781108526081014 at 266-268 [Panezi].

[81] Agreement on Subsidies and Countervailing Measures, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1869 U.N.T.S. 14.

[82] Note that there is the General Agreement on Tariffs and Trade the temporary organization of Member states prior to the evolution of the World Trade Organization, and the General Agreement on Tariffs and Trade, the 1994 international agreement that brought the WTO into fruition.

[83] John H Jackson, "World trade rules and environmental policies: Congruence or conflict" (1992) *Wash. & Lee L Rev* 49 1227 at 1251.

[84] Ibid at 1253-1254.

so long as it remains non-discriminatory.[85] Countries must first implement their own carbon price before requiring it of trade partners in order to avoid the perception of hypocrisy.[86] An example of how environmental policy can fit within the WTO is the Environmental Goods Agreement (EGA).[87] Further negotiations and agreements could prove invaluable in the fossil fuel subsidies space, as well as in situations of sub-government entities instituting climate change legislation.[88]

The inevitable 'greening of the global economy' will determine the future of international trade dynamics.[89] There is positive momentum for creating trade agreements with the aim of having free trade in environmental goods and goods essential to the development of green growth.[90] The EGA was an environmentally focused plurilateral trade agreement proposed by the 'Geneva 14' countries and endorsed by the WTO, but negotiations for it stalled.[91] One precedent for such an environmentally focused free-trade agreement is the *1996 Ministerial Declaration on Trade in IT Products* adopted by the WTO, which provides for free trade in IT goods.[92]APEC presents another precedent, which included an agreement to substantially lower tariffs on "environmental goods" and clean technology.[93] However, such efforts face obstacles. The ability for countries to take multilateral action on environmental trade is threatened by the proliferation of wide-reaching bilateral free trade agreements with dominant countries.[94] Countries willing to join multilateral action towards environmental free trade may be faced with conflicting obligations under trade agreements to which they are a party outside the WTO.[95]

Trade itself can also result in environmental degradation by way of its contributions to development and economic growth.[96] However, it can also support advancements in technology and efficiency, which can contribute to the diffusion of environmentally friendly technology and to sustainability.[97] Restricting trade would likely lead to substantial environmental degradation because countries would have to produce everything themselves, leading to inefficiency (using more resources to produce less goods).[98] Transportation emissions are also a point of concern; if they remain unchanged, the combined emissions from all trade transport is on track to increase by 160% by 2050.[99] A total of 87% of trade transportation is done by sea, which has the lowest carbon emissions.[100] However, sea transport still accounts for 7% of total emissions.[101] Efforts are being made by the International Civil Aviation Organization (ICAO) and the International Maritime

[85] Panezi, supra note 80, at 260-262.
[86] Ibid at 261.
[87] Ibid at 262-263.
[88] Ibid at 264.
[89] John A. Mathews, "Trade policy, climate change and the greening of business" (2015) 69:5 Australian Journal of International Affairs 610-624 at 611 [Mathews].
[90] Ibid at 613-614.
[91] Ibid at 613-614.
[92] Ibid at 614.
[93] Ibid at 614.
[94] Ibid at 615.
[95] Ibid at 615.
[96]WTO, *Short Answers to Big Questions on the WTO and the Environment* (2020) at 3.
[97] Ibid.
[98] Ibid.
[99] Ibid at 4.
[100] Ibid
[101] Ibid.

Organization (IMO) to change their procedures and technologies towards less polluting options.[102]Additionally, global supply chains facilitate knowledge sharing regarding best practices, thus can help disseminate more environmentally-friendly production techniques and sustainable technology.[103] Restricting trade would undermine these benefits without necessarily offering better solutions.[104] Some studies show that imported goods can have a much lower environmental footprint than locally-produced goods because of factors like production, packaging, and disposal.[105] The WTO Members also work together with international partners focused on improving the sustainable development of least-developed countries.[106] These include the Aid for Trade initiative, the Enhanced Integrated Framework, and the Standards and Trade Development Facility.[107] Sustainable development and environmental protection are central objectives of the WTO, as made clear by the Marrakesh Agreement.[108] Trade rules allow WTO Members to adopt environmental initiatives of their own design, as long as they do not amount to unjustifiable or arbitrary discrimination or disguised protectionism.[109] Indeed, WTO Members adopt a large number of environmental policies that vary significantly from each other. Interestingly, one in six trade notifications under the WTO are related to environmental measures.[110]

As per the WTO, In order to design an environmental initiative in line with WTO rules, the initiative should be coherent, fit-for-purpose, mindful, holistic, and flexible.[111] For a measure to be coherent, its trade restriction needs to be connected to the legitimate objective.[112] For a measure to be fit-for-purpose, it either needs to efficiently contribute to the progress of the legitimate objective or be part of a local plan that imposes the same restrictions domestically as it is intending to impose on a trade partner.[113] In order to be mindful and holistic, there should be consideration of the impact on other WTO Members and the measure should be in line with international strategies of the same type.[114] Finally, to be flexible, all alternative means and methods for pursuing the legitimate objective need to be considered to avoid limiting trade.[115]

Differentiation between goods according to their environmental friendliness is not an issue under WTO laws as long as it is applied in a non-discriminatory way and is connected to the pursuit of a legitimate objective.[116] No previous WTO dispute pertaining to environmental concerns took issue with the environmental objectives themselves.[117] Rather, the disputes were about protectionism and arbitrary discrimination in trade, which were independent of the purported

[102] Ibid.
[103] Ibid at 5.
[104] Ibid.
[105] Ibid.
[106] Ibid at 6.
[107] Ibid.
[108] Ibid at 7.
[109] Ibid.
[110] Ibid at 8.
[111] Ibid at 9.
[112] Ibid.
[113] Ibid.
[114] Ibid.
[115] Ibid.
[116] Ibid at 11.
[117] Ibid 10.

environmental objectives.[118] In fact, WTO disputes generally lead to increased coherence and effectiveness of environmental policies.[119] This is because, as a result of removing arbitrary aspects of the policies, the measures became better aligned with the environmental objectives and they are applied more consistently and broadly across trade partners and goods.[120]

The predictability offered by WTO rules allows for more effective and coherent environmental policies.[121] The work of the CTE and other WTO committees ensure that trade and environmental initiatives are mutually supportive.[122] The WTO Secretariat also collaborates regularly with Multilateral Environmental Frameworks such as UN entities.[123] For example, such collaborations have led to the publications of "CITIES and the WTO: Enhancing Cooperation for Sustainable Environment" and "Making Trade Work for the Environment, Prosperity, and Resilience."[124] This is in addition to hosting events, workshops, and eLearning courses.[125]

Many climate action tools such as carbon taxation, emission cap-and-trade programs, energy efficiency standards, energy labelling, and renewable sector subsidies will present challenges pertaining to WTO law in the coming years.[126] Policy coherence is required between the trade system and environmental initiatives and this coherence is possible if there is cooperation between Member states at the national level and the WTO's Committee on Trade and Environment (CTE) at the multilateral level.[127] Member states should also be considerate of particular needs and capacities of developing countries when designing and implementing policy choices.[128]

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[118] Ibid.
[119] Ibid.
[120] Ibid.
[121] Ibid at 14.
[122] Ibid.
[123] Ibid at 15.
[124] Ibid.
[125] Ibid.
[126] Ricardo Meléndez-Ortiz et al, "What next for the trade, climate communities?" (2016) 10:1 Bridges Trade Biores 1-27 at 9 [Meléndez-Ortiz next].
[127] Ibid at 10.
[128] Ibid.

3. Carbon Pricing

Carbon pricing is a necessary national policy tool for reducing GHG emissions.[129] Carbon pricing reduces emissions "by sending a price signal to the economy as a whole and to various economic actors, in particular, to reduce emissions".[130] Greater clarity in the carbon pricing mechanism implemented, will lead to greater efficiency.[131] Carbon pricing should be considered as the 'first best climate policy.'[132] This is because carbon pricing provides policy signals that carbon is no longer a favoured means of energy and directly addresses market failures.[133] Market failures are differences in the private price of an activity and the social cost of carbon, which is the actual price of carbon when other factors, such as climate change, are considered.[134] Carbon prices are an automatic way to 'factor the price of carbon' into purchases. Thus, businesses that use less carbon and transition to a low or no carbon supply chain will fare better. The principles of carbon pricing include environmental effectiveness, economic efficiency, and providing flexible policy and incentives for innovation.[135]

There are many design considerations for broad-based carbon pricing mechanisms. First, there should be certainty in the carbon price and in the amount of GHGs that can be emitted.[136] Second, administrative costs and how to comply with the requirements should be clearly outlined.[137] Third, whatever mechanism is chosen should be as efficient and flexible as possible to accommodate the different sectors covered, and which may not yet have a valid GHG alternative.[138] Fourth, there needs to be a clear plan for the scheme's proceeds and how to manage them.[139] Fifth, certain additional parameters should be explored such as outside participation, transparency, and any other complementary measures that aid in the function and efficiency of the carbon mechanism.[140] Finally, the price of carbon needs to reflect not just the monetary value, but also the social cost of carbon.[141] With this in mind, correctly pricing carbon can encourage behavioural changes of the general population and can prompt corporations to move away from GHG emissions.[142]

A. Forms of Carbon Pricing

[129] Working Group on Carbon Pricing Mechanisms Final Report 2016: Government of Canada Publications - Canada.ca. at 5.
[130] Ibid at 7.
[131] Ibid.
[132] Alexander Wood, "Carbon Pricing and Climate Policy". Lecture, Webinar. May 5, 2015, at slide 4.
[133] Ibid.
[134] Ibid.
[135] Ibid at slide 6.
[136] Working Group on Carbon Pricing Mechanisms Final Report 2016: Government of Canada Publications - Canada.ca. at page 13.
[137] Ibid at 14.
[138] Ibid at 15.
[139] Ibid at 16.
[140] Ibid at 16; Alexander Wood, "Carbon Pricing and Climate Policy". Lecture, Webinar. May 5, 2015, at slide 11-12.
[141] Ibid at 7.
[142] Ibid at 8.

The three most frequently used mechanisms of carbon pricing are carbon taxes, performance standard systems, and cap-and-trade systems.[143]

I. Carbon Taxes

One method of carbon pricing is levying a carbon tax. A carbon tax is a fee imposed on carbon-based fossil fuels. Carbon dioxide emitters gain certainty about the cost of their CO_2 emissions through carbon taxes since they are an explicit form of carbon pricing. Therefore, carbon taxes are a cost-effective way to achieve a reduction in emissions. However, they do not guarantee a maximum level of emissions reduction, so carbon taxes should be used in tandem with other emissions-reduction strategies.

Carbon taxation schemes are shown to be superior policy models to cap-and-trade programs, despite the political pull to such programs to avoid the use of the word 'tax'.[144] National cap-and-trade systems are difficult to harmonize globally whereas harmonization of domestic carbon taxes using border carbon adjustments is a more familiar and straightforward process. The US Congressional Budget Office compared a cap-and-trade model with a carbon tax and found that a carbon tax system is more efficient and practical than a cap-and-trade system.[145]

Many countries have chosen different decarbonization systems and rates. It is for this reason that BCAs are necessary to equalize the trade of goods produced in countries with differing decarbonization costs. If a good is produced in a low decarbonization country and is imported, a tax on the import can equalize its cost to the same level as similar domestically produced products. The country with higher carbon tax could then retain the revenue generated by equalizing the carbon taxes. This provides incentives for exporting countries to create similar carbon taxes.[146]

II. Performance Standard Systems

Output-based pricing systems (OBPS) apply a price to the carbon pollution of industrial facilities that emit above a specified limit of GHGs. The limit corresponds to a relevant emissions-intensity standard. Facilities that emit less than the limit that will receive 'surplus credits' from the government that they can bank for future use or trade to another participant in the output-based pricing system. Banking involves saving allowances purchased or received in one period for use later. Trading allows entities to choose the most appropriate way to meet their compliance obligations. Facilities whose emissions exceed their limit will need to submit compliance units (surplus credits banked from a previous year or acquired from another facility or offset credits) or pay the carbon price to make up the difference. Under this system, only a portion a facility's emissions will be subject to a direct price obligation. Note that setting limits for usage and banking

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[143] Ibid at 8.
[144] James Handley, "Imagine: A Harmonized, Global CO2 Tax", *Carbon Tax Center* (11 March 2009), online: < https://www.carbontax.org/blog/2009/03/11/imagine-a-harmonized-global-co2-tax/>.
[145] See Congressional budget office https://www.cbo.gov/publication/44223 , https://www.cbo.gov/sites/default/files/110th-congress-2007-2008/reports/04-24-cap_trade_testimony.pdf https://www.cbo.gov/system/files/2021-12/57580-Emissions.pdf .
[146] James Handley, "Imagine: A Harmonized, Global CO2 Tax", *Carbon Tax Center* (11 March 2009), online: < https://www.carbontax.org/blog/2009/03/11/imagine-a-harmonized-global-co2-tax/>.

too high creates a risk to the extent that the entire scheme will be rendered ineffective by continuing to allow significant harmful emissions.

The aim of an OBPS is to minimize competitiveness and carbon leakage risks, while retaining the incentives to reduce emissions created by the carbon pricing measure. Carbon leakage occurs when, in response to the OBPS, an emissions-intensive trade exposed (EITE) industry moves to another country or jurisdiction rather than reducing emissions where the carbon pricing scheme is implemented. Competitiveness concerns are based in the fear that an industry subject to carbon pricing will face higher production costs domestically which will translate to their decreased competitiveness in international markets. EITE industries include utility power, iron, steel, smelting and refining, pulp and paper, metal mining, forestry, and chemicals and fertilizers. These industries are particularly affected by carbon pricing measures since they face significant international competition and are large emitters. Thus, they require specific additional attention.

Strategies for mitigating carbon leakage and competitiveness should be targeted, transparent, and temporary so as to be effective without undermining the carbon pricing scheme's objective.[147] Tools that can be used for mitigating leakage include: sector-specific treatment and benchmarking;[148] indirect measures to support EITE industries;[149] tax measures;[150] investments in emissions-reducing innovation and technology;[151] direct transitional support;[152] border carbon adjustments;[153] and ongoing monitoring.[154]It is necessary to define, be consistent, and maintain transparency with regard to which industries are and are not EITE.[155] Mitigation of competitiveness and carbon leakage in EITE industries needs to be flexible and constantly reassessed so as to meet the realities of the industries.[156] Ongoing collection of data on EITE sectors is necessary to further understanding about the sector challenges and to present the best policy options going forward.[157]

Competitiveness and Large Emitters

Large Emitters Programs (LEPs) exist to ensure fairness in competition. The goal is to create incentives for reducing emissions while preventing shifts in production or investment to jurisdictions with weaker policies. As such, OBPSs make special accommodation (lower compliance) for facilities above a certain emissions threshold and/or meet other criteria. Usually, an emissions intensity performance benchmark is used to calculate the quantity of GHGs permitted by a large emitter with a fixed carbon price. There are also large emitter hybrid systems which

[147] Pan-Canadian Approach to Pricing Carbon Pollution: Interim Report 2020.: En4-423/1-2021E-PDF." Government of Canada Publications – Canada.ca at page 109. April 03, 2013. Accessed August 22, 2021.
[148] Ibid.
[149] Environment and Climate Change Canada, "Technical Paper on the Federal Carbon Pricing Backstop" (2017) Public Inquiries Centre at 5.
[150] Pan-Canadian Approach to Pricing Carbon Pollution: Interim Report 2020.: En4-423/1-2021E-PDF." Government of Canada Publications - Canada.ca at page 109. April 03, 2013. Accessed August 22, 2021.
[151] Ibid.
[152] Ibid.
[153] Ibid
[154] Ibid.
[155] Ibid.
[156] Ibid.
[157] Ibid.

calculate compliance tonnes based on three main types of emission benchmarks: output-based allowances linked to the emission intensity of production; historical emissions; and other metrics. There has been a shift from facility performance benchmarks to more uniform sectoral performance benchmarks. The programs contain a maximum compliance price that can be paid, tradable emission performance credits, and offsets that can be bought from approved projects.[158]

To compare treatment of LEPs across carbon pricing systems, five indicators of effectiveness can be analyzed. First, is the evenness of LEP inclusion thresholds. Thresholds dictate specific emissions levels that are a prerequisite for inclusion in LEPs. Uneven thresholds likely lead to uneven carbon costs between competing industries in different jurisdictions.

Second, criteria for EITE treatment must be considered. Tests exist to determine EITE status in LEPs, along with adjustments to emission standards and benchmarks. Large emitters that are considered EITE are afforded a lower average cost through special treatment. Approaches to identifying EITE facilities and granting preferential treatment across jurisdictions are inconsistent. The result is a differing level of preferential treatment to facilities that are often competing in the same markets. This can lead to domestic competitiveness risks and therefore carbon leakage.

Third, the average cost incentive drives long-term investment decisions but can induce carbon leakage if not managed correctly. The average cost estimates contain uncertainty; they are at best, directional. Sources of uncertainty primarily relate to the assumptions about sector benchmarks versus the actual emissions performance of facilities. There is also a small degree of uncertainty since some large emitter emissions are missing. The average cost incentives for large emitter sectors vary significantly within programs and across jurisdictions, indicating a misalignment of domestic competitiveness and potential inter-jurisdictional leakage. With these misaligned, some entities are afforded the opportunity to achieve compliance with lower abatement costs, leading to misaligned marginal and average incentives between facilities that are often competing domestically. Opt-in provisions also exist to reduce the competitiveness impact on smaller facilities that are not characterized as LEPs under mandatory thresholds. From an effectiveness standpoint, opt-in provisions lower the long-term effectiveness of carbon pricing since the large emitter treatment lowers the average cost of the carbon price.[159]

Fourth, long-term signals can be transmitted through annual cap declines or the adjustment of rates. Tightening rates, in the LEP context, are planned changes in the level of the benchmarks, implemented as annual reductions for a sector, facility, or product performance benchmark. As benchmarks become more stringent, the quantity of compliance tonnes owed by a facility rises, as does the average cost of carbon. The increased average cost increases effectiveness. Generally, two mechanisms are used in LEPs to tighten benchmarks and gradually reduce free allowances: cap declines and annual tightening rates. Tightening rates are particularly important as the competitiveness landscape changes. As more jurisdictions implement stringent climate policy, the

[158] Sawyer, D., S. Stiebert, R. Gignac, A. Campney, and D. Beugin. 2021. 2020 Expert Assessment of Carbon Pricing Systems. Canadian Institute for Climate Choices at https://publications.gc.ca/collections/collection_2021/eccc/En4-434-2021-eng.pdf

[159] Ibid.

"playing field" becomes more level in international markets and the need for measures to address competitiveness and leakage concerns decrease. [160]

Fifth, compliance flexibility mechanisms help ensure low-cost compliance and the smooth functioning of credit and allowance markets. They are alternative ways for emitters to comply with OBPS by decreasing both average and marginal cost incentives. Flexibility mechanisms common across carbon pricing programs include trading and compliance use limits; offsets; and holding limits and banking. Offsets are emissions reductions or carbon sequestration from activities outside the scope of carbon pricing systems. Provided there is a protocol in place, offsets can be generated and then used for compliance. Offsets may be domestic or international. Offsets extend the carbon price to other emission sources, which may not be covered, lowering average cost incentives. Offsets, however, are not uniform. Holding limits are the largest number of emission allowances or credits that a participant can hold in its holding account at any given time. Banking can create surplus compliance units that accumulate in the system, driving down the long-term marginal cost incentive. Many jurisdictions impose a time limit on holding performance credits or offsets. Again, these limits are not uniform. [161]

I. Cap-and-Trade

Cap-and-trade schemes establish maximum emissions levels rather than minimum carbon prices. Under such a regime, a governing body "sets a limit, or cap, on the total level of GHG emissions - including CO_2."[162] Calculations on carbon pricing for specific emissions sources or fuels must be based upon factors such as those used for the reporting requirements set out in the UNFCCC.[163]

Emissions Trading Schemes

Emissions Trading Schemes (ETS) are one iteration of cap-and-trade programs. Emission allowances are distributed that permit emitting up to a specified amount. These allowances are bought and sold, essentially creating a market for CO_2. There are several positive aspects of ETS regimes: the amount of CO_2 emitted per year is set, it is cost effective, it can generate government revenue, and allows for flexibility.[164]

II. Conclusion on Forms of Carbon Pricing

There are many important policy considerations to keep in mind for carbon pricing. First, carbon leakage is driven by uneven costs for businesses between jurisdictions.[165] Second,

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[160] Ibid.
[161] Ibid.
[162] World Bank. "Putting a Price on Carbon with an ETS." at page 1.
[163] UN General Assembly, *United Nations Framework Convention on Climate Change: Resolution/Adopted by the General Assembly*, 20 January 1994, A/RES/48/189.
[164] "Each Country's Share of CO2 Emissions." Union of Concerned Scientists. July 16, 2008, Updated August 12, 2020. https://www.ucsusa.org/resources/each-countrys-share-co2-emissions. Accessed November 4, 2021.
[165] Pan-Canadian Approach to Pricing Carbon Pollution: Interim Report 2020.: En4-423/1-2021E-PDF." Government of Canada Publications - Canada.ca at page 90. April 03, 2013. Accessed August 22, 2021.

emissions intensity and trade exposure metrics can be used by themselves or in tandem with other policies as a means of carbon leakage assessment.[166] Third, there is no singular approach to determining the role of competition impacts in carbon pollution pricing policy.[167] Fourth, carbon leakage is currently being managed.[168] Fifth, there are opportunities for EITE sectors to use carbon pricing to their advantage.[169] Sixth, broad coverage of carbon pricing policy is the current best option for managing emissions.[170] Finally, any carbon pricing measure also needs proper integration withing corresponding climate policy,[171] and this integration must be broadly applied to every aspect of policy in business to be effective in its objective of reducing GHG emissions.[172]

Awareness of carbon leakage and competitiveness when setting any policy is crucial.[173] In Canada, competitiveness impacts will largely depend on the carbon pricing employed.[174] Available policy tools for competitive pressures focus on three approaches: differential treatment for affected sectors, revenue recycling, and border tax adjustments.[175] Independent of any framework chosen, there are two important issues that always need to be considered: harmonizing the recognition of offset credits, and improving emissions reporting between provincial, territorial, and federal emissions data.[176] Additionally, addressing specific issues that generally relate to broad-based carbon pricing mechanisms will be important. Examples of specific issues include lack of information; benefits of an investment not accruing wholly to the investor; creating monopolies in the market; disconnects between energy use and carbon price; inelasticity; lack of certainty; no access to lower cost cleaner alternatives; incomplete coverage, and lack of capital.[177]

The Canadian Ecofiscal Commission, a panel of independently financed economists, recommends policies and actions to integrate economic development within climate change mitigation. They proposed that for any economic activity suggested, we should identify its negative environmental impact, devise measures to avoid, mitigate or adapt to those impacts and include the cost of those measures in the cost of the product. They anticipate that a problem with this will be communicating this to the public. They made the following recommendations for making this an easier 'sell' to the public. First, the word 'tax' should be avoided when pricing pollution or greenhouse gas emissions. The public understanding of a tax is something that is taken by the government to fund services, so 'tax' phrasing may be greeted with hostility. Second, it is important to ask who will be most credible to spread the message. Studies show that it should not politicians, political staff, or lobbyists because these roles breed suspicion. Scientists are more credible; however they face challenges making their presentations understandable to the masses. Third, raising support for the policy should begin where the public's attention is. For example, illustrating benefits on a more local scale rather than a global one could be more easily envisioned

[166] Ibid.
[167] Ibid.
[168] Ibid.
[169] Ibid.
[170] Ibid.
[171] Alexander Wood, "Carbon Pricing and Climate Policy". Lecture, Webinar. May 5, 2015, at slide 16.
[172] Ibid at slide 16.
[173] Working Group on Carbon Pricing Mechanisms Final Report 2016: Government of Canada Publications - Canada.ca. at page 34.
[174] Ibid.
[175] Ibid.
[176] Ibid at 48.
[177] Ibid at 11-12.

by the common citizen. Fourth, honesty should be prioritized; consumers should be made transparently aware of the ultimate costs of the policy. Fifth, the burden of the policy implementation should be even spread out; If energy producers are required to provide environmental impact statements, then proponents of environmental protection measures should similarly be required to produce economic and consumer impact statements.[178]

[178] Preston Manning, "How to Communicate a Good Idea: Carbon Pricing" (19 November 2014), online: *The Globe and Mail* < https://www.theglobeandmail.com/opinion/how-to-communicate-a-good-idea/article21642629/>.

4. Canadian Carbon Pricing Regulations

To be effective, carbon pricing should apply to a broad set of emissions sources throughout Canada, with increasing stringency over time either through a rising price or declining cap. Thus, effectiveness is a function of both coverage and an expectation of an increasingly stringent price signal. When choosing a carbon pricing mechanism there are several considerations that need to be considered including: level desired of certainty in the GHG emissions reduction level; clarity; flexibility; competitiveness; ability to work in conjunction with other climate change policies; and the GHG reduction opportunities offered.[179] For Canada, another important consideration is the possibly negative effects carbon pricing schemes can have on Northern and Indigenous communities as a result of the challenges these communities disproportionately face.[180] Additional attention must be given to supporting the Indigenous communities of Canada in the transition to a greener economy.

Federalism is another political challenge for Canadian climate change policy.[181] Regional diversity complicates climate policy since economic outlooks differ between provinces. Thus, the federal government recommended that provinces design carbon pricing systems that fit each of their particular realities.[182] As such, there are both federal and provincial aspects of carbon pricing. The Canadian carbon pricing landscape is made-up of five distinct carbon pricing groupings:

1. Manitoba, Nunavut, Ontario, and the Yukon implemented the federal fuel charge and OBPS. While all four jurisdictions fall under the federal backstop, there are design differences in each system.
2. Newfoundland implemented provincial fuel charges and large emitter programs. In such systems, the carbon price must align with the federal carbon price schedule, but policy may contain exemptions.
3. Alberta, Saskatchewan, PEI, and New Brunswick implemented a hybrid Federal-Provincial Fuel Charge and LEP. Alberta and Saskatchewan have their own large emitter programs, while the federal fuel charge is applied to covered fuels. PEI and New Brunswick have chosen the opposite by implementing their own fuel charge but deferring to the federal OBPS.
4. British Columbia and the Northwest Territories implemented a carbon tax.
5. Quebec and Nova Scotia implemented a cap-and-trade system. [183]

The federal strategy for the transition towards a net-zero carbon and climate-resilient economy, as led by the Centre for Greening Government of the Treasury Board of Canada Secretariat, aims that by 2050 emissions should be net-zero with low-carbon fleets and

[179] Working Group on Carbon Pricing Mechanisms Final Report 2016: Government of Canada Publications - Canada.ca. at 16.
[180] Ibid at 8.
[181] Brendan Haley, "A green Entrepreneurial State as Solution to Climate Federalism" (2016) Broadent Institute at 2.
[182] Ibid.
[183] Government of Canada, "Carbon Pollution Pricing Systems Across Canada", (2022) online: <https://www.canada.ca/en/environment-climate-change/services/climate-change/pricing-pollution-how-it-will-work.html>.

infrastructure; greener construction; emissions and plastic-conscious procurement of goods and services; community engagement; and oversight and performance measurement.[184]

A. Federal

There are three main classes of choices for the federal government: (1) price-based systems that apply a carbon charge or tax on covered emissions; (2) quantity-based systems that set a cap on covered emissions; and (3) large Emitter Programs. In price-based systems, a price is placed on the carbon emission and this price charged for such emissions. There are a variety of aspects of emissions that can be priced. For example, all emissions could be priced generally, or a price could be put on emissions which result from the combustion of specific fuels.

The quantity-based system is cap-and-trade programs. A regulator will issue a quantity of emission allowances (the cap) that is less than expected emissions without the scheme in place. Through a compliance obligation, scarcity will drive demand in an allowance market designed by the regulator (trade). A carbon price emerges as a result by way of the supply and demand dynamic.

The large emitter program is the federal OBPS for large emitters designed to price carbon emissions while limiting competitiveness and carbon leakage risks.[185] The federal fuel charge exists in Ontario, Manitoba, Saskatchewan, Yukon, Nunavut, Alberta.[186] The federal OBPS applies to Ontario, New Brunswick, Manitoba, Prince Edward Island, Yukon, and partially Saskatchewan. It will eventually stop applying in New Brunswick and Ontario since their provincial schemes meet the federal benchmark.[187]

I. Pan-Canadian Carbon Policy Framework

The Pan-Canadian Framework on Clean Growth and Climate Change (PCF) was in 2016 to address climate change in Canada.[188] The PCF's objective is to grow the economy while reducing GHG emissions and building resilience to adapt to a changing climate.[189] The Framework includes a mix of behavioural and structural changes including performance regulations, carbon pricing, incentives, and innovation programs. As well, it contains fifty measures and four key pillars of pricing carbon; complementary actions to further reduce emissions, measures to adapt to the impact of climate change; and actions to accelerate innovation in technology and jobs.[190]

In March 2016, Prime Minister Justin Trudeau and the provincial premiers agreed to produce a joint climate strategy that would help satisfy the commitments made at the Paris Climate

[184] Treasury Board of Canada Secretariat, "Greening Government Strategy: A Government of Canada Directive" (2020), online: <https://www.canada.ca/en/treasury-board-secretariat/services/innovation/greening-government/strategy.html>.
[185] Pan-Canadian Approach to Pricing Carbon Pollution: Interim Report 2020.: En4-423/1-2021E-PDF." Government of Canada Publications - Canada.ca at page 7. April 03, 2013. Accessed August 22, 2021.
[186] Ibid.
[187] Ibid.
[188] Saskatchewan et al v Canada re Greenhouse Gas Pollution Pricing Act (2018) CACV3239 at para 31.
[189] Environment and Climate Change Canada, "Technical Paper on the Federal Carbon Pricing Backstop" (2017) Public Inquiries Centre at 4.
[190] Saskatchewan et al v Canada re Greenhouse Gas Pollution Pricing Act (2018) CACV3239 at para 32.

Summit.[191] British Columbia, Alberta, Ontario, and Quebec represent 80% of Canada's emissions, and they have already introduced or are introducing carbon-pricing programs in the form of direct taxes or cap-and-trade systems. Trudeau has expressed that with this approach, the federal cap will permit the provinces enough flexibility to pursue their own approaches so long as they at least meet the federal minimum.[192]

In October 2016, under the PCF, the federal government established a benchmark for ensuring that carbon pricing applies to a broad set of emission sources throughout Canada by 2018 with increasing stringency over time. The federal government also committed to implement a federal carbon pricing backstop system that applies in any province or territory that does not have a carbon pricing system that aligns with the benchmark in place by 2018.[193]

The Pan-Canadian approach to pricing carbon pollution provides jurisdictions the flexibility to implement either an explicit price-based system (i.e. a carbon tax in British Columbia or a hybrid approach of a carbon levy and an output-based pricing system in Alberta), or a cap-and-trade system (i.e. in Quebec and Ontario).[194] Critically, not only can the backstop apply in a jurisdiction that does not have a carbon pricing system in place, it can also supplement systems that do not fully meet the benchmark. For example, it could expand the sources covered by provincial carbon pollution pricing or it could increase the stringency of the provincial carbon price.[195] The backstop instrument will be composed of two key elements: (1) a carbon levy applied to fossil fuels and (2) an output-based pricing system for industrial facilities that emit above a certain threshold, with an opt-in capability for smaller facilities with emissions below the threshold.[196] Both the carbon levy and output-based pricing system will price CO_2 per tonne. Compliance options for the OBPS include surplus credits, eligible offset credits from an existing provincial system, and federal offset credits.[197]

II. Greenhouse Gas Price Pollution Act

In June 2018, the federal *Greenhouse Gas Pollution Pricing Act* (GGPPA) came into effect. The GGPPA implements a federal carbon pollution pricing system to reduce GHG emissions and to encourage clean technologies by placing a regulatory charge on carbon-based fuels and establishing a regulatory trading system for large, industrial GHG emitters. The *Act* is merely a 'backstop', contemplated in the PCF, and thus only applies to provinces who do not meet Canada's minimum required reductions.

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[191] See Vancouver Declaration, https://news.gov.bc.ca/stories/vancouver-declaration-on-clean-growth-and-climate-change and https://www.canada.ca/en/environment-climate-change/services/archive/climate-change/clean-growth-working-group-reports.html .

[192] Shawn McCarthy, "Finance Canada Eyes Federal Tax on Carbon" (12 June 2016), online: *The Globe and Mail* <https://www.theglobeandmail.com/report-on-business/industry-news/energy-and-resources/finance-canada-eyes-federal-tax-on-carbon/article30408215/>.

[193] Environment and Climate Change Canada, "Technical Paper on the Federal Carbon Pricing Backstop" (2017) Public Inquiries Centre at 4.

[194] Ibid.

[195] Ibid at 5.

[196] Ibid.

[197] Pan-Canadian Approach to Pricing Carbon Pollution: Interim Report 2020.: En4-423/1-2021E-PDF." Government of Canada Publications - Canada.ca at pages 8-9. April 03, 2013. Accessed August 22, 2021.

The key objective of the GGPPA is to affect behavioural changes over time and lower Canada's GHG emissions by implementing greenhouse gas pricing. [198]It authorizes the federal carbon pricing backstop in two parts.[199] Part 1 implements the fuel charge, including what fuels it applies to, how it applies, where it doesn't apply, and who is charged.[200] Part 2, outlines the OBPS framework and "implements the excess emissions charge for large industrial emitters",[201] including the main powers and authorities, risk of carbon leakage, and a price signal to encourage companies to decrease their GHG emissions.[202] The two parts of the Act operate together.[203]

The threat of climate change, which is largely caused from GHG emissions, leads in the need for a collective approach. As a country, Canada can adopt minimum national standards to reduce GHG emissions because even one province not participating increases risk. Additionally, the effects of GHG emissions are not confined to the location of the source. Some provinces experience impacts that are grossly disproportionate to their individual contributions.

There was provincial pushback to the GGPPA, but the federal government argued that the GGPPA is valid because GHG emissions are a national concern to which the federal government's peace, order, and good government (POGG) powers apply.[204] Thus, the federal government has the power to enact regulatory schemes like the GGPPA[205] and the Pan-Canadian price on carbon implemented via the GGPPA respects Canada's federalism.[206]

III. Judicial Consideration of the GGPPA

When the GGPPA was created, it was challenged by some provinces for being unconstitutional under Canada's federalist structure and the division of powers. The Attorney General of Ontario claimed that Part 1, establishing the carbon-based fuel charge, and Part 2, the mechanism for pricing industrial GHG emissions, were unconstitutional. Ontario also submitted that Parliament cannot regulate all activities producing GHG emissions, and that Parts 1 and 2 of the Act could not be supported under any federal head of power. The province and the federal government went to court over these claims. The Ontario Court of Appeal (ONCA) found the *Act* constitutional within Parliament's 'national concern' jurisdiction under the 'Peace, Order, and good Government' (POGG) clause of s 91 of the *Constitution Act*. The ONCA also found that the charges imposed by Parts 1 and 2 of the Act are constitutional because they are regulatory in nature, connected to the purposes of the Act, and are not actual taxes.[207]

The ONCA's analysis followed the Supreme Court of Canada's (SCC) analytical approach from *Crown Zellerbach* to determine the constitutionality of legislation. The Court looked at both

[198] *Saskatchewan et al v Canada re Greenhouse Gas Pollution Pricing Act* (2018) CACV3239 at para 38.
[199] Ibid at para 45.
[200] Ibid at paras 49-51.
[201] Ibid at para 45.
[202] Ibid at para 52.
[203] Ibid at para 45.
[204] Ibid at para 69.
[205] Ibid at paras 111-130, 131-141.
[206] Ibid at paras 104-110.
[207] *Reference re Greenhouse Gas Pollution Pricing Act,* (2019) ONCA 544.

the characterization and classification of the Act. The preamble of the Act characterized the pith and substance of the Act as "establishing minimum national standards to reduce GHG emissions" – a matter of national concern that provinces are constitutionally incapable of addressing. The Court classified the Act within the national concern branch of POGG because the matter has a singleness, distinctiveness, and indivisibility that distinguishes it from matters of provincial concern, and the impact of the Act does not infringe provincial legislative power. However, a matter of national concern cannot infringe on provincial legislative jurisdictions. Since the Act only deals with *minimum* national standards, there is room for provinces to enact their own legislation. The Court found that the Act therefore strikes an appropriate balance between Parliament and provincial legislatures and is constitutionally valid.[208]

The Court also found that the fuel charge and excess emissions charge are constitutional and do not offend s 53 of the *Constitution*. Since behaviour modification is one of the purposes of the charges and regulatory charges do not need to reflect the cost of administration of the scheme nor need to be cost recovery mechanisms, Parts 1 and 2 of the Act are constitutional.[209]

IV. Carbon Tax

The federal government levied a tax on the carbon content of fuels. Although provinces and territories can set their own taxation amount, the federal government's taxation level sets the minimum requirement. Currently, the tax on fuel applies to 21 fossil fuels.[210] The fuel rate is \$20/tonne of CO_2e as of April 1, 2019, and it will rise to \$50/tonne of CO_2e by April 1, 2022.[211] All direct revenue from the tax will be returned to the jurisdiction of origin.[212]

In most cases, the carbon tax will be applied early in the supply chain of each fuel used and will be payable by the producer or distributor. The final user of a fuel will not generally have any special rights or obligations in respect of the tax, as the user will purchase tax-paid fuel in most cases. Fuel producers and distributors will be able to acquire and hold fuel without the tax being payable until the fuel is subsequently used by the producer or distributor or delivered to a final retailer or end user. For purposes of the tax, use generally include fuel that is combusted, vented, or flared. Fuel used as a raw material, diluent, or solvent in manufacturing or a petrochemical process that does not produce heat or energy will not be subject to the carbon levy. This general approach will be achieved by series of application rules and registration requirement.[213]

It is arguable that Canada's arrangement in its current form somewhat impedes the competitiveness of Canadian businesses internationally.[214] A successful carbon tax in any country must work with the carbon pricing system of the countries with which it trades to not impede

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[208] Ibid.
[209] Ibid.
[210] Pan-Canadian Approach to Pricing Carbon Pollution: Interim Report 2020.: En4-423/1-2021E-PDF." Government of Canada Publications - Canada.ca at page 7. April 03, 2013. Accessed August 22, 2021.
[211] Ibid.
[212] *Saskatchewan et al v Canada re Greenhouse Gas Pollution Pricing Act* (2018) CACV3239 at para 47.
[213] Pan-Canadian Approach to Pricing Carbon Pollution: Interim Report 2020.: En4-423/1-2021E-PDF." Government of Canada Publications - Canada.ca at page 7.
[214] Valle, Luc, and Jean Michaud. "When It Comes to Taxing Carbon, Canada Has It Exactly Backward." Energy. June 14, 2017. Accessed August 12, 2021.

business. For this reason, Canada should implement a BCA system because it may be the most effective method of tackling climate change by capturing both imports and domestic production.[215]

V. Electricity Sector Regulation

Power generation will be a determining factor in the regulation of emissions standards.[216] Without well designed, consistent, and harmonized regulatory emission schemes, there is real danger of interprovincial carbon leakage.[217] Fortunately, Canada's geography is favourable for certain renewable energy sources. Ideally grid interconnected generators in Canada would benefit from these variable energy sources. However, the federal government does not have free hand in the electricity sector; it is handled by the provinces in complex web of regulators. Thus, a harmonized federal-provincial system is likely the best method of dealing with carbon leakage issues since the costs of achieving net-zero electricity systems differ between provinces.[218] As well, provinces with higher carbon intensity electricity will need some flexibility to transition more gradually.[219]

In a harmonized context the federal government creates a backstop with their GHG electricity policies. Where a province's GHG policies are insufficiently stringent, the federal government may opt to apply its carbon price or regulatory standard as a backstop in that province. There are two key federal policies that apply to the energy sector. First, the federal government has an emissions performance standard that sets emissions limits of C0/2 kWh for electricity generation plants. Second, the federal government has a price on carbon it can apply to electricity plants via its industrial OBPS.

Given the necessity of a Canadian shift to zero-emission electricity, Canadian Institute for Climate Choices (CICC) proposes that the federal government adjust the stringencies of these two policies to ensure that electricity generation in every Canadian province is net-zero by 2035 at the latest and remains that way as the system grows to 2050. Specifically, the carbon intensity standard should fall to net-zero CO2/kWh by 2030 in provinces dominated by hydro, nuclear and wind, and by 2035 in provinces currently relying on some coal and natural gas. The OBPS, as applied to all electricity generators, should adjust the benchmark standards until 100 percent of electricity related GHG emissions are charged the rising carbon price that is currently applied to fuels, albeit again with different 2030 and 2035 deadlines depending on the province.[220]

The CICC further proposes that the federal government continue to present its policies as backstops that can be superseded by equivalent provincial policies. However, the federal government must ensure that this co-operative approach does not result in reduced stringency by granting equivalency to provincial policies that are less likely to achieve a national zero-emission

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[215] Ibid.
[216] Rubin, supra note 67, at 5.
[217] Ibid at 5.
[218] Ibid at 6
[219] Mark Jaccard, "A zero-emission Canadian electricity system by 2035." Sustainability Suspicions" (23 August 2021) <http://markjaccard.blogspot.com/2021/08/a-zero-emission-canadian-electricity.html.>.
[220] Canadian Climate Institute, "Canada's Net Zero Future: Finding Our Way in the Global Transition" https://climatechoices.ca/wp-content/uploads/2021/02/Canadas-Net-Zero-Future_FINAL-2.pdf

electricity system. To that end, we propose ongoing independent oversight of federal-provincial equivalency agreements by Canada's Net-Zero Advisory Body.[221]

Finally, the CICC proposes that the federal government encourage multi-government equivalency agreements with two or more neighbouring provinces that wish to be treated as one entity for the purpose of electricity-sector GHG emissions. This would be valuable because costs can be significantly lowered if federal policy promotes expanded grid interties between hydro reservoir–endowed provinces and their neighbours.[222]

Analysis of Distribution of Carbon Pricing Costs Across Economic Sectors and Households

To determine the share of pre-rebate carbon costs borne directly by emitters, total carbon costs were calculated from the estimated program coverage and average costs and then put through a model of Canada's economic structure of supply and use.[223] How carbon costs are passed on, as prices increase, through supply chains to businesses, households, and international exports was considered. Revenue recycling, however, was not. Therefore, it is not appropriate to interpret the costs estimates in this section as the net carbon costs borne by households and businesses. Additionally, since provincial systems rebate almost all carbon costs, we would expect that on average for all households and businesses, the net carbon costs are close to zero, with some households even overcompensated.

Carbon costs related to each emission category were allocated to the appropriate production sector, and by extension, to the commodity consumed. The ability to pass on costs was considered using three scenarios. Based on past analysis and modelling, an average overall cost pass-through rate for Canadian industry was calculated to be in the order of 60%, with sectors like trade-exposed industry passing on a small share of the cost, and utilities passing on nearly 100%. To show the distributional range of carbon costs, the implications of alternative cost pass-through assumptions on households and sectors were considered (0% and 100%). Carbon costs were then compared to income or GDP, with carbon costs expressed as a fraction of household income or a fraction of GDP for government, other industry, and large emitters. Notably, costs are those before any revenue recycling and rebates. Revenue recycling analysis was not undertaken because of great variation in schemes.

$9.6B in annual carbon costs from all carbon pricing systems based on 2018 emissions and 2020 prices was estimated. Carbon costs represent 0.39% of 2018 household income in the average estimated pass-through and overall carbon costs paid by households not exceeding 74% of that collected from covered fuels. Under the average pass-through estimate, carbon costs represented 0.68% of GDP for large emitters. Large emitters have higher carbon costs than anyone else, even when factoring in the average cost adjustments afforded under LEPs. Finally, since all LEPs return most of the revenue collected back to the sector, the impacts are likely lower than predicted. Other Industry and Business carbon costs represent 0.11% of GDP in the average pass-through scenario.

[221] Ibid.
[222] Jaccard, Mark. "A zero-emission Canadian electricity system by 2035." Sustainability Suspicions" (23 August 2021) <http://markjaccard.blogspot.com/2021/08/a-zero-emission-canadian-electricity.html.>.
[223] Supra note 220.

They do not enjoy LEP benefits, and households typically get a larger portion of rebates on covered fuels.

Future reviews need to take a closer look at revenue recycling within the country. Ideally, a detailed review of all the recycling programs and the proceeds collected would be compared against the carbon price paid by economic sectors and by households with different income levels. As well, there is no uniformity in how facilities can use performance credits and offsets to fulfill their compliance obligations. It is also observed that there are limited trading linkages between jurisdictions, hindering carbon finance flows, leading to higher cost mitigation outcomes. Section 3 of the *Federal Sustainable Development Act* can potentially be useful framework as "[t]he purpose of this Act is to provide the legal framework for developing and implementing a Federal Sustainable Development Strategy that makes decision-making related to sustainable development more transparent and subject to accountability to Parliament, promotes coordinated action across the Government of Canada to advance sustainable development and respects Canada's domestic and international obligations relating to sustainable development, with a view to improving the quality of life of Canadians."[224]

B. Provincial and Territorial

There are many different forms of provincial carbon pricing. British Columbia as a carbon tax. Quebec and Ontario have a cap-and-trade system. Alberta has a baseline credit system.[225] There are advantages and disadvantages of each system. The advantages of the carbon tax is that it provides certainty, but the disadvantage is that there is no certainty in physical GHG reductions.[226] The advantage of the cap-and-trade system is that it provides certainty in GHG reductions, but there is no certainty in price.[227] The advantages of the baseline credit system is that it helps manage emissions from readily growing sectors, but it does not provide certainty in absolute reductions.[228] However, one drawback is that regionally segmented carbon pricing will produce uneven economic incentives and emitters could end up paying different prices to pollute across borders.[229]

I. Ontario

Ontario is home to more than one third of Canadian clean technology companies. In late 2015, the provincial government announced the creation of a $325 million 'Green Investment Fund' that was called a 'down payment' on a proposed cap-and-trade program. This fund was to be financed from the planned auctions for emissions credits. [230] Furthermore, in 2017, the province implemented a cap-and-trade program that set a maximum amount of greenhouse gas pollution that businesses and institutions could emit. Companies could respond by investing in clean

[224] Ibid.
[225] Alexander Wood, "Carbon Pricing and Climate Policy". Lecture, Webinar. May 5, 2015 at slide 7.
[226] Ibid at slide 9.
[227] Ibid.
[228] Ibid.
[229] Brendan Haley, "A green Entrepreneurial State as Solution to Climate Federalism" (2016) Broadent Institute at page 2.
[230] Ontario Green Investment Fund https://www.ontario.ca/page/green-investment-fund.

technologies, burning fewer fossil fuels, or buying additional carbon credits. All proceeds of this program, up to $1.9B annually, will be invested to further reduce pollution and GGEs. Ontario will also use the Green Investment Fund to spur investment and innovation in clean tech which will help provide solutions to large emitters that face barriers in reducing GGEs.[231] [232]

The Ontario government instituted Bill 172: *An Act respecting Greenhouse Gas Emissions*[233] (Bill 172)[234] that requires certain emitters to quantify and report their GHG emissions and verify their reports. Bill 712 specifies which GHG emissions the *Act* applies to and sets out specific target goals to reduce them. Additionally, under Bill 172, the Minister is authorized to create emission allowances and credits. The key purpose of Bill 172 is to establish a broad carbon price through a cap-and-trade program to incentivize a behavioural change in people across the province with regards to mitigating GHG emissions and climate change.[235] Bill 172 recognizes that public interest requires a broad effort to reduce GHG emissions – the Ontario Government cannot address the climate challenge alone so collective action is needed. Under Bill 172, the Minister must look to First Nation and Métis communities for their traditional ecological knowledge in creating an action plan.[236]

Bill 172's cap-and-trade program is a market mechanism that influences economic decisions that directly or indirectly contribute to the emissions of GHG to encourage Ontarian businesses to change their high emitting behaviours.[237] Those who fall under the criteria are required to register as a mandatory participant in the program. Under the cap-and-trade program, participants must submit emission allowances and credits in the amounts of GHG they emitted. Only registered participants can purchase, sell, trade, or otherwise deal with the emission allowances and credits.[238] There are consequences include if a participant fails to submit all the required emissions allowances and credits. Failing to follow the Act and its regulations will constitute an offence.[239] Hearings are held by the Environmental Review Tribunal for specific orders under the Act and parties may appeal on a question of law to the Divisional Court.

Certain sectors in Ontario have been identified as EITE. These sectors may experience 'carbon leakage' impacts. Ontario's proposal contemplates distributing a portion of emissions allowances free of charge to large emitters involved in the production of trade goods which are vulnerable to carbon leakage. Ontario's proposal also outlines enforcement mechanisms and penalties. For example, penalties for when an entity's emissions exceed their allowances and/or offset credits.[240]

[231] Charles Sousa, "Jobs for Today and Tomorrow: 2016 Ontario Budget." Government of Ontario, (2016): 22-30.
[232] David Stevens, "Details of Ontario's Cap and Trade Program Coming Soon But Plans to Spend the Proceeds Are Already Being Announced." Aird Berlis. February 16, 2016. Accessed August 3, 2021.
[233] Bill 172, *An Act Respecting Greenhouse Gas*, 1st Sess, 41st Parl, Ontario, 2016.
[234] https://www.ontario.ca/laws/statute/s16007.
[235] Ibid.
[236] Ibid.
[237] Bill 172, *An Act Respecting Greenhouse Gas*, 1st Sess, 41st Parl, Ontario, 2016 at section 1(2).
[238] Ibid.
[239] Ibid.
[240] Thoms, Zoe. "Ontario Offers Public First Look at Cap and Trade Program Design Options." Aird Berlis. November 18, 2015. Accessed August 3, 2021.

II. Quebec and Nova Scotia

The Western Climate Initiative (WCI) was a collaborative effort between a group of American states and Canadian provinces to achieve a North American system for capping and trading GHG emissions allowances. Specifically, the WCI's regulation establishing a GHG emissions cap and trade system (the Regulation) was heavily influential on the Quebec province. On December 14, 2011, Quebec was the first Canadian province to adopt the Regulation. The Regulation's goal is to fully harmonize and integrate all member's cap-and-trade systems for GHG emissions allowances.

III. New Brunswick

New Brunswick's *Reduction of Greenhouse Gas Emissions Regulation – Climate Change Act*[241](the Climate Change Act) and *The Reporting and Reduction of Greenhouse Gas Emissions Standard*[242] (the Standard) came into effect on January 1, 2021. The Climate Change Act pertains to emissions reporting to the province when emissions are between 10,000 and 50,000 metric tonnes of CO_2.[243] It is meant for the purpose of quantifying and reporting on emissions in tonnes for facilities operating within New Brunswick. The purpose is to establish baseline emissions for these facilities based on the products produced. The Standard provides an explanation for yearly reporting of emissions, including who is to report, how it is to be reported, verification requirements and how to verify. The report demonstrates the formula that will be used to quantify emissions and what kinds of emissions will count.[244]

Under the Climate Change Act, regulated emissions are CO_2 excluding biomass, methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons, perfluorocarbons, imported and exported CO_2.[245] The companies will have to provide separate reports for assorted products that they are producing. Thus, it will not be a lump sum of all products the company is producing and their combined emissions; rather it will be broken down for each product which will allow different requirements based on the nature of each product. Finally, the Climate Change Act also provides the methodology that companies should use to quantify their emissions.[246]

IV. Recommendations for New Brunswick

All provincial carbon pricing systems within the country address competitiveness concerns to some extent, most notably through lowering average costs to large industrial emitters and through the recycling of carbon pricing proceeds. Efforts to address competitiveness impacts can also come with trade-offs in the effectiveness and cost-effectiveness of policy. Therefore, it is especially important to address competitiveness in a way that does not compromise effectiveness. For example, with respect to competitiveness, both a declining cap and a rising fixed carbon charge

[241] *Reduction of Greenhouse Gas Emissions Climate Change Act*, NB Reg 2021-43.
[242] *The Reporting and Reduction of Greenhouse Gas Emissions Standard* New Brunswick 2021, 43, O.C. 2021-152.
[243] Ibid.
[244] See Appendix I for detailed equations.
[245] *Reduction of Greenhouse Gas Emissions Climate Change Act*, NB Reg 2021-43.
[246] Id.

or tax apply a fixed price so there is no flexibility. Comparatively, quantity-based systems provide greater certainty on emission levels but there is greater cost uncertainty.

Specific green technology innovation policies have potential to encourage positive feedback between policy implementation and feasibility. Specific technology can also produce benefits other than GHG reductions that build political momentum.[247] The types of technology that have the greatest chance of evolving in a certain region are often linked to industrial structures.[248] This indicates that policies should be targeted to unique regional circumstances.[249] This policy approach would promote bottom-up energy transitions tailored to different regional environments and political priorities. Government "influences the direction of innovation when they manage training and educational institutions, produce information, set regulations, supply funds, purchase goods and services, and set targets."[250] Thus, supporting technology innovation is an essential policy measure to consider alongside carbon pricing measures.

An example of supporting innovation and regional priorities is Canada's pledge to help workers employed in the oil industry. For Canada to meet its commitment to keep global warming to 1.5 degrees, it is calculated that 83% of fossil fuels need to stay in the ground.[251] Complicating this reality is the fact that Canadian oil and gas production provides approximately 405,000 jobs across supply chains.[252] As the Canadian economy transitions away from oil, jobs will be lost which will affect approximately half of Canadian oil and gas employees.[253] A coherent labor transition plan is pivotal. As part of it, nearly ¾ of current oil and gas workers have skills that match alternative clean industries or IT occupations.[254] Geothermal energy could redeploy a significant number of the affected workforce with no, minimal, or moderate retraining.[255]Thus, provincial and federal support through investment and policy are be needed.[256] Many of New Brunswick's industries will require similar efforts. As such, New Brunswick can take inspiration from other jurisdictions.

[247] Brendan Haley, "A green Entrepreneurial State as Solution to Climate Federalism" (2016) Broadent Institute at page 16.
[248] Ibid.
[249] Ibid.
[250] Ibid at 4.
[251] Climate Action Network, "Facing Fossil Fuels' Future: Challenges and Opportunities for Workers in Canada's Energy and Labour Transitions" (14 October 2021), online: < https://www.usw.ca/news/media-centre/articles/2021/can-bgcanada-facing-fossil-fuels-report-oct2021>.
[252] Ibid.
[253] Ibid.
[254] Ibid.
[255] Ibid.
[256] Ibid.

5. Border Carbon Adjustments (BCAs)

BCAs are charges on imports and rebates on exports. BCAs work by charging goods at the border a carbon price equivalent to what they would have paid had they been produced under the domestic regime. BCAs ensure that foreign producers experience the same incentives and costs to reduce GHG emissions as domestic producers.[257] [258] Import fees prevent the evasion of emissions reduction costs by foreign producers.[259] They ensure that the cost of production faced by domestic producers are the same for foreign producers.[260] They impose a cost equivalent to domestic climate regulatory costs on exports. In other words, the imports that were never priced for carbon during production will have an added tax identical to the domestic products' tax.[261]An export rebate if given to local producers when they export goods that were subject to carbon pricing, can minimize competitive disadvantages these goods would face in the foreign market[262] (although it will not be legal under WTO law and can be found to be an export subsidy). The aim is to reduce GHG emissions and avoid trade advantages or disadvantages as governments enact different climate policies.[263]

Domestic decarbonization measures face a threat of carbon leakage because industries can relocate to other countries that do not have domestic decarbonization methods and have lower costs, thus evading efforts to combat climate change.[264] Carbon leakage also negatively impacts competition and potentially increases GHG emissions consumers buy carbon-intensive products that have been produced in countries without decarbonization measures at a lower price, evading all carbon costs, further contributing to climate change and greater GHG emissions.[265] As such, carbon leakage is a burden to global carbon emissions reduction efforts. BCAs level the playing field among competing producers and target carbon leakage.[266]

Although countries have committed to mitigating climate change through agreements like the Paris Agreement, uniform approaches have not been adopted since. This creates fear that if a country does adopt an environmental measure, it will be undermined by carbon leakage. BCAs are a solution because they can work to combat leakage.[267] In this way, BCAs balance international trade and climate policy since they allow countries to have ambitious climate policies while avoiding losses due to threats of competition.[268] [269] BCAs can also contribute to increased revenue

[257] Erin Campbell, Anne McDarris, & William Pizer, "Border Carbon Adjustments 101" (2021) Resources for the Future at 5.
[258] Ibid at 2.
[259] Ibid at 5.
[260] Ibid.
[261] Ibid at 2.
[262] Ibid at 5.
[263] Ibid at 2.
[264] Ibid at 3.
[265] Ibid.
[266] Michael Mehling et al, "Designing Border Carbon Adjustments for Enhanced Climate Action" (2019) 113:3 *Am J Intl L* 433 at 444.
[267] Ibid at 435.
[268] Erin Campbell, Anne McDarris, & William Pizer, "Border Carbon Adjustments 101" (2021) Resources for the Future at 7.
[269] Ibid.

for countries, which can be used for climate policy incentives, export rebates and climate change solutions.[270]

BCAs have not been fully implemented as policy,[271] but many countries including Canada, the EU and UK are launching or planning to launch BCAs. More countries are likely to follow as they respond to carbon leakage. One reason some countries are reluctant to support BCAs is because carbon leakage can create new jobs in countries without carbon border measures, which may be a bigger priority, especially among least developed countries ("LDCs").[272]

There are three scopes to consider when creating a BCA:[273] (1) emissions that are a by-product of goods and services production; (2) emissions from energy purchased;[274] and (3) emissions from purchased products.[275] What follows is a list of proposed principles for the implementation of BCAs. They are only proposals, and they are designed to illustrate concretely the sort of agreement that could be reached through multilateral international discussions. What is being proposed is not a negotiated, binding, consensus agreement among WTO members, but rather a set of guiding principles and considerations.

I. Principles of BCAs

BCAs should seek to prevent leakage.[276] However, while preserving competitiveness may be a result of implementing BCAs, it should not be the main objective. The main objective is the effective pricing of carbon emissions. Thus, the BCA should be designed with this goal rather than an aim to preserve or increase the competitiveness of domestic firms. A BCA designed for consistent and successful global emissions reductions will result in the prevention of leakage and preserve the competitiveness of domestic firms navigating carbon pricing.

BCA charges on foreign goods should be adjusted downward to account for any domestic measures that shield covered sectors from a full carbon price. Only the equivalent of the actual domestic carbon price should be levied against imports so that they are proportionate. BCAs should grant credit for carbon prices already borne by foreign goods in the country of export, which reduces the risk of leakage. There should also be meaningful and timely consultation on draft regulations with affected trading partners, and full transparency of the regime's implementation and operation. Moreover, BCAs should only cover goods that are subject to domestic carbon pricing.

If a default is used to determine the GHG intensity of foreign goods, foreign producers should be able to challenge that default and demonstrate that the carbon intensity of the good is lower than the default. BCA coverage should be extended to downstream sectors, but only if they

[270] Ibid.
[271] Ibid at 3.
[272] Timothy Meyer & Todd N. Tucker, "A Pragmatic Approach to Carbon Border Measure" (2021) 21:34 World Trade Review at 3.
[273] Erin Campbell, Anne McDarris, & William Pizer, "Border Carbon Adjustments 101" (2021) Resources for the Future at 4.
[274] Ibid.
[275] Ibid.
[276] Supra note 268.

face a risk of carbon leakage equivalent to the thresholds used to qualify upstream sectors for coverage. There should be no national exemptions from BCA coverage based on national policies. GHG intensity data should be required in terms of an internationally recognized accounting regime. There should be independent mechanisms to appeal any decisions or judgments taken under the BCA regime with respect to foreign producers of goods.[277]

There are different types of carbon taxes: production taxes and consumption taxes. A production tax focuses on the use of fossil fuels in production. A consumption tax is based on the emissions emitted when the goods were created (embedded emissions).[278] If only one country imposes a carbon tax based on one of these models, and other countries do not, goods that are taxed will be more costly and the businesses within that country may be at a disadvantage because consumers will shift their purchase patterns.[279]

The choice of which tax to adopt should depend on the welfare effects of each system. This means that the priority should be given to the taxation type that provides for the most benefits.[280]Leakage will result with all three approaches, and thus complete avoidance of leakage is not a valid welfare. Instead, a country could look at which of the three tax bases has the *least* leakage.[281]

Comparing production and consumption taxes, the consensus is that consumption taxes provide for less leakage because production taxes cause a shift in the location of production, whereas consumption taxes cause a shift in the location of consumption.[282] Comparing production and extraction taxes is less clear; if the supply of energy is inelastic, then an extraction tax may have less leakage than either production or consumption taxes, but if the supply of energy is elastic, an extraction tax may have more leakage.[283] It must first be considered who bears the burden of the tax when comparing extraction and consumption taxes .[284]

An argument often used for BCAs is that they will create an incentive for other countries to adopt a carbon tax.[285] The explanation for this is that with BCAs, other countries will not benefit from leakage. That is, BCAs take away the ability for a country to be a pollution haven, without collecting revenue from carbon pricing. Some argue that this is not overly compelling because most of the energy intensive production is for domestic purposes, and only a small portion of energy intensive production is exported. In practice, however, BCAs would apply in limited circumstances and do not create the necessary 'leverage' to induce other countries to adopt a carbon tax.[286]

[277] Cosbey, Aaron. "Principles and Best Practice in Border Carbon Adjustment: A modest proposal." *International Institute for Sustainable Development*. November 24, 2021.
[278] Sam Kortum & David Weisbach, "Border Adjustment: Basic Concepts and Design" (2016) 16:9 *SSRN* at 5.
[279] Ibid at 7.
[280] Ibid at 11.
[281] Ibid.
[282] Ibid at 12.
[283] Ibid at 15.
[284] Ibid at 13.
[285] Ibid at 15.
[286] Ibid at 16.

Identifying the ideal scope of application for the BCAs is an important consideration. Applying a BCA to all goods can present challenges because of being too broad but conducting separate calculations for each individual good is not as administratively feasible.[287]The scope of coverage could be narrowed to goods that have the largest carbon footprint, such as energy intensive, trade exposed (EITE) goods. Furthermore, it would be preferable to introduce a BCA where separate calculations are not required for all unique countries and their various production methods. The problem with not calculating in this way, however, is that each jurisdiction can lose sight of the actual emissions that it is taxing.[288]

Two factors are necessary to determine emissions that will trigger the BCA: the type of energy used and the production process. For the type of energy used, it is necessary to tax the marginal source of energy, or whatever additional emissions are generated by producing the export goods. For example, if hydroelectricity was used for the export and the production of the export leads to additional coal use, it should not matter that the producers can trace their energy use back to a hydroelectric plant. This is called artificial fuel switching. [289]

Once the type of energy is determined, it is important to establish the production process used to calculate the GHG emissions generated. Because similar goods can be produced using different production processes, the price for each good has to take into account particular production processes.[290] Four possible benchmarks may be helpful: the average emissions intensity of production of each product category in each exporting country; the average emissions intensity of production for each product category in the importing country; the emissions intensity of the best available technology for each product category; and the emissions intensity of the worst available technology for each product category. A country should adopt whatever benchmark is best suited to it. It is potentially better to choose a BCA that is set too high than too low so that it is more likely to achieve its objectives.[291]

II. Types of BCAs

There are three types of BCA measures: border taxes, as tariffs on imports and, less commonly, rebates on exports (as these are export subsidies); mandatory emissions allowance purchases by importers; and embedded carbon product standards. In all three, the objective is to extend a domestic carbon pricing scheme to traded goods.[292] This ensures that the countries that want to 'wait and see' or 'free ride' must either adopt a domestic environmental policy, become party to an international agreement, or pay the importing country. This is positive for progress on emissions-reductions but there is still a risk of carbon leakage because, as explained above, companies may lose their competitive edge.[293] Significant leakage reduction benefits can be

[287] Ibid at 19.
[288] Ibid at 19-20.
[289] Ibid at 23-25.
[290] Ibid at 28.
[291] Ibid at 29.
[292] Robert Howse, "Distinguished Essay: Non-Tariff Barriers and Climate Policy: Border-Adjusted Taxes and Regulatory Measures as WTO-Compliant Mitigation Strategies", (2015) 6:6 *European Yearbook of International Economic Law* at 5
[293] Ibid at 5-6.

obtained when a BCA is applied to major energy intensive and trade exposed sectors. Excluding certain products and sectors from a BCA can weaken its ability to counteract leakage. [294]

Trouble arises on using BCA rules on energy taxes once the energy required to produce a good has already been expended[295] making it questionable if energy taxes can benefit from BCAs.[296] Energy taxes are taxes placed on inputs rather than incorporated into the final products themselves. Thus, energy taxes cannot be imposed on imported products.[297] Finally, "energy taxes are excise taxes, which are a typical form of specific taxes."[298] This means energy taxes cannot be exempt or remitted for export.[299]

A BCA would focus on the processes and production methods used in developing a product in the exporting country by taxing the emissions in its production process. This can be misunderstood as a disguised protectionist tool because it can appear that the importing country only implemented this policy to protect their domestic products. This appearance can be avoided with adequate communication and transparency. BCAs should be communicated clearly to trading partners and adopted as transparently as possible.[300]

Overall, to gain international acceptance, the rationale for BCA measures should be clear, authentically aimed at emissions reductions, consistent, and persuasive. In conclusion, there are a few main points to be reiterated. The first is that existing tariffs have been set through extensive multilateral negotiations, so there is little room for unilaterally imposed measures without consideration of other jurisdictions. BCAs outcomes can benefit from such a multilateral approach. Second is that countries must show that the BCA is for an environmental purpose, and it must avoid becoming a protectionist instrument. Third, arguments in favour of implementing a BCA need to explain how and why the measure would be fair from to the international trade network. Fourth, the likely best way to introduce a BCA is to negotiate a multilateral agreement on their implementation.[301] Lastly, BCAs should ideally be accounted for within WTO trade rules so that they are treated as legitimate national tax measures applicable both domestically and to imports.[302]

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[294] Michael Mehling et al, "Designing Border Carbon Adjustments for Enhanced Climate Action" (2019) 113:3 *Am J Intl L* 433 at 446.
[295] Pitschas, Christian. "GATT/WTO Rules for Border Tax Adjustment and the Proposed European Directive Introducing a Tax on Carbon Dioxide Emissions and Energy". *The Georgia Journal of International and Comparative Law* 24, no.3 (1995): 479-500 at 490.
[296] Ibid at 491.
[297] Ibid.
[298] Ibid at 494.
[299] Ibid.
[300] Michael Mehling et al, "Designing Border Carbon Adjustments for Enhanced Climate Action" (2019) 113:3 *Am J Intl L* 433 at 442.
[301] Henrik Horn & André Sapir, "Can Border Carbon Taxes Fit into the Global Trade Regime?" (2013) 6 *Bruegel Policy Brief* at 8.
[302] Hillman, Jennifer A. "Changing climate for carbon taxes: who's afraid of the WTO?." (2013).

6. WTO, Environment, and Carbon Pricing

International trade law is experiencing a significant shift in priorities that includes many issues once deemed to be non-traditional trade issues, such as environmental concerns. This has led to the trade-plus (or trade and…) agenda, which highlights such issues, Trade-plus agendas are becoming increasingly a priority at the WTO and in trade agreements between countries.[303] There are also other ways to integrate environmental policies into international trade. These include: improving the ratio of climate change action to trade and regime conflicts, re-assessing the concept of 'like' products under GATT Articles I and III by re-assessing the role of carbon in trade,[304] coordinating climate action through climate clubs and coalitions, negotiating a framework for emissions trading, using carbon taxation and border measures, using existing tools such as subsidies and standards, and greening government procurement and intellectual property and other sector-specific trade dimensions.[305]

The WTO has been criticized for being reluctant to respond to climate change. Part of the reason for this is that the GATT, the framing agreement of the multilateral trading system was created before climate change was understood and before environmental law was as developed as it is today. Thus WTO law and environmental law have non-aligned goals, purposes, and rationales, and they must now be actively combined and integrated in order to create successful, global climate change mitigation policies.[306] The preamble of many WTO Agreements can be a useful guideline in that direction. For example, trade liberalization that encourages lowering cost production needs to be mindful of sustainable development. In reality, National Treatment and MFN provisions in GATT encourage economic growth and promote cultural shifts, which often clash with environmental policies to reduce GHGs and sustainable development.[307] Efforts must be made to increase the 'congruence' between environmental policy and international trade rules, as both have important impacts in law and society.[308]

A. GATT-Compatibility of BCAs

The GATT sets out the rules for trade of goods. All domestic measures that affect goods and interact with trade must comply with the GATT.[309] BCAs are an example of domestic measures that must comply with the GATT. Compliance with the GATT and other WTO Agreements is fundamental to the success of the WTO and the WTO legal system. Without all countries abiding by the same fundamental rules of trade, trade liberalization could be replaced

[303] See for example Canada's Inclusive Approach to trade <https://www.international.gc.ca/gac-amc/campaign-campagne/inclusive_trade/index.aspx?lang=eng>
[304] General Agreement on Tariffs and Trade 1994, Arts. I, III, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1867 UNTS 187.
[305] See for example ICAO's Carbon Offset Calculator https://www.icao.int/environmental-protection/Carbonoffset/Pages/default.aspx
[306] John H Jackson, "World trade rules and environmental policies: Congruence or conflict" (1992) *Wash. & Lee L Rev* 49 1227 at 1254-1255.
[307] Ibid at 1230-1235.
[308] Ibid at 1256.
[309] Peter Van Den Bossche & Werner Zdouc, *The Law and Policy of the World Trade Organization: text, cases and materials,* 4th ed (Cambridge: Cambridge University Press, 2019) at 45.

with protectionist and discriminatory trade measures.[310] When considering BCAs, there is a risk that they are implemented in a way that violates WTO law. That being said, carbon tariff-like measures are "not categorically prohibited under existing WTO law."[311] There are four sections within the GATT that must be given careful consideration. These are: the MFN principle under Article I:1 of the GATT, the National Treatment principle in Article III, the general exceptions outlined in Article XX, and Article XXIV on Regional Trade Agreements (RTAs).[312] Unilateral implementation of BCAs may comply with WTO law. There needs to be careful consideration of the GATT and other WTO Agreements when designing and implementing a tariff related to carbon.[313]

I. Article I: Most Favoured Nation (MFN)

Any product destined for another country than the one that it initially was produced in needs to be immediately and unconditionally accorded same treatment as all other WTO country-originating products. This is the idea of the MFN principle, which is a fundamental pillar of trade law. It is also the first of the two basic rules against discrimination in trade law.[314] The MFN principle requires that all WTO members treat like products equally, regardless of their country of origin.[315] This will be done with respect to custom, duties, charges of importing and exporting in that country along with other factors, such as methods of levying, and the rules and formalities in connection with importation and exportation. Additionally, attention needs to be paid to paragraphs 2 and 4 of Article III.[316]

There is a four-tiered test that is used to determine whether a measure is consistent with the MNF principle. First, that the measure at issue falls within the scope of application of Article I:1. Second, that the imported products at issue are like products within the meaning of Article I:1. Third that the measure at issue confers an "advantage, favour, privilege, or immunity" on a product originating in the territory of any country. Finally, that the advantage so accorded is extended 'immediately' and 'unconditionally' to like products originating in the territory of all Members.[317]All measures which are internal measures or border measures are covered by Article I:1. BCAs are examples of such measures.[318]

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[310] Ibid at 19.
[311] Veel, Paul-Erik. "Carbon Tariffs and the WTO: An Evaluation of Feasible Policies". *Journal of International Economic Law* 12, no. 3 (September 9th, 2009): 749-800 at 778.
[312] Ibid at 778.
[313] Ibid at 800.
[314] Appellate Body Reports, *European Communities – Measures Prohibiting the Importation and Marketing of Seal Products*, WT/DS400/AB/R / WT/DS401/AB/R, adopted 18 June 2014, DSR 2014:I, p. 120.
[315] Peter Van Den Bossche & Werner Zdouc, *The Law and Policy of the World Trade Organization: text, cases and materials,* 4th ed (Cambridge: Cambridge University Press, 2019) at 39.
[316] *GATT 1994:General Agreement on Tariffs and Trade 1994*, 15 April 1994, 1867 U.N.T.S. 187, 33 I.L.M art I:1 (entered into force 1 January 1995).
[317] Appellate Body Reports, *European Communities – Measures Prohibiting the Importation and Marketing of Seal Products*, WT/DS400/AB/R / WT/DS401/AB/R, adopted 18 June 2014, DSR 2014:I, p. 120.
[318] Peter Van Den Bossche & Werner Zdouc, *The Law and Policy of the World Trade Organization: text, cases and materials,* 4th ed (Cambridge: Cambridge University Press, 2019) at 312.

Under the first principle the MFN only applies to 'like products.' If products that are not like are treated differently, that will in theory not violate Article I:1.[319] Determining whether two products are like within the meaning of Article I:1 can be difficult. The Panel and WTO AB have adopted a holistic approach by looking at the physical characteristics of the products, their end use, consumers tastes and habits, the tariff regimes of other WTO Members, the nature and extent of the competitive relationship between products and any other criteria the Panel and AB find relevant.[320] This is done on a case-by-case basis.[321]

Under the second principle, the MFN principle applies to both discrimination in law and discrimination in fact. In other words, measures that are set out in law that certain countries will be treated more or less favourably are discriminating in law. Measures that appear to award no more or less favourable treatment to like products based on the country of origin, but the effect of the measure is that countries are treated differently, constitutes discrimination in fact.[322]

Under the third principle, MFN requires that the measure grants an advantage, favour, privilege, or immunity by any Member has been interpreted broadly. An advantage, favour, privilege, or immunity is one where a measure creates more favourable competitive opportunities or affects the commercial relationship between products of different origins.[323] It includes any advantage granted to any product originating in or destined to all other Members of the WTO.[324]

Finally, any advantage granted by a measure must be granted immediately and unconditionally to all like products from all other Members.[325] In effect, if there are no actual trade effects or if there is no intended discrimination of like products based on the country of origin, then a measure will not constitute a violation of the MFN obligation.[326] On the other hand, the goal of MFN is to provide equality of opportunity for like products. As such, a country would not have to prove that a measure actually affects trade; a measure that creates more favourable opportunities is enough to trigger an inconsistency with the MFN principle.[327]

In order to implement a BCA without violating the MFN principle, a country would have to be careful to ensure that the design does not constitute a violation. Also it must be ensured that the BCA's effect is not to create more favourable competitive opportunities for countries over one another. If the BCA applies uniformly to all like products, regardless of the country of origin and country-specific features, it is likely to meet the MFN requirement.[328] It is important to note that

[319] Ibid at 316.
[320] Appellate Body Report, Japan – Taxes on Alcoholic Beverages, WT/DS8/AB/R, WT/DS10/AB/R, WT/DS11/AB/R, adopted 1 November 1996, DSR 1996:I, p. 97.
[321] Peter Van Den Bossche & Werner Zdouc, *The Law and Policy of the World Trade Organization: text, cases and materials,* 4th ed (Cambridge: Cambridge University Press, 2019) at 317-318.
[322] Ibid at 309.
[323] Appellate Body Reports, *European Communities – Measures Prohibiting the Importation and Marketing of Seal Products*, WT/DS400/AB/R / WT/DS401/AB/R, adopted 18 June 2014, DSR 2014:I, p. 120.
[324] Peter Van Den Bossche & Werner Zdouc, *The Law and Policy of the World Trade Organization: text, cases and materials,* 4th ed (Cambridge: Cambridge University Press, 2019) at 315.
[325] Ibid at 319-320.
[326] Ibid at 316.
[327] Ibid at 321.
[328] Michael Mehling et al, "Designing Border Carbon Adjustments for Enhanced Climate Action" (2019) 113:3 *Am J Intl L* 433 at 459-460.

electricity is within the scope of Article I:1 and electricity producers enjoy the privilege of MFN and the protection it provides.[329]

II. Article II: Schedules of Concessions

Article II of the GATT prohibits countries from imposing custom duties in excess of those set out in their respective tariff schedules. This is only applicable if BCAs are determined to be custom duties, or any other charge imposed in connection with importation. If a BCA is determined to be an internal tax or internal charge, then Article III would apply.[330] Articles II and III both allow countries to impose taxes on imports under certain circumstances and it is therefore possible that a BCA could be subject to both Article II and Article III.[331] However even if that is true, the only discipline applicable to an internal tax appears to be that of Article III:2.[332]

III. Article III - National Treatment

The National Treatment obligation found in Article III of the GATT is the second of the two fundamental rules against discrimination. It requires that countries treat foreign products, services, and service suppliers the same as like domestic products, services, and service suppliers.[333] The National Treatment obligation not only protects countries against measures which are found to treat like foreign and domestic products unequally, but it also protects importing countries expectations that their product will be treated the same as domestic products.[334]

The National Treatment obligation, like the MFN principle, applies to measures which are discriminatory in law and discriminatory in fact.[335]

Article III:1

Article III:1 is a general principle on the National Treatment obligation that informs the rest of Article III.[336] The contracting parties recognize that internal taxes and other internal charges, and laws, regulations and requirements affecting the internal sale, should not be applied to imported or domestic products so as to afford protection to domestic production.[337]

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[329] Thomas Cottier, Renewable Energy and Process and Production Methods. E15Initiative. Geneva: International Centre for Trade and Sustainable Development (ICTSD) and World Economic Forum, 2015. www.e15initiative.org/ at 2.
[330] Jennifer A Hillman, "Changing Climate for Carbon Taxes: Who's Afraid of the WTO?" (2013) Climate & Energy Policy Paper Series at 5.
[331] Ibid at 5.
[332] Trachtman, Joel P. "WTO Law Constraints on Border Tax Adjustment and Tax Credit Mechanisms to Reduce the Competitive Effects of Carbon Taxes." *SSRN Electronic Journal*, (2016): 1-42 at 4.
[333] Peter Van Den Bossche & Werner Zdouc, *The Law and Policy of the World Trade Organization: text, cases and materials,* 4th ed (Cambridge: Cambridge University Press, 2019) at 39.
[334] Ibid at 344-345.
[335] Ibid at 345.
[336] Ibid at 350.
[337] *GATT 1994:General Agreement on Tariffs and Trade 1994*, 15 April 1994, 1867 U.N.T.S. 187, 33 I.L.M art III:1 (entered into force 1 January 1995).

Article III:2

Articles III:2 and III:4 specifically refer to National Treatment with respect to internal taxation and internal regulation of domestic products and imports.[338] It requires that all imports be treated no less favourably than domestic products in the application of internal taxes or charges. Article III:2 consists of two sentences, each with its own test that must be satisfied in order to prove that a measure is inconsistent.[339]

The products of any contracting party imported into another contracting party shall not be subject, directly or indirectly, to internal taxes in excess of those applied, directly or indirectly, to like domestic products. Moreover, no contracting party shall otherwise apply internal taxes or other internal charges to imported or domestic products in a manner contrary to the principles set forth in paragraph 1.[340]

WTO panels and the AB have established a three-tiered test for the first sentence of Article III:2. The first part of this test is whether the measure is an internal tax or other internal charge on products. The second part is whether the imported and domestic products are alike. Finally, the third part is whether the imported products are taxed in excess of the domestic products.[341]

Internal taxes and charges refer to value added taxes, such as sales tax and excise duties. These are taxes or charges on products and as a result, income tax and other taxes that are not on the products themselves, are not included. Article III:2 only applies to protect products that have entered the domestic market after clearing customs. It does not protect products facing border measures. However, any taxes or internal charges that apply to domestic products and the like imported product are considered internal taxes, not border taxes.[342] As such, Article III would apply.[343] Finally, both direct and indirect taxes must be equal for like domestic and foreign products, services, and service providers. That means that the taxes on raw materials and other materials used in the production process are included in these calculations.[344]

Determining whether two products are like requires a careful examination of theproducts. Like products are to be construed narrowly. The determination of likeness is about the determination of the nature and extent of a competitive relationship between and among products. There are numerous tools available to help the Panel and AB make this determination.[345] Some tools include, the products' properties, nature and quality, the products' end uses, consumer tastes and habits and any other criteria found to be relevant.

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[338] Peter Van Den Bossche & Werner Zdouc, *The Law and Policy of the World Trade Organization: text, cases and materials,* 4th ed (Cambridge: Cambridge University Press, 2019) at 350.
[339] Ibid at 351.
[340] *GATT 1994:General Agreement on Tariffs and Trade 1994*, 15 April 1994, 1867 U.N.T.S. 187, 33 I.L.M art III:2 (entered into force 1 January 1995).
[341] Peter Van Den Bossche & Werner Zdouc, *The Law and Policy of the World Trade Organization: text, cases and materials,* 4th ed (Cambridge: Cambridge University Press, 2019) at 351.
[342] Ibid at 352.
[343] Ibid at 346.
[344] Ibid at 353.
[345] Appellate Body Reports, Philippines – Taxes on Distilled Spirits, WT/DS396/AB/R / WT/DS403/AB/R, adopted 20 January 2012, DSR 2012:VIII, p. 4163, para 170.

The third element is a strict requirement. Any amount that a foreign product is taxed compared to a like domestic product is too much and contrary to Article III:2. This step would be one of the most important steps in the analysis to determine whether a BCA is compliant with Article III:2.

The second sentence of Article III:2 imposes a four-tiered test that was set out by the AB. First, whether the measure is an internal tax or other internal charge on products; second, whether the imported and domestic products are directly competitive or substitutable; third, whether the imported and domestic products are dissimilarly taxed; and fourth, whether the dissimilar taxation is applied so as to afford protection to domestic production[346].

The first element is the same as the first element of the test for sentence one. The second element does not require that products are perfectly substitutable; rather, they can be alternative ways to satisfy a particular need or taste.[347] The third element says that if imported products and directly competitive or substitutable domestic products are similarly taxed, then the measure is compliant with Article III:2. The requirement that imported products and directly competitive or substitutable domestic products are similarly taxed is not as strict as the third element of the test under sentence one. As such, some amount of taxation on imports in excess of that for directly competitive or substitutable domestic products may still be found to be similarly taxed and consistent with Article III:2. The fourth element is often conflated with the third, but the question of whether the measure is applied so as to afford protection is distinct from the question of whether the products were similarly taxed[348]. The fourth element requires an objective assessment of the design, structure, and overall application of the measure on domestic products as compared to imported products.[349] It is important to note that the intentions of the legislature do not matter. The determination of this element is based on an objective assessment of how the measure is applied. In fact, the AB rejected arguments relating to the trade effect of the measure in question and emphasized that it is the application of the measure which must be examined.

Regarding Article III:2, the case that merits the closest attention is *Japan – Alcoholic Beverages II*. It is widely believed that the AB rejected the aims and effects test. *Japan – Alcoholic Beverages II* involved internal taxation and claims under Article III:2. The structure of Article III:2 is different from that of Article III:4. Article III:2 contains two different standards of National Treatment. Under the first sentence, imports must be taxed identically to like products. Under the second sentence, which is read in conjunction with Article III, imports must not be taxed dissimilarly from directly competitive and substitutable domestic products to afford protection to domestic production. The final element of this test is grounded in the fact that Article III:2, second sentence, contains a specific reference to Article III:1, in which the general anti-protectionist rationale underlying the National Treatment obligation of Article III is announced. The first

[346] Appellate Body Report, Japan – Taxes on Alcoholic Beverages, WT/DS8/AB/R, WT/DS10/AB/R, WT/DS11/AB/R, adopted 1 November 1996, DSR 1996:I, p. 97 para 24.
[347] Peter Van Den Bossche & Werner Zdouc, *The Law and Policy of the World Trade Organization: text, cases and materials,* 4th ed (Cambridge: Cambridge University Press, 2019) at 368.
[348] Ibid at 374.
[349] Ibid 374.

sentence of Article III:2 contains no such specific reference back to Article III:1. These differences are significant.[350]

Neither the requirement to tax like products the same nor similar taxation of directly competitive and substitutable products prevents a WTO member from imposing a tax at the border that accounts for the carbon emissions created during the production of the imported product. However, these factors do have important implications for the design of a BCA.[351]

Article III:4

The products of the territory of any contracting party imported into the territory of any other contracting party shall be accorded treatment no less favourable than that accorded to like products of national origin in respect of all laws, regulations and requirements affecting their internal sale, offering for sale, purchase, transportation, distribution, or use. The provisions of this paragraph shall not prevent the application of differential internal transportation charges which are based exclusively on the economic operation of the means of transport and not on the nationality of the product.[352]

Article III:4 deals with internal regulation and the National Treatment obligation and requires that imports be treated no less favourably by laws and regulations in their internal sale, use and distribution than like domestic products. There is a three-tiered test used to determine whether a measure violates Article III:4. First, whether the measure at issue is a law, regulation or requirement covered by Article III:4; second, whether the imported and domestic products are like products; and third, whether the imported products are accorded less favourable treatment.

Whether the measure is a law, regulation or requirement has been interpreted broadly to include all measures that may modify the conditions of competition in the market, not just one that directly governs the conditions of sale or purchase of domestic and imported products in the internal market.[353] It follows that both substantive and procedural laws are included within Article III:4. Both types of law can affect the internal sale of domestic and imported products. Article III:4 is only concerned with discrimination between products that are like, but the analysis for determining whether two products are like changes in Article III:4. Likeness requires a quantitative and qualitative assessment of the nature and extent of the competitive relationship between products. Some of the criteria used to determine likeness are the nature, character and quality of the products, the end uses and consumer preferences. The third question of whether imported

[350] Robert House & Donald Regan, "The Product/Process Distinction – An Illusory Basis for Disciplinary 'Unilateralism' in Trade Policy" (2000) 11:2 EJIL at 264.
[351] Robert Howse, "Distinguished Essay: Non-Tariff Barriers and Climate Policy: Border-Adjusted Taxes and Regulatory Measures as WTO-Compliant Mitigation Strategies", (2015) 6:6 *European Yearbook of International Economic Law* at 9.
[352] Article III:4 GATT.
[353] Peter Van Den Bossche & Werner Zdouc, *The Law and Policy of the World Trade Organization: text, cases and materials,* 4th ed (Cambridge: Cambridge University Press, 2019) at 378.

products are accorded less favourable treatment has been interpreted in the case law to require effective equality of opportunities.[354]

The above sections on GATT Articles I:1, II, III:2 and III:4 are provisions that measures relating to trade must always abide by and they set out what constitutes a violation. Any country claiming that another country has enacted a measure that violates any of these provisions has the burden of proving that. It is on the country making the claim that must bring the evidence and meet the tests or relevant criteria in order to prove that another country has enacted a measure that violates one of the GATT provisions above. The same cannot be said about Article XX, which follows.

IV. Article XX - General Exceptions

Article XX establishes a list of general exceptions that can be used to justify a measure if it has been found to violate GATT. If a country can prove that a violation has occurred, the importing country may be able to justify the violation if it falls within one of the exceptions and satisfies all Article XX requirements.[355] Article XX is a provision that balances the goals of trade liberalization and non-discrimination against societal values and interests. As such, Article XX is not to be construed so narrowly that it effectively prevents the values and interests it embodies from gaining protection or so broadly that the purposes of other GATT provisions are undermined.[356]

There are ten general exceptions outlined in Article XX. The scope of some of the exceptions has expanded over time.[357] The burden of proving that a GATT inconsistent measure is justified under one of the exceptions falls to the country trying to benefit from the exception.[358] These exceptions have been successfully argued in recent case law to justify measures that would not have been justified in the past.[359] The most relevant sections for BCAs or other environmental or climate related measures are subsections (b) and (g):

> Subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade, nothing in this Agreement shall be construed to prevent the adoption or enforcement by any contracting party of measures:
>
> (b) necessary to protect human, animal or plant life or health;
>
> [...]
>
> (g) relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or

[354] Peter Van Den Bossche & Werner Zdouc, *The Law and Policy of the World Trade Organization: text, cases and materials,* 4th ed (Cambridge: Cambridge University Press, 2019) at 390. US - Section 337 of the Tariff Act of 1930 Report by the Panel adopted on 7 November 1989 (L/6439 - 36S/345) para 5.11.
[355] Ibid at 548-549.
[356] Ibid at 548.
[357] Ibid at 548.
[358] Ibid at 256-259.
[359] Low, Marceau, Reinaud, supra note 590, at 21.

consumption.[360]

Notably, however, Article XX(b) is arguably stricter exception of the two.[361]

Article XX establishes a two-tiered test to determine whether a GATT incompliant measure can be justified. First, the measure must be justified under one of the subparagraphs of Article XX. This requires that the measure meets all the requirements of that particular exception. Second, the measure must meet the criteria set out in the opening paragraph of Article XX.[362] In effect, the first step of the test involves an analysis of the measure itself. The second step involves an analysis of the manner in which the measure is applied.[363]

The AB clarified that the different terms used regarding the nature of the relationship of the measure and the interests the exceptions seek to protect are important. They indicate the specific degree of connection or relationship that is required between the measure and the interest. As such, in order for a measure to be justified, it must meet the requirements as to the degree of connection that is specified in that particular exception.[364] While exceptions under Article XX may be used by states to justify climate measures, Members must do so only to justify legitimate eco-friendly policies regarding trade.[365]

Article XX(b): Measures Necessary to Protect Human, Animal or Plant Life or Health

There is a two-tiered test under Article XX(b) that a *prima facie* GATT inconsistent measure must meet for it to be provisionally justified under the exception. The first requirement is that the measure is *designed* to protect human, animal, or plant, life, or health. The second requirement is that the measure is *necessary* to protect human, animal, of plant, life, or health.[366]

The first element has a low threshold for the respondent to meet. Generally, WTO panels and the AB accept that a measure is designed for the interest that it is intended to protect.[367] They have examined the design and structure of the challenged measure and any legislation relating to it. This will allow them to establish the policy objective that is pursued by the measure.[368] The

[360] *GATT 1994:General Agreement on Tariffs and Trade 1994*, 15 April 1994, 1867 U.N.T.S. 187, 33 I.L.M art XX (entered into force 1 January 1995) at XX.
[361] Michael Mehling et al, "Designing Border Carbon Adjustments for Enhanced Climate Action" (2019) 113:3 *Am J Intl L* 433 at 464.
[362] Appellate Body Report, United States – Standards for Reformulated and Conventional Gasoline, WT/DS2/AB/R, adopted 20 May 1996, DSR 1996:I, p. 3.
[363] Peter Van Den Bossche & Werner Zdouc, *The Law and Policy of the World Trade Organization: text, cases and materials,* 4th ed (Cambridge: Cambridge University Press, 2019) at 555.
[364] Appellate Body Report, United States – Standards for Reformulated and Conventional Gasoline, WT/DS2/AB/R, adopted 20 May 1996, DSR 1996:I, p. 3 at paras 17-18.
[365] John H Jackson, "World trade rules and environmental policies: Congruence or conflict" (1992) *Wash. & Lee L Rev* 49 1227 at 1241-1243.
[366] Peter Van Den Bossche & Werner Zdouc, *The Law and Policy of the World Trade Organization: text, cases and materials,* 4th ed (Cambridge: Cambridge University Press, 2019) at 557.
[367] Ibid.
[368] Ibid.

policy objective cannot be an afterthought for the purposes of the dispute; it must be the objective and reason behind the measure's existence.[369]

The AB in *EC—Asbestos* clarified the second element. It requires a holistic examination as well as a weighing and balancing of factors to determine whether the measure is necessary.[370] The Panel must look at the interests at stake, how trade restrictive the measure is, and how much the measure contributes to achieving its objectives. In *Brazil—Retreaded Tyres*, the AB held that a measure contributes to achieving the objective pursued "when there is a genuine relationship of ends and means between the objective pursued and the measure at issue".[371] If a measure is considered necessary, a panel will look at possible alternatives to the measure. In considering alternatives that are reasonably available, a panel will consider the difficulty of implementing the alternative measures, the degree to which the alternative measure achieves or contributes to the challenged measure's objective and a comparison of any other relevant factors.[372] The burden is not on the respondent to show that there are no reasonably available alternatives. Rather the onus is on the complainant to identify possible alternatives.[373] If the measure meets the requirements of Article XX(b), a panel will then determine whether it meets the requirements of the chapeau.

Article XX(g): Measures Relating to the Conservation of Exhaustible Natural Resources

The Article XX(g) exception has a three-tiered legal test that a measure must meet to be justified. The requirements are that the measure first, relates to the *conservation of exhaustible natural resources*, second, *relates to* the conservation of exhaustible natural resources, and third, be *made effective in conjunction with* restrictions on domestic production or consumption.[374]

The meaning and scope of the first element has broadened to include more than just the preservation of the environment and natural resources. International principles of sustainable development and sovereignty over natural resources are also included. The AB in *US – Shrimp* emphasized that the words 'exhaustible natural resources' were chosen over five decades ago. Treaty interpretation recognizes that words and their meaning are not static, and they must be read with contemporary understanding. As such, the AB held that international agreements that specifically relate to the environment and the preamble of the *WTO Agreement*, which explicitly states the objective of sustainable development, support the notion that the first element is not merely about the preservation of natural resources.[375] The second element requires that there is a close and real relationship between the measure and the objective pursued. To assess whether there is a relationship, the focus should be on the design and the structure of the measure and not on the

[369] Peter Van Den Bossche & Werner Zdouc, *The Law and Policy of the World Trade Organization: text, cases and materials,* 4th ed (Cambridge: Cambridge University Press, 2019) at 558.
[370] Appellate Body Report, *European Communities – Measures Affecting Asbestos and Asbestos-Containing Products*, WT/DS135/AB/R, adopted 5 April 2001, DSR 2001:VII, p. 62-63.
[371] Appellate Body Report, *Brazil – Measures Affecting Imports of Retreaded Tyres*, WT/DS332/AB/R, adopted 17 December 2007, DSR 2007:IV, p. 57.
[372] Appellate Body Report, *European Communities – Measures Affecting Asbestos and Asbestos-Containing Products*, WT/DS135/AB/R, adopted 5 April 2001, DSR 2001:VII, p. 62-63.
[373] Peter Van Den Bossche & Werner Zdouc, *The Law and Policy of the World Trade Organization: text, cases and materials,* 4th ed (Cambridge: Cambridge University Press, 2019) at 563-564.
[374] Ibid at 573-574.
[375] Ibid at 574.

effect, although it can also be considered.[376] The third element requires that the measure imposes restrictions on domestic products and not just imported products. This has been described as a requirement of 'even handedness'.[377] Although it is not required that domestic and foreign products are treated equally, the AB stated that a measure that imposes significantly more restrictions on foreign products than domestic products would not likely meet all the requirements of Article XX(g). This is because the evidentiary threshold will likely not be met.[378]

The Chapeau

The chapeau of Article XX refers to the introductory paragraph before the exceptions are listed. It applies to all exceptions, and it imposes limits on the use and availability of the exceptions to justify a GATT incompliant measure. The chapeau seeks to ensure that the Article XX exceptions are applied reasonably and are not used to frustrate the legal rights of other Members.[379] At the heart of the chapeau is the manner in which the measure is applied. This can prevent misuse and abuse of the exceptions that provisionally justify a measure. There is a balancing between the legal rights of Member states and the legal duties of the Member claiming the exception.[380] The manner in which a Member applies a measure that is inconsistent with a GATT provision but is provisionally justified as a legitimate social interest under the exceptions, must not be in a way that "constitutes a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade".[381]

The restrictions of arbitrary and unjustified discrimination and disguised restrictions all seek to prevent Members from using the Article XX exceptions for reasons beyond the recognized legitimate purposes. The AB stated that 'arbitrary discrimination', 'unjustified discrimination' and 'disguised restriction' should be read together because they give meaning to each other. However, there are some differences between these terms, based on the case law. In one of the more recent disputes, the Panel reiterated the current case law on arbitrary and unjustified discrimination, "when a Member seeks to justify the discrimination resulting from the application of its measure by a rationale that bears no relationship to the accomplishment of the objective that falls with the purview of one of the paragraphs of Article XX, or goes against that objective".[382] This involves analysing the cause or rationale of the discrimination in relation to the objective of the measure. The Panel in *EC – Asbestos* clarified that a measure is disguised if it is "conceal[ed] beneath deceptive appearances, counterfeit, alter[ed] so as to deceive, misrepresent".[383] In this light, a measure that is disguised to conceal the pursuit of trade-restrictive objectives is not compatible with the Article XX exceptions and would not meet the requirements under the chapeau.

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[376] Ibid at 576.
[377] Ibid at 577.
[378] Ibid at 578.
[379] Ibid at 590.
[380] Ibid at 590.
[381] *GATT 1994:General Agreement on Tariffs and Trade 1994*, 15 April 1994, 1867 U.N.T.S. 187, 33 I.L.M art XX (entered into force 1 January 1995) at XX.
[382] Panel Report, *Colombia – Measures Relating to the Importation of Textiles, Apparel and Footwear*, WT/DS461/R and Add.1, adopted 22 June 2016, as modified by Appellate Body Report WT/DS461/AB/R, DSR 2016:III, p. 119.
[383] Peter Van Den Bossche & Werner Zdouc, *The Law and Policy of the World Trade Organization: text, cases and materials,* 4th ed (Cambridge: Cambridge University Press, 2019) at 604.

Additionally, the analysis under the chapeau is very fact specific; the same elements may not be determinative.[384]

Generally, BCA schemes that recognize equivalent emissions control measures in the exporting country will likely be compatible with the conditions of the chapeau of XX.[385] With this in mind, it is clear there is no general obstacle to a WTO member taking unilateral action and implementing a BCA where the exporting member state has fallen short.[386]

V. Article XXIV: Territorial Application

Article XXIV "Territorial Application - Frontier Traffic - Customs Unions and Free-trade Areas" of the GATT considers regional exceptions under the WTO agreement for RTAs as well as Free Trade Agreements (FTAs) and Preferential Trade Agreements (PTAs). Paragraph 1 outlines that state parties cannot establish any of the previously mentioned forms of agreements for the purposes of creating a "carbon club" concerning specific products. For instance, an FTA, RTA, or PTA cannot be drafted and implemented for the sole purposes of addressing carbon within the steel industry specifically. This violates WTO law. Any type of agreement that creates a free trade area needs to extend to nearly all trade between two or more countries and cannot be limited to single (or few) product coverage. However, a potential solution for countries such as Canada that parties to many agreements can add interpretative notes, Annexes, or more that adds to existing agreements already in place. For instance, Canada and the European Union may amend the Comprehensive Economic and Trade Agreement to incorporate an additional Annex that focuses on carbon reduction and the environment.

B. Subsidies and BCAs

It is critical to explore the discipline of subsidies, given the nature of carbon pricing and potential exceptions for businesses. If any advantages are given to domestic industries that happen to be actionable, or worse, prohibited subsidies under the WTO, then this might derail efforts for a nation-wide carbon pricing regime. Avoiding any hints of subsidization will ensure the measures, even if challenged, do not trigger any responses from Canada's trading partners, such as countervailing duties or anti-dumping investigations).

Carbon taxes, cap and trade schemes, prohibition on consumables and devices that consume too much, and consumption/production mandates are unlikely to fall within the definition in the SCM Agreement[387] as they are not themselves designed as a financial contribution.[388] However, the energy sector is a major area of government intervention. Two thirds of global GHG emissions are generated by the energy sector with the main source being fossil fuels. Fossil fuels

[384] Ibid at 599.
[385] Robert Howse, "Distinguished Essay: Non-Tariff Barriers and Climate Policy: Border-Adjusted Taxes and Regulatory Measures as WTO-Compliant Mitigation Strategies", (2015) 6:6 *European Yearbook of International Economic Law* at 16-17.
[386] Ibid at 16.
[387] Agreement on Subsidies and Countervailing Measures, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1869 U.N.T.S. 14.
[388] Espa and Rolland, supra note 502, at 7.

account for 80% of global energy consumption.[389] Nearly all fossil fuel subsidies generate environmental externalities by stimulating excessive production and consumption of fossil fuels. Fossil fuel subsidies have an adverse effect on the environment by discouraging energy-efficient improvements, increasing GHG emissions and creating barriers to clean energy investments. Some subsidies directly impact the price of fossil fuels for the benefit of the producer; most subsidies stimulate excessive production or consumption. This creates market distortion as they always cause harm to the global commons. This cost externalisation can be seen as a market failure when governments do not require producers to internalise the environmental cost of their emissions.[390] The relationship between energy subsidies and climate change can be evaluated in the following ways: 1) The subsidy is seen as addressing a market distortion and 2) The subsidy is seen as creating a distortion.[391]

Government practices lower the price paid by energy consumers (consumer subsidies) or lower the cost of production (production subsidies). The most typical subsidies include: tax expenditures (excise taxes, carbon taxes, eco-tax concessions); dual pricing policies (price controls, sales of energy inputs by state trading enterprises, export taxes); favourable credit terms (concessional loans and guarantees); and R&D grants.[392] The definition of subsidy under the existing Agreement on Subsidies and Countervailing Measures ("SCM Agreement") adopted by the WTO is considerably narrower than the dictionary meaning of the term.[393] Therefore it is important to assess whether particular subsidization practices are covered by the existing SCM Agreement discipline.

This section will focus on outlining all relevant parameters of subsidies regulation under the WTO. A discussion on fossil fuel subsidies is also included. The SCM Agreement contains rules that may constrain the design of both the domestic carbon pricing roll-out process and BCAs. Specifically, applying a BCA to exports may qualify as a prohibited export subsidy under the SCM.[394] Grandfathering, emissions rights or exemptions might also be actionable.

I. Subsidies Rules

Under the WTO, there are rules on anti-dumping actions, subsidies, countervailing measures, and safeguards. Article VI of the GATT 1994 governs dumping of goods into importing countries at below-market prices. Member states whose industries are injured by this practice are permitted to adopt anti-dumping measures for the protection of their own industry. However, there are limitations: the measures have a sunset clause; they must be preceded by a thorough investigation; and they cannot be imposed for insignificantly small dumping margins. The injured country can show that dumping is happening by calculating a product's "normal value."[395]

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[389] Ibid at 1.
[390] Ibid at 2.
[391] Ibid.
[392] Ibid at 3.
[393] Verkuijl, supra note 506, at 319.
[394] Michael Mehling et al, "Designing Border Carbon Adjustments for Enhanced Climate Action" (2019) 113:3 *Am J Intl L* 433 at 470-471.
[395] WTO, "Anti-dumping, subsidies, safeguards: contingencies, etc." online: *WTO* <www.wto.org>.

Article XVI of the GATT 1994 consists of two sections. Section A stipulates a duty for countries to notify other members of subsidies that increase their exports or reduce their imports.[396] Section B prohibits subsidies that are contingent on the export of products. These subsidies have harmful effects as they distort trade by leading to lowered prices in the importing country compared to the exporting country.[397] Under Article III of the GATT 1994, the National Treatment obligation prohibits discrimination between foreign and domestic "like products" and any measures that "afford protection to domestic production."[398] Under the general exceptions of GATT Article XX, trade discriminatory measures can be justified and upheld when they are necessary to exceptionally important objectives. This provision can be used to defend policies and subsidies that violate provisions of the GATT 1994.[399]

The SCM Agreement similarly disciplines the use of subsidies and regulates the actions countries can take in response to subsidies. The SCM Agreement emerged from the Uruguay round negotiations and applies to trade in goods, but not services.[400] The SCM Agreement defines a subsidy as "a financial contribution by government that confers a benefit" and the SCM Agreement applies when measures meet this definition.[401] In *Canada-Aircraft* (1999)[402], the "private market test" was used to show that a benefit is conferred when "the recipient has received a financial contribution on terms more favourable than those available to it in the market."[403]

The two types of subsidies relevant to WTO law are prohibited and actionable subsidies. Prohibited subsidies are comprised of local content subsidies and export subsidies.[404] For actionable subsidies, in order to be actionable under the SCM Agreement, the subsidy must cause adverse trade effects to another WTO Member. If they do not cause adverse effects, they are permissible. There are three types of trade effects overall in this context.[405] Firstly, "serious prejudice to the interests of another Member," where the complainant must demonstrate these effects and prove that the prejudicial effects are directly caused by the subsidy itself.[406] Secondly, there must be material injury or threat of injury to the industry of the complaining Member.[407] According to *EC—Large Civil Aircraft,*[408] the materiality of the injury depends on "the nature of the product and industry in question". A member can introduce countervailing duties or pursue the WTO's dispute settlement system to remedy the injury.[409] Causation must be established by demonstrating that the volume and price effects of subsidized imports directly cause the material

[396] Verkuijl, supra note 506, at 320.
[397] Ibid at 320.
[398] Ibid at 321.
[399] Ibid.
[400] Ibid at 322.
[401] Ibid.
[402] Appellate Body Report, Canada – Measures Affecting the Export of Civilian Aircraft, WT/DS70/AB/R, adopted 20 August 1999, DSR 1999:III, p. 1377.
[403] Verkuijl, supra note 506, at 323.
[404] Ibid at 326.
[405] Ibid at 327.
[406] Ibid.
[407] Ibid at 329.
[408] Panel Report, *European Communities and Certain Member States – Measures Affecting Trade in Large Civil Aircraft*, WT/DS316/R, adopted 1 June 2011, as modified by Appellate Body Report WT/DS316/AB/R, DSR 2011:II, p. 685
[409] Verkuijl, supra note 506, at 330.

injury.[410] The third and last trade effect is the "nullification or impairments of benefits accruing directly or indirectly to other Members under the GATT, in particular the benefits of concessions bound under GATT Article II." In other words, benefits accrued by Members under the GATT can be impeded by subsidies of other Members. This can be remedied through a multilateral approach, i.e. by recourse to the WTO dispute settlement system.[411]

Importantly, the SCM Agreement only applies to subsidies that have "specificity," meaning they are specific to an enterprise, industry, or region. In order to be actionable, the subsidy must be "specific" to an enterprise, industry or region and must cause adverse trade effects to another Member. [412] To be considered countervailable, a subsidy must be specific within the meaning of Article 2.[413] There are two considerations for determining whether a subsidy is specific:[414] First, whether the government explicitly limited access to a subsidy. Second, whether the eligibility criteria for a subsidy are objective and clearly explained in law. Determining whether a subsidy is specific will turn on an analysis of each individual ETS.

Further, subsidies can be *de jure* specific or *de facto* specific.[415] The different types of subsidies are handled differently under the SCM Agreement, but both have remedies. A member state can seek to remove subsidies or any adverse effects stemming from subsidies by virtue of the WTO's dispute settlement system.[416] As well, members can impose countervailing duties after launching their own investigations on subsidized imports to remedy any trade-distorting effects.[417] When it comes to subsidies, some exceptions exist for least developed and some developing countries (those with GNP per capita <$1000) to encourage development.[418]

Safeguards are the emergency protection measures permitted to be used by WTO member states to protect their domestic industry in the case of injurious importation (usually a surge). Safeguards are regulated by Article XIX of the GATT 1994, and are infrequently used, likely because the injury to domestic industry must be serious. Article XIX also requires sunset clauses for all safeguards. Furthermore, when used they are only to be applied to the extent necessary and cannot target specific countries. There are also some exceptions for developing/ least developed countries. Despite prohibition under WTO rules, countries have often preferred to safeguard using "grey area" measures outside of the GATT 1994.[419]

II. Subsidies in Legal Systems with Carbon Pricing and BCAs

[410] Ibid.
[411] Ibid.
[412] Ibid at 325.
[413] Trachtman, Joel P. "WTO Law Constraints on Border Tax Adjustment and Tax Credit Mechanisms to Reduce the Competitive Effects of Carbon Taxes." *SSRN Electronic Journal*, (2016): 1-42 at page 33.
[414] Rambod Behboodi & Christopher Hyner, "Countervailing Climate Change: Emissions Trading and the SCM Agreement" at 621.
[415] Trachtman, Joel P. "WTO Law Constraints on Border Tax Adjustment and Tax Credit Mechanisms to Reduce the Competitive Effects of Carbon Taxes." *SSRN Electronic Journal*, (2016): 1-42 at page 34.
[416] Verkuijl, supra note 506, at 322.
[417] Ibid at 322.
[418] WTO, "Anti-dumping, subsidies, safeguards: contingencies, etc." online: *WTO* <www.wto.org>.
[419] Ibid

Subsidies and Carbon Tax

Governments may be tempted to offer assistance that is essentially a subsidy to counteract the effects of Greenhouse Gas ("GHG") reduction measures such as carbon taxes and to supplement the effect of BCAs. These types of subsidies are prohibited under WTO law, provided they are "specific" to a particular industry or supplier.[420] Unfortunately, there is little case law to assist in determining whether subsidies addressing climate change would be "specific" within the definition of the SCM. It is possible that subsidies relating to environmental policy could be interpreted as protectionist devices in violation of international trade rules and result in countervailing duties. This would undermine both trade liberalization rules and environmental policy.[421] These issues could also impact competitiveness of exports.[422]

There is uncertainty whether any "free" allocations of GHG permits would be inconsistent with the SCM Agreement.[423] In the context of BCAs, generally it is the importer of goods covered by BCAs who is required to purchase the requisite carbon certificates. If the government of an importer provides free carbon certificates to an importer, then this could be considered a "subsidy" under the SCM Agreement if it results in adverse effects to another WTO member.[424]

It is worth considering other government incentives that could be deemed as subsidies under the SCM Agreement, such as government financing for carbon improvements to production processes. These types of investment subsidies, which provide industries with funds that are designed to be spent on production improvements, may also result in the lowering of a particular company's tax liability, which would confer an indirect financial benefit.[425]

It is possible that a carbon tax credit which is designed as neither an import substitution subsidy nor an export subsidy and which satisfies the requirement of objective criteria under Article 2.1(b) would be found to be non-specific. That would mean it is legal under the SCM Agreement.[426] Depending on the facts of such a credit and its design, an Article XX defence may be also an option.[427]

Tax expenditures typically fall within the definition of subsidies under the SCM Agreement as a forgone tax revenue. These are measured by looking at the gap between the price of certain fuel for industrial consumers that have been granted the tax concessions and the reference price borne by other users.[428] On the consumption side, many countries adopt reduced VATs or direct budgetary transfers to specific groups (low-income households, agriculture, transportation). These might fall within the WTO definition, but there is a low chance they will be challenged due to their

[420] Low, Marceau, Reinaud, supra note 590 at 28.
[421] John H Jackson, "World trade rules and environmental policies: Congruence or conflict" (1992) *Wash. & Lee L Rev* 49 1227 at 1247.
[422] Ibid at 1249.
[423] Low, Marceau, Reinaud, supra note 590 at 28.
[424] Ibid at 28.
[425] Ibid at 27.
[426] Trachtman, Joel P. "WTO Law Constraints on Border Tax Adjustment and Tax Credit Mechanisms to Reduce the Competitive Effects of Carbon Taxes." *SSRN Electronic Journal*, (2016): 1-42 at 34.
[427] Ibid at 37.
[428] Espa and Rolland, supra note 502, at 3.

social aim.[429] On the production side there can be governmental intervention through direct expenditures, tax expenditures, preferences on royalties, or loans.[430] These measures create market distortions by encouraging higher production from less efficient and higher polluting producers.

Subsidies under the Agreement on Agriculture may also be relevant, as fertilizers can be one of the designated products subject to the BCA. Of note is the definition of "subsidy" under the Agreement on Agriculture, which includes both direct government financing of agricultural exports, but also includes situations where governmental regulations allow for, or even favour, the provision of subsidies by producer groups (per *EC-Sugar*).[431] In other words, financial assistance provided to exports by agricultural groups such as the Dairy Farmers of Canada, could also be considered a subsidy under the Agreement on Agriculture.

Subsidies under Emissions Trading Systems

An Emission trading scheme ("ETS") is a market-based approach to reducing GHG emissions. Under an ETS, entities are given a certain number of allowable emissions. When the entity needs to emit more than what is allowed, they must enter the marketplace and purchase additional credits so they may emit more GHG.[432] In layman's terms, an ETS allows entities to purchase a right to pollute, and it rewards entities that reduce their consumption and emissions.[433] The effectiveness of an ETS relies on participation.[434] When governments implement an ETS they should not limit participation to certain sectors because reducing emissions is maximized when there is a high level of participation.[435]

Since there are no international ETS agreements, governments can implement an ETS however they wish.[436] This is problematic for several reasons. When a particular sector or entity falls under the umbrella of an ETS, they must purchase credits if they want to emit GHGs above the allowable threshold. If a sector or entity does not fall under the ETS umbrella, they do not need to purchase these credits.[437] This creates the issue of resources being shifted from a covered entity to an excluded entity in order to avoid the ETS credits required to emit higher GHGs.[438] It is conceivable thus that an industry that can find a way to not be a "covered entity" under an ETS will choose to do so, even without technically limiting or becoming accountable for its carbon emissions. This can depend, *inter alia,* on the design of the ETS and the technical elements of who qualifies and who is excluded from the measures.

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[429] Ibid at 5.
[430] Ibid.
[431] Appellate Body Report, European Communities – Export Subsidies on Sugar, WT/DS265/AB/R, WT/DS266/AB/R, WT/DS283/AB/R, adopted 19 May 2005, DSR 2005:XIII, p. 6365. See also Low, Marceau, Reinaud, supra note 590, at 27.
[432] Rambod Behboodi & Christopher Hyner, "Countervailing Climate Change: Emissions Trading and the SCM Agreement" at 599.
[433] Ibid at 602.
[434] Ibid at 600.
[435] Ibid.
[436] Ibid.
[437] Ibid at 601.
[438] Ibid at 600.

There are also ETSs which contain sectoral exclusions that are not otherwise encapsulated by other forms of carbon tax or carbon pricing. These types of ETS exclusions generally pertain to power generation, or sectors which require significant power input. [439]

The provision of free emissions credits or emissions credits at a reduced cost would constitute a 'benefit' under the SCM Agreement in the form of a 'financial contribution' or forgone revenue. Allowing emitters to be entirely exempt from the ETS would similarly constitute the provision of a 'benefit'' in the form of forgone revenue. The emitters in these examples would not be compensating for the externalities arising from their resource consumption.[440] According to *US Export Restraints,*[441] when determining if something could be considered a subsidy, the focus should be on the nature of the government action, not the effect of the action.[442] Regarding an ETS, the issue is the actual compilation of the ETS and the excluded sectors, not the overall effect of the ETS scheme.[443] Such measures could trigger a countervailing subsidy discussion or conflict under the SCM Agreement.[444]

Another critical question at issue is whether clean air specifically, as opposed to polluted air, falls within the definition of a 'good' under the SCM Agreement.[445] When compared to softwood lumber, clean air can appear to be a good. In *US-Softwood Lumber*,[446] the question at issue was whether trees were goods prior to harvesting; that is, while the trees were still firmly rooted to the ground and within the public domain as a natural resource.[447] The WTO Appellate Body decided lumber in its natural state was a good. The jurisprudence can be seen to support that clean air be categorised as a good along the same chain of reasoning, "consumed" for power generation. Further, in *US- Gasoline*,[448] the panel found that clean air is an exhaustible natural resource.[449] This is because clean air is a natural resource in its natural state, and it can be depleted.[450] The panel concluded that clean air is consumed when pollutants are released into the atmosphere. The panel also said the following points are "jurisprudentially unassailable":[451] the term "good" covers a wide range of tangibles and intangibles. Essentially, a good is anything of value or capable of holding value; thus, air can be a good and can have value. Further, clean airis a natural resource that can be consumed, depleted, or exhausted via the release of harmful pollutants into the atmosphere.

[439] Ibid at 614.
[440] Ibid at 602.
[441] Panel Report, United States – Measures Treating Exports Restraints as Subsidies, WT/DS194/R and Corr.2, adopted 23 August 2001, DSR 2001:XI, p. 5767
[442] Rambod Behboodi & Christopher Hyner, "Countervailing Climate Change: Emissions Trading and the SCM Agreement" at 606.
[443] Ibid.
[444] Ibid at 601.
[445] Ibid at 614.
[446] Appellate Body Report, *United States – Final Countervailing Duty Determination with Respect to Certain Softwood Lumber from Canada*, WT/DS257/AB/R, adopted 17 February 2004, DSR 2004:II, p. 571
[447] Rambod Behboodi & Christopher Hyner, "Countervailing Climate Change: Emissions Trading and the SCM Agreement" at 608.
[448] Appellate Body Report, *United States – Standards for Reformulated and Conventional Gasoline*, WT/DS2/AB/R, adopted 20 May 1996, DSR 1996:I, p. 3
[449] Rambod Behboodi & Christopher Hyner, "Countervailing Climate Change: Emissions Trading and the SCM Agreement" at 615.
[450] Ibid.
[451] Ibid at 616.

For a subsidy to exist, the financial contribution that is questioned - in this case, the provision of a good by the government - must confer a benefit to the recipient.[452] When a government provides a good, a financial contribution exists.[453] The main question is this: does the government provide clean air as a 'good' to industries that release harmful pollutants into the atmosphere? When an ETS is implemented, clean air is provided to emitters. When operating under an ETS, each emitter of GHGs is required to pay a price for releasing carbon molecules into the atmosphere if they exceed a certain threshold emission.[454] As such, it can be considered that each emitter is given an allowable quantity of "clean air" to consume for their operations. If they use up all their clean air, they must pay a tax on any additional carbon that is released. Therefore, the provision of clean air via a government's ETS is applicable under Article 1.1(a)(iii) of the SCM Agreement: "a financial contribution exists where a *government provides a good*".[455]

To determine if clean air provided by the government to emitters confers a benefit, the market where the good was provided must be defined.[456] When an ETS is introduced, the government creates a market where clean air becomes a commodity.[457] It is traded and regulated. Therefore, the benefit that is conferred to emitters who are excluded from the ETS is the difference between the price they are currently paying for emissions, which is zero because they are excluded from the ETS, and the price they would have paid for the carbon credits which are required when operating under the ETS.[458]

III. Renewable Energy, Trade and Subsidies

Most renewable energy subsidies fall within the definition of "subsidy" in the SCM Agreement but with some it is hard to prove that they pass the "specificity" test. Tax expenditures fall within the definition of subsidy. Renewable energy subsidies play a vital role in uplifting the sector because they help break down barriers to entry. Most existing players externalize their environmental cost, but new entrants will likely internalize them.[459] The SCM Agreement does not adequately address dual pricing practices and a large amount of renewable energy support falls within the scope of the SCM Agreement.[460]

R&D grants fall within covered subsidies of the SCM Agreement if they are specific in the sense of Article 2. For example, hydrogen fuel cells may not have a definable industry as a beneficiary, but photovoltaic panels may as they are only aimed at solar companies. R&D grants have little chance of being export contingent but could be contrary to Article 3 if they are

[452] Ibid at 620.
[453] Ibid at 617.
[454] Ibid at 619.
[455] Ibid.
[456] Ibid at 620.
[457] Ibid.
[458] Ibid.
[459] Espa and Rolland, supra note 502, at 5.
[460] Ibid.

conditioned on the use of domestic goods input.[461] Loans at preferential credit terms and loan guarantees to scale R&D on renewable energy improve manufacturing components used to produce clean energy fall within the definition in the SCM Agreement. Measures designed to ensure that energy prices do not fall below a level that allows for the internalization of environmental costs might fall within the meaning of the SCM Agreement as a form of income or price support. Energy endowed countries implement dual pricing as a means of reserving cheaper energy for their consumers, the SCM Agreement is insufficient depending on how the dual pricing is implemented. The main issue is that such practices are often applied to all manufacturing sectors and are therefore not specific.[462] Furthermore, the nuclear sector benefits from a wide array of production subsidies that typically fall within the definition in the SCM Agreement.[463]

Government measures that stabilize domestic prices so that export prices are sometimes lower than domestic prices are not considered an export subsidy if the export prices are also comparable to or higher than in the domestic market during the representative period and if the price is not designed "to stimulate exports or otherwise seriously prejudice the interests of other contracting parties" according to Article VI of the GATT.[464]

Every WTO challenge in the energy sector has been in reference to renewable energy.[465] According to Timothy Meyer and the "loss aversion" hypothesis[466] there is a 'sunk-costs' mentality when it comes to long standing oil/gas subsidies compared to the new violations associated with the renewable sector.[467] He also argues that the more diversified an economy, the more likely they are to be motivated to abide by WTO rules due to the retaliatory measures that could impact other industries.[468] Most major oil/gas exporters do not have very diversified exports, thus are less motivated by potential WTO sanctions should their oil/gas subsidies be questioned.[469] Meyer suggests that renewable energy may be entering an "unfair playing field" as they not only have to contend with trade rules but are also going up against unenforced trade rules for their competitors (namely fossil fuels).[470]

One of the major cases discussing renewable energy was Canada Renewables.[471] It was the first such renewable energy dispute settlement at the WTO. In January 2012, Japan and the EU lodged a complaint against Canada at the WTO regarding the Ontario Feed-in Tariff (FIT) program.

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[461] Ilaria Espa and Gracia Marín Durán. "Renewable energy subsidies and WTO Law: Time to rethink the case for reform beyond Canada–Renewable Energy/FIT Program." *Journal of international economic law* 21, no. 3 (2018): 621-653 esp at 647.
[462] Espa and Rolland, supra note 502, at 6.
[463] Ibid.
[464] Trade Remedies and Development of Renewable Energy – Gary Horlick
[465] Timothy Meyer, "Explaining energy disputes at the World Trade Organization." *International Environmental Agreements: Politics, Law and Economics* (2017) 17 391 at 394.
[466] Ibid at 394, 404.
[467] Ibid at 401.
[468] Ibid at 401-403.
[469] Ibid at 403.
[470] Ibid at 407.
[471] Appellate Body Reports, Canada – Certain Measures Affecting the Renewable Energy Generation Sector / Canada – Measures Relating to the Feed-in Tariff Program, WT/DS412/AB/R / WT/DS426/AB/R, adopted 24 May 2013, DSR 2013:I, p. 7

The FIT enacted by the province of Ontario was a scheme that paid guaranteed premium rates for set periods to producers of electricity produced by renewable energy sources.[472] The equipment needed to have a level of minimum domestic content to qualify, a Local Content Requirement. There are several market failures that might argue the economic case for the use of FITs. These include renewable energy technologies, capital market imperfections, latent comparative advantage, lack of appropriability and environmental externalities.[473] These market failures can provide arguments for why governments should intervene with corrective stimulus measures. [474] Most economists agree that the first best policy route would involve, among other things, the removal of perverse subsidies to the fossil fuel sector and the imposition of a carbon tax.[475] There are some basic problems with Local Content Requirements. They do not work in isolation and must be accompanied by other policies. They will only work if cost and quality differences between local and global suppliers are not too substantial, they could deter investment outright or at least drive up the costs of production. The local firm will eventually need to be exposed to international markets, meaning the Local Content Requirements will have to be phased out over time. Finally, Local Content Requirements require a large domestic market in order to be profitable.[476] The FIT provided favourable treatment to Canadian producers over foreign producers.

The complaints were based on Article 1.1 of the SCM Agreement and the claim that the FIT was prohibited under Article 3 of the SCM Agreement because it included the Local Content Requirement;[477] the Local Content Requirement being incompatible with the prohibition of non-discrimination in Article III: 4 and III:8(a) of the GATT; and Article 2.1 of the TRIM.[478]

The panel upheld the EU's complaint regarding domestic product requirements violating national treatment (Article 1.1 of the SCM Agreement, III:4 of the GATT and Article 2.1 of the TRIM).[479] The Panel found that the derogation from the national treatment principle could not be justified under GATT III:8(a). Additionally, they found that there was no subsidy in place as asserted by the EU (Article 3.1(b) and Article 3.2 of the SCM Agreement). In this, they also put out their observations on how to approach whether there has been a "benefit" under Article 1.1.(b) of the SCM Agreement. [480]The decision was appealed before the WTO Appellate Body. In 2013, the Appellate Body partially upheld the panel's finding.[481]

The Appellate Body decision focused on two main issues from the panel decision: 1) benefit benchmark analysis and, 2) whether there was a benefit within the meaning of Article

[472] Ricardo Meléndez-Ortiz and Richard Samans, "Compilation Report from E15 Expert Group on Clean Energy Technologies and the Trade System"(2013) International Centre for Trade and Sustainable Development (ICTSD) and World Economic Forum at 39 [Meléndez-Ortiz and Samans].
[473] Ibid at 40.
[474] Ibid.
[475] Ibid.
[476] Ibid.
[477] Ibid at 41.
[478] WTO, "Canada – Measures Relating to the Feed-in Tariff Program" (26 June 2014
26 June 2014) DS426, online: *WTO* <www.wto.org>.
[479] Ibid.
[480] Ibid.
[481] Ibid.

1.1(b) of the SCM Agreement, including the relevant market and the determination of a benefit/advantage.[482] The Appellate Body also addressed Japan's claim that the panel violated Article 11 of the DSU with regards to the definition of the relevant market.[483] The Appellate Body found that the panel should have been more critical of supply-side and demand-side factors when analysing markets, ultimately finding that the energy supply mix is incredibly relevant when determining the relevant market.[484] The panel defined the relevant market as energy generated from all energy sources.[485] The Appellate Body found this to be far too simplistic. The Appellate Body considered many factors including the *US - Softwood Lumber* decision[486] where the Appellate Body determined that where the prices of goods in question in the country of provision are distorted, it is possible to look at an out of country benchmark.[487]

Ultimately, on the issue of relevant market, the Appellate Body found that the government's definition of the energy supply mix doesn't in and of itself constitute a subsidy, so in determining the relevant market, one should take the supply mix as a given.[488] Thus, the Appellate Body considered other green energy, but decided that these were not appropriate benchmarks to determine if the FIT program conferred a benefit, and that the approach put forth by the EU and Japan was not appropriate.[489] The Appellate Body determined that the fact that a government sets prices does not in and of itself establish that there is a benefit.

Both the Panel and Appellate Body concluded that the Local Content Requirements in Ontario's policy breached the prohibition of non-discrimination.[490] It was easily found that the Local Content Requirements did confer an "advantage" on local producers of inputs, meaning the FIT program violated Article III:4 of the GATT and Article 2.1 of the TRIMs Agreement.[491] The Appellate Body did not make a finding as to whether Canada acted inconsistently with Articles 3.1(b) and 3.2 of the SCM Agreement. A positive subsidy determination would have been necessary to conclude that the policy was prohibited, but there was not enough evidence for the Appellate Body to do so. The Appellate Body held that it is first necessary to define the relevant product market to identify the necessary benchmark to an alleged benefit.[492] The factor that led to concluding that a separate market existed was the extremely high upfront costs of renewable energy generating capacity (partially offset by low operating costs) and the intermittency of

[482] WTO Appellate Body Reports "Canada – Certain Measures Affecting the Renewable Energy Generation Sector" and "Canada – Measures Relating to the Feed-In Tariff Program" (6 May 2013) WT/DS412/AB/R WT/DS426/AB/R, online: WTO <docs.wto.org> at 74.
[483] Ibid.
[484] Ibid at 125.
[485] Ibid at 126.
[486] Appellate Body Report, United States – Final Countervailing Duty Determination with Respect to Certain Softwood Lumber from Canada, WT/DS257/AB/R, adopted 17 February 2004, DSR 2004:II, p. 571
[487] WTO Appellate Body Reports "Canada – Certain Measures Affecting the Renewable Energy Generation Sector" and "Canada – Measures Relating to the Feed-In Tariff Program" (6 May 2013) WT/DS412/AB/R WT/DS426/AB/R, online: WTO <docs.wto.org> at 126.
[488] Ibid at 128.
[489] Ibid at 137.
[490] Meléndez-Ortiz and Samans, supra note 472, at 42.
[491] Ibid.
[492] Ibid at 43.

renewable energy production, both of which contribute to the inability of wind and solar PV producers to compete unaided with conventional electricity producers.[493]

Although the 'buy-local' provisions of Ontario's program were ruled to be in violation of WTO trade rules against protectionism, the WTO Appellate Body did not adjudicate on whether government subsidization in the form of price guarantees constituted a 'benefit' for the purposes of WTO legal analysis. However, notwithstanding the absence of a ruling on this point, the Appellate Body's reasoning was nevertheless significant in that it advanced WTO jurisprudence on several other points. Most important among these was that a measure can fit into multiple categories of financial contribution under SCM Article 1.1(a)(1). This, in conjunction with the non-ruling on government price guarantees, makes space for developing increased nuance in the WTO definition of a subsidy in the future. It is now clear that a country cannot discriminate in such a patent way as with Local Content Requirements. No WTO member state is allowed to discriminate in trade through measures that are not motivated by environmental considerations at the very least.[494] Second it is clear that this case created a shelter for non-discriminatory support policies from the application of subsidy laws.[495] The shelter is not full immunity, and the FIT was never a subsidy, the bar was merely raised for what a subsidy can be.[496]

Local Content Requirements were also at issue in a WTO conflict regarding India's solar industry. Many environmental groups were upset over the WTO ruling against India's solar industry domestic content requirements. It is important to bear in mind that the WTO did not rule against renewable solar energy in India.[497] Rather, it ruled against trade discrimination in violation of WTO competition laws.[498] The WTO Dispute Settlement Body here took the position that "climate change is a global problem" and thus "it should be tackle[d] with non-discriminatory trade measures" and that India did not necessarily need solar panels to be produced locally in order to boost their solar industry.[499] Another dimension to this problem is that India's solar panel industry suffered from dumping of Chinese import materials and that India's government has not imposed import duties on those materials despite calls to do so.[500] The local sector also suffers from "small factory sizes, lack of government support, and undeveloped domestic supply chains."[501] The government can do more to solve these deficiencies rather than imposing discriminatory trade measures.

Finally, are several solutions relevant to each of the major trade remedy measures that have or could have been applied in the context of clean energy in order to prevent these measures from being applied. These are: anti dumping, countervailing duties, and safeguards. With respect to trade remedies and renewable energy, the EU, US, and China are the main players with respect to trade remedies. There does not appear to be a difference in trade remedy patterns in the energy

[493] Ibid.
[494] Ibid at 45.
[495] Ibid.
[496] Ibid.
[497] Ed King, "No, WTO did not just kill India's solar industry" *Climate Home News* (25 February 2016), online: <https://www.climatechangenews.com/2016/02/25/no-the-wto-did-not-just-kill-indias-solar-industry/>
[498] Ibid.
[499] Ibid.
[500] Ibid.
[501] Ibid.

sector and the use of trade remedies more generally.[502] Countervailing duties that do not account for environmental costs run counter to producing emissions reductions in the energy sector. The environmental costs need to be considered equally on cost value of the benefit and the injury to the domestic industry. The adjustments might pass under the SCM Agreement.[503] Trade remedies that imply high duties on clean energy products affect consumer demand for products and thus impact the use of clean energy to the detriment of the environment.[504] This makes them less accessible and more expensive, driving demand for the clean energy goods down. There are four ways to potentially limit trade remedies. First, in level, which ensures that trade remedies are not higher than necessary in order to remove the injury inflicted on the renewable energy industry. Second, limits in time, which involves introducing a time limit for the trade remedies on clean energy to be in place. Third, limits in scope, which involves only permitting measures of a certain import value at the same time. Fourth, considerations in the public interest test, which includes environmental interests as a public interest to be considered in the trade remedies.[505]

IV. Fossil Fuel Subsidies

In addition to the discussion of avoiding turning any carbon pricing exemptions or BCAs into a subsidy, it is important to note here that in the area of WTO Law and Environmental regulation a very critical debate has been taking place over the past decade or so. The discussion of phasing out or eliminating the so-called fossil fuel subsidies will be briefly outlined here. This is particularly relevant to oil producers and the fossil fuel industry writ large. It is also relevant with respect to the transition from fossil fuel energy to renewable energy and the creation and consolidation of a green energy grid.

Fossil fuel subsidies average $400-600B USD worldwide annually. Renewable energy subsidies amounted to $66B in 2010 and are predicted to rise to $250B USD by the year 2035.[506] Domestic political rationales behind this include promoting innovation, job creation and economic growth, energy security, and independence. Subsidies may also serve environmental goals but the extent that subsidies help to achieve these goals is a matter of debate.[507]

Trade effects of energy subsidies provide another layer of complexity.[508] Non-renewable and nuclear energy materials seem to be traded globally and regionally, whereas renewable energy seems to be only traded locally due to the underdevelopment of grid and transportation technologies. However, production inputs for renewable energy tend to be traded, and financing the infrastructure of renewable energy may be done through foreign investment. It follows that subsidies with trade impacts affecting renewable energy involve the goods of production and the conditions for foreign investment.

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[502] Ilaria Espa and Sonia Rolland, "Subsidies, clean energy, and climate change" (2015) International Trade and Sustainable Development (ICTSD) and World Economic Forum at 8-9 [Espa and Rolland].
[503] Ibid at 7.
[504] Meléndez-Ortiz and Samans, supra note 472, at 60.
[505] Ibid at 65.
[506] Espa and Rolland, supra note 502, at 1.
[507] Ibid.
[508] Ibid.

Fossil fuel subsidies are defined as government support for consumers and producers of fossil fuels.[509] Consumer subsidies reduce the cost of fossil fuels, while producer subsidies raise the price of fossil fuels or lower production costs to benefit producers.[510] There is a range of fossil fuel subsidies through government intervention. It can be through: direct transfer of funds; funding for research and development; purchase of goods above market rate deviations; as well as exemptions from standard tax rules/ forgone government revenue.[511]

Fossil fuel subsidies are problematic because they artificially enhance fossil fuel competition as well as divert investment away from renewable energy and thus impede the transition to sustainable energy.[512] Although the WTO has illustrated its preparedness to move forward with a fossil fuel subsidy reform agenda, fossil fuel subsidies have yet to be challenged at the WTO. In comparison, disputes concerning renewable energy subsidies have been launched under the WTO.[513]

There are two different types of fossil fuel subsidies: consumption and production. Consumption subsidies lower the consumer price so that they do not pay the international benchmark price.[514] The IEA and IMF discuss price gaps to determine underpricing of fossil fuels in countries. The price gap approach only focuses on consumption subsidies.[515] In comparison, a production subsidy targets the production side. A pre-tax production subsidy provides a direct grant or a higher price to producers compared to the international benchmark.[516] A post-tax subsidy is "government revenue that is generally due but is not due in the case of otherwise taxable activities in the consumption or production of fossil fuels."[517]

Fossil fuel subsidies reform will not occur in a vacuum. There is interaction between fossil fuel subsides reform and other areas of international law, including WTO law, that needs to be addressed.[518] In relation to the GATT and SCM Agreement, a compliant fossil fuel subsidy does not prevent subsidies from additional discipline through the SCM Agreement or the GATT.[519] As well, a subsidy compliant with the SCM Agreement or GATT is not exempted from fossil fuel subsidy reduction reform.[520]

For individual states to successfully reduce fossil fuel subsidies, coordination with other states who aim to reduce fossil fuels is crucial. This parallel coordination avoids competitive distortion among producers.[521] WTO's analytical reporting surveillance and the dispute settlement

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[509] Cleo Verkuijl et. al, "Tackling Fossil Fuel Subsidies Through International Trade Agreements: Taking Stock, Looking Forward" (2018) 58:309 Virginia Journal of International Law 58 at 316 [Verkuijl].
[510] Ibid.
[511] Ibid at 318.
[512] Ibid at 313.
[513] Ibid at 314.
[514] Joel Trachtman, "Fossil Fuel Subsidies Reduction and the World Trade Organization" (2017) International Centre for Trade and Sustainable Development at 11 [Trachtman].
[515] Ibid.
[516] Ibid at 12.
[517] Ibid.
[518] Ibid at 17.
[519] Ibid.
[520] Ibid.
[521] Ibid at 18.

mechanism meets the needs for a fossil fuel reduction mechanism. There is a lot of experience at the WTO as members have broad experience managing subsidies.[522] The WTO can offer states policy concessions in return for states to change their fossil fuel subsidy policies.[523]

Across the globe, various developments are taking place that point to leaving fossil fuels in the ground. 'Leaving it in the ground' is quite literal, meaning to leave the fossil fuels where they are, in the ground. The first foundational principle is the customary rule of prevention of environmental harm. This principle suggests that states should phase out fossil fuel production and support it in line with the Paris Agreement's long term temperature goals. This could be interpreted to require states from refraining from actions that would likely lead to climate harm, for instance licensing new coal, oil and gas production, or supporting fossil fuels through public finance.

International legal principles can also help identify how the burden of moving away from fossil fuels should be shared, thereby aiding the pursuit of equal justice for all humans. Being mindful of equity as well as the principles of common but differentiated responsibilities, and states can support the transition for themselves and for their developing and least-developed counterparts. Some human rights considerations that can relate to fossil fuel transition have arguably attained international law status. These human rights can have corresponding duties for states to respect, protect, and fulfil them.[524] First states could pursue an informal coalition of the willing that would establish non-binding commitments to wind down fossil fuel production in line with climate goals while providing for a just transition. A second step, which could be done parallel to the first, would be for states to align the rules and practices of existing international agreements with the need for an orderly and just transition away from fossil fuel production. Building on these, states could ultimately move to negotiate a specific treaty to provide for a just transition away from fossil fuel production.[525] The WTO's SCM Agreement is mostly concerned with harm to competitors. An additional layer and focus should be on the extent to which this agreement could also discipline subsidies that harm the environment as a global common.[526]

Other policies can include avoiding locking in existing infrastructure, institutions, and individual behaviours into fossil fuels and conversely, reducing the risk of stranding assets for investors and governments due to premature retirement of fossil fuel reserves and supply infrastructure.[527] Policies could also support countries planning for an orderly transition away from fossil fuels. Finally, new policies could lead to biodiversity protections.[528]

Several countries have begun to implement policies restricting fossil fuel supply, some enacting total bans. However, these countries are relatively small fossil fuel producers, their policies are not solely driven by climate concerns (but also economic interests in, for instance, renewable energy) and they do not constrain the activities of fossil fuel producers headquartered in these countries. Moreover, similar policies are largely absent in major fossil fuel producing

[522] Ibid.
[523] Ibid.
[524] Harro van Asselt, "Governing fossil fuel production in the age of climate disruption: Towards an international law of 'leaving it in the ground", (2021) 9 Earth System Governance at 6 [van Asselt].
[525] Ibid.
[526] Espa and Rolland, supra note 502, at 1.
[527] van Asselt, supra note 524, at 2.
[528] Ibid.

nations and, in many countries, production is actively supported.[529] Unfortunately, international law, as it stands, offers no clear or consistent normative guidance on slowing fossil fuel production in light of climate change goals.

There has been a growing number of disputes on renewable energy support measures brought before the WTO. However, no legal proceedings against subsidies for oil, coal or gas have been initiated by members through the WTO dispute settlement mechanism.[530] International trade policy reforms have been identified for countries to address harmful fossil fuel subsidies.[531] These include: promoting technical assistance and capacity building; enhancing transparency; pledging subsidy reform, and ensuring credible follow-up through reporting and review; adopting a political declaration; and expanding the category of prohibited subsidies.[532] The most common explanation for the lack of fossil fuel subsidy disputes are legal factors.[533] Since the chance of success is lower, governments are reluctant to embark on legal proceedings to challenge subsidies. Prohibited subsidies have less requirements to meet.[534] Therefore making the challenge more straightforward as legal recourse would be through the GATT and TRIMs.[535] Renewable measures are more likely to incorporate WTO incompatible local content measures compared to fossil fuel measures.[536] Therefore, the renewable energy measures are litigated more often.[537] The specificity requirement under the SCM Agreement that makes a subsidy actionable impedes successful challenges to measures supporting fossil fuels.[538] If specificity is met, it is still difficult to demonstrate adverse trade effects thus adding another obstacle to a successful challenge.[539] Political factors also play a role in this as those who are not benefiting from fossil fuels are not in support of litigation.[540] This could be because large multinationals could benefit from subsidies in multiple countries.[541] Another explanation for this is that fossil fuel exporters have recently joined the WTO, thus there has not been sufficient time to for disputes to emerge.[542]

V. Policy Proposals to Address Fossil Fuel Subsidies

SDG 12 of the 2030 Agenda discusses the inefficiency of fossil fuel subsidies that "encourage wasteful consumption including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts."[543] On one hand, the normative guidance from international investment law seems to hinder a transition away from fossil fuel production to achieve climate goals. The mere threat of an investment dispute may delay

[529] Ibid.
[530] Verkuijl, supra note 506, at 309 and 332.
[531] Ibid at 309.
[532] Ibid.
[533] Ibid at 334.
[534] Ibid.
[535] Ibid.
[536] Ibid.
[537] Ibid at 335.
[538] Ibid.
[539] Ibid.
[540] Ibid at 332.
[541] Ibid.
[542] Ibid at 333.
[543] Ibid at 314.

or altogether deter a government's plans to phase out fossil fuels.[544] On the other hand, it is possible that International human rights law can be used as context to further illuminate the interaction between fossil fuel subsidies and sustainable development. International human rights law is relevant to fossil fuel production and climate change in at least three ways. First, the right to exploit natural resources is limited by the need to respect human rights, including Indigenous peoples and local communities. Second, climate change has a profound impact on human rights, such as the right to life, health, water and sanitation, food, housing, and development. Third, producers and local communities[545] and corporate actors can reduce their own emissions, reduce emissions from products and services, minimize emissions from their suppliers, publicly disclose their emissions and ensure access to remedies for people whose human rights were violated, all on a voluntary basis. These soft law instruments of the UN guiding principles arguably create a foundation for a duty of climate due diligence. There is some evidence that these soft law instruments may 'harden' through their application in court.[546]

There are several options for moving forward in addressing fossil fuel subsidies through international trade agreements.[547] In order to more cooperatively encourage environmental governance in other countries, countries could also push for more innovative participation in programmes such as the Enhanced Integrated Framework for Trade-Related Assistance for the Least Developed Countries, Voluntary Export Restrictions (which is open to non-G20/APEC membership), or the Trade Policy Review Mechanism. As an example of the latter option, pushing for mandates on subsidy transparency within the WTO system could make it easier for countries to know how to keep each other accountable.

Another option is to promote technical assistance and capacity-building. By identifying existing subsidies, WTO Members will gain an understanding of energy subsidies, trade, and the environmental impacts.[548] Countries lack the capacity to embark on this on their own. However, the WTO's Economic Research and Statistics Division could assist with building capacity by providing a stronger knowledge base.[549] Second is to enhance transparency of fossil fuel subsidies.[550] Under the SCM Agreement, the WTO members must notify their subsidies, but frequently they fail to notify in a timely fashion following the SCM Agreement notification system.[551] Improved transparency could shed light on existing subsidies in countries that have not notified other Members of their subsidies.[552] By committing to voluntary notification of fossil fuel subsidies under the SCM Agreement, it minimizes disputes and enhances overall clarity.[553] A third option is that Members could adopt subsidy reform pledges and ensure reporting and review.[554] If WTO members pledge to reduce fossil fuel subsidies, it could assist with the second option of

[544] van Asselt, supra note 524, at 5.
[545] Ibid at 3.
[546] Ibid at 4.
[547] Verkuijl, supra note 506, at 352.
[548] Ibid at 356.
[549] Ibid.
[550] Ibid.
[551] Ibid at 357.
[552] Ibid at 358.
[553] Ibid.
[554] Ibid at 359.

enhancing transparency and thus leading to more reforms and peer review.[555] The option to make a political declaration and a statement of intent would also contribute to tackling fossil fuels and reforming trade agreements. Negotiating a political understanding of which fossil fuel subsidies fall under the definition of Article 1 of the SCM Agreement will bode well with unifying countries regarding fossil fuel subsidies.[556] As well, expanding the category of prohibited subsidies under Article 3 of the SCM Agreement by including fossil fuel subsidies as prohibited subsidies.[557] The prohibition could be tailored to meet certain environmental or trade-related effects.[558] Even if fossil fuel subsidies are banned, control on production may still distort the market enough that renewable energy will need to be subsidised for a level playing field.[559]

The last option would be a choice of forum where Members could pursue rules, policies, and practices at the regional level, and this may influence multilateral discussions which would allow enforcement of tackling fossil fuel subsidies at all levels.[560]

Fossil fuel subsidies, as discussed, have been absent from the WTO's dispute settlement system. The political notion that new subsidies will likely be challenged, rather than existing ones, explains why renewable energy subsidies are more likely to be disputed. Legally, fossil fuel subsidies fall out of the scope of the SCM Agreement because they are not specific. Finally, proving adverse effects makes litigation difficult. There needs to be increased transparency amongst members to successfully tackle fossil fuel subsidies.[561] The uncertainty from trade disputes concerning clean energy creates an incentive for the major existing players in clean energy to facilitate clarification and evolution of SCM norms to provide secure policy space for clean energy initiatives.[562]

Tackling fossil fuel subsidies under the WTO will require changes to the scope of some of the rules and a strategy for identifying which subsidies support fossil fuel use. The current definition of a subsidy in the SCM Agreement has limitations that would undermine its usefulness in a mechanism restricting fossil fuel subsidies.[563] A reliable definition of "benefit" could be improved with guidance from the IEA, IMF, and OECD benchmarks for fuel pricing.[564]

Amending WTO agreements would be controversial, difficult, and time-consuming as it would be necessary to reach a consensus in the WTO;[565] "Negotiating a consensus agreement on such changes would require the proponents to make the case for the importance of climate change mitigation, set out the type of mitigation measures they wish to permit, explain why the changes are necessary, and engage seriously with other Members whose export interests would be injured

[555] Ibid at 360.
[556] Ibid.
[557] Ibid at 362.
[558] Ibid.
[559] Espa and Rolland, supra note 502, at 11.
[560] Verkuijl, supra note 506, at 363.
[561] Ibid at 362.
[562] Meléndez-Ortiz and Samans, supra note 472, at 47, 50. See also Climate Change and a Renewable Energy Scale-Up: Responding to Challenges Posed to the WTO - Amelia Porges and Thomas L. Berger
[563] Trachtman, supra note 514, at 10.
[564] Ibid.
[565] Meléndez-Ortiz and Samans, supra note 472, at 52.

by the mitigation measures."[566] This would be difficult, although if completed, the result would be permanent and have unquestionable legitimacy.[567] Additionally, this process would take many years, during which climate change would continue, with potential catastrophic and non-reversible results, and governments would still be facing uncertainty about their scope of action under trade rules.[568]

Amendments would only bind those WTO Members that accept them. For any WTO Member that does not accept an amendment, the un-amended WTO rules would still apply, and that Member could bring and win a dispute against any climate change or renewable energy measure that violates the pre-existing WTO rules.[569] To eliminate this free-rider problem and bridge the time period before entry into force, a possibility would be to seek consensus approval of a waiver of WTO obligations as a package with the amendment.[570]

A more practical approach is to revisit existing rules. [571]Once the existence of a subsidy is determined, whether it promotes the use of fossil fuels needs to be determined next.[572] Making this determination sets the scope for disciplining new fossil fuel subsidies.[573] The definition of "subsidy" should make the point of referencing carbon emissions expected to be produced by the subsidy.[574] Existing disciplines should be re-thought and at least three types of considerations should inform the way forward:[575] first, whether subsidies and climate change should be inscribed in a sectoral approach or fall within the scope of an across the board re-framing; second, decide whether the issues should be handled at the multilateral, regional, or unilateral level or a combination; and third, whether countries should aim for a legally binding framework, possibly backed by domestic or international adjudication.[576]

Another solution would be new specific exceptions that either are modelled on the language of Article XX or that pursue global public goods.[577] One alternative would be to justify clean energy subsidies under Article XX. Scholars disagree on whether Article XX applies to the disciplines in the SCM Agreement.[578] Several provisions of the SCM Agreement appear to suggest that the legal status of a subsidy and/or action against subsidies would be determined by applying the GATT and the SCM Agreement together (for example, 25.7). This approach has the advantage of certainty.[579] The Appellate Body has charted a route to considerable policy space for legitimate non-protectionist health and conservation objectives. The second advantage is that a member would have to establish the necessity of any trade restrictive impact from the subsidy.

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[566] Ibid.
[567] Ibid.
[568] Ibid.
[569] Ibid at 53.
[570] Ibid at 52.
[571] Ibid.
[572] Trachtman, supra note 514, at 10.
[573] Ibid.
[574] Ibid.
[575] Meléndez-Ortiz and Samans, supra note 472, at 47.
[576] Espa and Rolland, supra note 502, at 11.
[577] Ibid.
[578] Meléndez-Ortiz and Samans, supra note 472, at page 48.
[579] Ibid.

The understanding could specify that Article XX should not be interpreted so as to make available policy flexibilities on renewable energy to Members who are unwilling to undertake other reasonably available measures to achieve their objectives (in particular, Members who are unprepared to reform or remove, in an appropriate manner, subsidies that distort energy prices in favour of dirty energy).[580] Another alternative would be to define or clarify the concepts of 'Benefit', 'Financial Contribution', and 'Specificity' in the SCM Agreement as they apply to clean energy subsidies. An interpretive understanding of the Agreement could delineate what would be acceptable as "objective criteria or conditions" in the case of clean-energy subsidies.[581] This would be based on recognizing that increasing use of clean energy is a legitimate objective of subsidy policies.[582] This could save clean energy subsidy policy initiatives from violating WTO law. Moreover, a distinction can be made between clean energy and fossil fuel generated energy as non-like products or services (because of substantial externalities involved in their production). Measures that address relatively higher cost of generating clean energy should be presumed not to provide a financial contribution unless they are shown to be in quantity greater than that required to address the higher cost of clean energy. Green measures shall be deemed not to provide price support.[583] Similarly, green subsidies targeted at addressing the cost difference between producing clean energy and conventional energy should be presumed not to confer a benefit unless it is significantly out of proportion.[584] An interpretive understanding could facilitate SCM-inconsistent domestic content requirements into other kinds of WTO-consistent measures that ensure that recipients of clean-energy subsidies provide benefits to the local economy.[585]

Finally, WTO Member states could adopt a waiver for existing and temporary renewable energy subsidies as part of Article XI that is conditioned on the removal of discriminatory elements of a subsidy. The waiver would exempt any policy from trade remedy action.[586] A different option would be to seek agreement on an authoritative interpretation of WTO rules.[587] These interpretative understandings would not change the written law in the Agreement, but they could affect outcomes in WTO dispute settlement.[588]

A new Sustainable Energy Trade Agreement has been proposed that would clarify, add, or diminish obligations under the SCM Agreement. It could clarify which energy subsidies fall within the scope of subsidies disciplines. It could also classify generation, production, and supply of clean energy equipment subject to subsidies disciplines or expand categories of prohibited subsidies. It could also diminish the SCM Agreement by granting immunity to certain clean energy subsidies.[589]

C. Other WTO Agreements

[580] Ibid.
[581] Ibid at 49.
[582] Ibid.
[583] Ibid.
[584] Ibid.
[585] Ibid.
[586] Espa and Rolland, supra note 502, at 12.
[587] Meléndez-Ortiz and Samans, supra note 472, at 52.
[588] Ibid.
[589] Espa and Rolland, supra note 502, at 12.

There are other areas of WTO law such as the GATS, TRIPS, and the Anti-Dumping Agreement that may become relevant when implementing a carbon-pricing system of any kind. The General Agreement on Trade in Services (GATS) is an agreement on trade of services. BCAs are generally expected to fall within the realm of the GATT, but GATS may become more prominent if carbon certificates are determined to be "financial assets" within the meaning of the GATS (Annex s 5(a)(x)(F)).[590] Many countries that are developing BCAs are considering adopting a system that involves trading carbon certificates and many current carbon pricing systems already use carbon certificates. If carbon certificates are found to be financial assets, then any system involving the exchange or trade of carbon certifications would have to be carefully crafted in order to be GATS compliant.

There is also the Agreement on Technical Barriers to Trade (TBT Agreement), which requires that technical regulations, standards, and conformity assessment procedures be not more trade-restrictive than necessary to fulfil a legitimate purpose. This aims to ensure that technical regulations, standards, and conformity assessment procedures do not discriminate or impose unnecessary obstacles to international trade.[591] Regulations can be imposed under the TBT Agreement, provided they meet the requirements stipulated within the TBT Agreement. A technical regulation is defined as a document that sets out 'product characteristics'. The AB determined that "distinguishable marks", such as labels, are product characteristics.[592] The Panel in *EC-Trademarks and Geographical Indications* reaffirmed that "the label on a product *is* a product characteristic".[593] There is disagreement amongst experts about whether the TBT can apply to non-product related PPMs.[594] However, the technical regulations include labelling, which includes "packaging, marking, or labelling requirements as they apply to a product, process or production method".[595] Some have interpreted this provision as encompassing non-product-related PPMs.[596] When BCAs are implemented, there will likely be certain labelling requirements for industries to abide by. Further, labelling requirements may substitute regulations or standards but they remain technical regulations and must comply with the TBT Agreement.[597] As such, the BCAs will likely have to comply with the TBT Agreement.

Additionally, the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) does not impact trade of goods and trade measures in the same way as other WTO Agreements. TRIPS ensures a minimum standard of protection for intellectual property rights. Intellectual property rights exist in almost all products traded and in almost all processes and production methods used to manufacture those goods. As such, the intellectual property rights that exist in traded goods require protection. TRIPS is relevant in the context of BCAs and increased sustainability as industries may look to purchase patented technologies in order to produce more

[590] Patrick Low, Gabrielle Marceau, and Julia Reinaud, "The Interface Between the Trade and Climate Change Regimes: Scoping the Issues" (2011) World Trade Organization Working Paper ERSD-2011-1 at 32 [Low, Marceau, Reinaud].
[591] Agreement on Technical Barriers to Trade, 1868 U.N.T.S. 120 (TBT Agreement) Art 2:2.2.
[592] Appellate Body Report, European Communities – Measures Affecting Asbestos and Asbestos-Containing Products, WT/DS135/AB/R, adopted 5 April 2001, DSR 2001:VII, p. 3243.
[593] Low, Marceau, Reinaud, supra note 590, at 25.
[594] Ibid at 23.
[595] Agreement on Technical Barriers to Trade, 1868 U.N.T.S. 120.
[596] Low, Marceau, Reinaud, supra note 590, at 24.
[597] Ibid at 25.

carbon-efficient products. This would mostly affect less and least developed countries. However, it has been noted that "the climate change discussions do not appear to pose many questions of legal conformity with the TRIPS Agreement".[598] While TRIPS is not necessarily a barrier to the distribution of Environmentally Sound Technologies (ESTs), it also does little to encourage their dissemination.

D. Production and Process Methods

Most GHG measures are related to Production and Process Methods (PPMs).[599] PPMs are "the way in which products are manufactured or processed and natural resources harvested or extracted."[600] PPMs distinguish products produced by different means, resulting in differential treatment under the GATT articles I and III like-product analyses. There are two basic types of PPMS – Product Related PPMs (PR-PPMs) and non-product related PPMS (NPR-PPMS).[601] For PR-PPMs the production method physically or tangibly affects the quality of the end product, whereas NPR-PPMs do not.[602]

Since the GATT analyses, such as the 'likeness' test under Articles I and III, are primarily product-based, it is easier to impose tariffs on PR-PPMs as opposed to NPR-PPMs. NPR-PPMs raise several issues for international trade, particularly in imposing tariffs.[603] If a PPM only affects carbon emitted during production and not the final product, it would be deemed an NPR-PPM, and therefore is not relevant in the likeness analysis.[604]

Fully recognizing NPR-PPMs is crucial for incentives for renewable energy trade electricity and extractive industries.[605] There are currently no examples of differential tariff rates applied to electricity specifically on NPR-PPMS.[606] Thus, in some cases, it may be more feasible to regulate goods used to produce other goods rather than regulate the end products themselves.[607] Applying higher rates on electricity, the production of which results in higher pollution rates, could be a viable incentive.[608]

PPMs related to extractive industries, specifically those extracting raw materials, are non-product related since methods of extracting resources are not evident in the end product. It is

[598] Ibid at 34.
[599] Ibid at 7.
[600] Thomas Cottier, Renewable Energy and Process and Production Methods. E15Initiative. Geneva: International Centre for Trade and Sustainable Development (ICTSD) and World Economic Forum, 2015. www.e15initiative.org/ at 2 [Cottier].
[601] Ibid.
[602] Ibid.
[603] Ibid.
[604] Low, Marceau, Reinaud, supra note 590, at 7.
[605] Thomas Cottier, Renewable Energy and Process and Production Methods. E15Initiative. Geneva: International Centre for Trade and Sustainable Development (ICTSD) and World Economic Forum, 2015. www.e15initiative.org/ at 5.
[606] Ibid.
[607] Low, Marceau, Reinaud, supra note 590, at 5.
[608] Thomas Cottier. Renewable Energy and Process and Production Methods. E15Initiative. Geneva: International Centre for Trade and Sustainable Development (ICTSD) and World Economic Forum, 2015. www.e15initiative.org/ at 7.

possible, however, for host states to impose measures that consider traceable PPMs.[609] Host countries may design production or export restrictions based on PPMs. For example, PPMs allow members to adopt differential tariffs for the same, but differently produced, products.[610] This way, renewably produced energy would see a lower tariff than energy which is produced in a carbon-intensive manner.

There is an inherent link between the home state, the host state, and the production company within the extractive industries field.[611] The home state has the responsibility and authority to regulate extractive industries based on the principle of "territoriality and permanent sovereignty" over natural resources.[612] Host countries of extracting companies and third-party countries play a role in importing extractive industry products.[613] Trade law and regulations play a role in addressing any deficiencies regarding the environmental protection and human rights. However, the merge between trade, investment, human rights, and environment is at its beginning stages and research gaps are present.[614] Numerous host countries are not able to adequately regulate extractive industries, meaning these industries may pose a moral risk to states.[615] This issue could be addressed by the home country through laws and regulations, which can act as a deterrent and prevent companies from taking advantage of host countries whose regulations may not be as stringent.

PPMs are also crucial for sustainable development and can play a role in helping countries meet their Paris Agreement goals in protecting humans, local populations, and the environment.[616] In the extractive industries, PPMs can require human rights and environmental protection, and protections for the livelihoods of anyone living in the immediate neighbouring areas affected by the extractive industry.[617]

It should be noted that the way products are extracted normally leaves no trace in the product themselves, so it is important to recognize this as a matter of addressing "non-product related PPMs."[618] Governments of host countries should enact PPMs because they provide increased labour standards and safety of operations and environmental protection.[619] Ideally, PPMs would be based on internationally agreed regulations and standards.[620] The main question regarding the adoption of PPMs pertains to the extent that such standards defining the processes of extraction and distribution are lawful under current WTO law.[621]

PPMs also contribute to sustainable resource extraction that coincides with environmental and human rights standards. PPMs accomplish this using different methods:

[609] Ibid.
[610] Ibid.
[611] Ibid at 1.
[612] Ibid.
[613] Ibid.
[614] Ibid.
[615] Ibid.
[616] Ibid at 3.
[617] Ibid.
[618] Ibid.
[619] Ibid.
[620] Ibid.
[621] Ibid.

1. Labelling, informing producers and consumers on production methods deployed.
2. Requiring Certificates of Origin (COs). These certificates certify the origin of the product in terms of country and site of production.
3. Gaining trademark protection and operating under Corporate Social Responsibility (CSR) commitments. To the extent that a company operates under CSR commitments pledging compliance with voluntary and legal standards, products benefit from the exclusive use of trademarks and trade names associated with the extracted products.[622]

There are conceptual issues and policy arguments about the products/process distinction. The view that process-based measures are problematic is widely shared.[623] One reason process-based measures are viewed as problematic is that they conflate with "country-based" restrictions because they discriminate explicitly by reference to nationality. Country-based restrictions violate Article I, or III, or XI and are therefore *prima facie* violations of GATT.[624] Country-based measures are presumptively illegal because the distinction of nationality is irrelevant to economic efficiency. Furthermore, products that differ only in their nationality should have the same competitive opportunities.[625]

The cases of *Tuna*/*Dolphin*[626] and *Shrimp*/*Turtle*[627] are examples of the WTO AB rulings that all process-based measures not directly related to physical characteristics of the product itself are *prima facie* violations of the GATT, and therefore illegal, unless they are justified under Article XX. When a country specifies the PPMs for imported products, it is unilaterally determining something that ought to be decided through international cooperation and negotiation.[628]

The absence of negotiated rules or norms in making these determinations would itself be accepting unilateralism. In this case, the unilateral determination by the country of production affects the global commons. Thus, in choosing a rule that constrains importing countries' unilateralism in the cases mentioned above, the Panel was not favouring a multilateral solution over a unilateral one, but simply preferring the unilateralism of the producing country to that of the importing country.[629]

The goal is to defend measures regulating PPMs. First, an argument must be made that process-based measures are within the scope of Article III.[630] Second, it must be argued that process-based measures are not *prima facie* violations under Article III.[631] There is no

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[622] Ibid at 8.
[623] Robert House & Donald Regan, "The Product/Process Distinction – An Illusory Basis for Disciplinary 'Unilateralism' in Trade Policy" (2000) 11:2 EJIL at 269.
[624] Ibid.
[625] Ibid at 270.
[626] Appellate Body Report, *United States – Import Prohibition of Certain Shrimp and Shrimp Products*, WT/DS58/AB/R, adopted 6 November 1998, DSR 1998:VII, p. 2755
[627] Ibid.
[628] Robert House & Donald Regan, "The Product/Process Distinction – An Illusory Basis for Disciplinary 'Unilateralism' in Trade Policy" (2000) 11:2 EJIL at 251.
[629] Ibid.
[630] Ibid at 252.
[631] Ibid.

distinguishing product-based and production-based measures as a class under Article III. Third, the conceptual and policy arguments should be considered.[632]

Article III:4 applies to "internal laws, regulations and requirements affecting the internal sale… of products."[633] Process-based measures "affect the sale of products."[634] This is applicable even if the ban indirectly affects the price and quantity of the product's sales, or more importantly, reduces the sales.[635] Any further discriminatory effect would require justification under Article XX to be legal under the GATT.[636]

The Panel in *Tuna/Dolphin* and *Shrimp/Turtle* implied that process-based measures do not "affect products as such", suggesting that "products as such" are defined by their physical characteristics, that regulation of the production process is not the regulation of products and/or that process-based measures do not affect the ultimate physical constitution of the product. It follows from this reasoning that Article III:4 does not cover process-based measures.[637]

The AB's decision in *Shrimp/Turtle* appeared to reaffirm that process-based measures are to be reviewed under Article XI, not Article III. However, the AB did not specifically address the issue since it was not appealed, leaving the Panel's Article XI violation finding in place. The AB did make a procedural ruling: a law that takes the form of an import ban is a *prima facie* violation of Article XI, and if a tribunal is to consider the argument that the import ban is an internal regulation by virtue of the Note Ad Article III, then it is up to the respondent to bring forward evidence of the internal scheme that the import ban is said to enforce at the border. It is arguably not left to the complainant to negate the existence of any relevant internal scheme. This justifies the finding of an Article XI violation when the respondent refuses to defend an import ban. Little was said regarding the substantive significance about the status of process-based measures.[638]

There is a debate around the legality of the Article III distinctions regarding PPMs. Those who argue origin-neutral process measures are prohibited by Article III assume that "like products" means products that are alike in their physical properties. This means that foreign products, regardless of production methods, receive the same treatment as 'like' domestic products, even though the domestic products may have been processed with favorable methods.[639] This is where

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[632] Ibid.
[633] Ibid at 254.
[634] See: interpretation of "affecting the …sale" and the applicability of Article III to process-based measures in the jurisprudence: *Italian Discrimination Against Imported Agricultural Machinery*: The Panel opted for a broad reading. "Affecting" implies that Article III:4 covers the laws and regulations that directly govern the conditions of sale or purchase, and any laws or regulations that may adversely modify the conditions of competition between the domestic and imported products on the internal market.
See also: *Canada – Administration of the Foreign Investment Review Act*: application of Article III to domestic sourcing commitments undertaken by foreign investors as a condition of governmental approval for their investments.
[635] Robert House & Donald Regan, "The Product/Process Distinction – An Illusory Basis for Disciplinary 'Unilateralism' in Trade Policy" (2000) 11:2 EJIL at 254.
[636] Ibid at 253.
[637] Ibid at 254.
[638] Ibid at 256.
[639] Ibid at 258.

the debate arises. In this context, "likeness" is not primarily a matter of physical similarity. In fact, the issue of likeness is distinct from the issue of physical similarity.[640]

The real issue is the existence of differences between the products that justify different regulations. Regulatory distinctions must be rationally related to some non-protectionist regulatory purpose.[641] Products must be treated the same if, and only if, they do not differ in any respect that is relevant to an actual non-protectionist regulatory policy.[642] This gives us the meaning of 'like' in Article III, "not differing in any respect relevant to an actual non-protectionist policy" to define and prevent discrimination.[643]

Further in *Japan Alcoholic Beverages*[644], the AB said that it is not necessary for a Panel to determine legislative intent. If the measure is applied to imported or domestic products to afford protection to domestic production, then it does not matter what the legislative body intended. At the very least, the AB is saying that to find that a measure 'affords protection', it is not necessary that there be an explicit assertion of a protectionist purpose. This proposition is entirely consistent with two other propositions. First, the question of whether a measure 'affords protection' is best understood as a question about the objective purpose of the measure considering its provisions, structure, and political and historical context. Second, evidence of 'subjective purpose' in the form of legislative statements is highly relevant on the question of affording protection when such evidence exists.[645]

It has been argued by some that likeness should be read in light of the anti-protectionist policy of Article III:1. This is arguably consistent with the claim that there must be a difference between the first two sentences of Article III:2. It is also arguably consistent with the AB ruling in *Japan Alcoholic Beverages*. The Appellate Body emphasized that since there are two sentences in Article III:2, which must both be significant, "like" in the first sentence must connote an exceedingly high degree of similarity. However, the question of how high a degree of similarity remains unclear. As to the relevant dimensions of the comparison, the AB merely emphasized the contextual, discretionary nature of the judgment. The AB stated little to suggest that regulatory purpose could not be relevant to the determination of likeness. Instead, a list of factors such as similarity of end uses, and consumer preferences, along with the products' properties, nature, and quality was provided, which it might emphasize open-endedness. This list admittedly does not contain explicitly the notion of regulatory purpose. However, the Appellate Body held that specific factors an adjudicator should consider will vary from case to case.[646]

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[640] Ibid at 260.
[641] Ibid.
[642] Ibid.
[643] Ibid.
[644] Appellate Body Report, *Japan – Taxes on Alcoholic Beverages*, WT/DS8/AB/R, WT/DS10/AB/R, WT/DS11/AB/R, adopted 1 November 1996, DSR 1996:I, p. 97.
[645] Robert House & Donald Regan, "The Product/Process Distinction – An Illusory Basis for Disciplinary 'Unilateralism' in Trade Policy" (2000) 11:2 EJIL at 264.
[646] Ibid at 268.

E. Trade and Climate Change – Promoting Climate Goals with the WTO

As a starting point, the focus of negotiations to create multilateral agreements on climate change should be on efforts to reduce GHG emissions. The focus, for developed countries especially, should be on phasing out fossil fuel subsidies and increasing the use and development of sustainable technologies in order to move towards compliance with the Paris Agreement.[647] It is important to note that although carbon leakage has not posed a major risk yet. The risk of carbon leakage will likely only increase as national and regional climate policies become more stringent. However, certain border measures and domestic carbon pricing systems may be able to effectively counteract carbon leakage before it poses a major problem.[648]

The slow but inevitable "greening of the global economy" will determine the future of trade dynamics.[649] There is positive momentum for creating trade agreements with the aim of having free trade in environmental goods and goods essential to the development of green growth.[650] One example of such an environmentally focused decision is the *1996 Ministerial Declaration on Trade in IT Products* adopted by the WTO, which provides for free trade in IT goods.[651] APEC is another precedent, which includes an agreement to substantially lower tariffs on "environmental goods" and clean technology.[652]

Existing free trade agreements can hinder international efforts to implement multilateral free trade agreements on the environment. The pervasive use of bilateral and regional free trade agreements with larger trading actors like the United States, can prevent international climate change efforts from being successful.[653] This is largely because countries that are willing to join multilateral trade agreements towards environmental trade may be faced with conflicting obligations under existing free trade agreements. The existing agreements could impose heavy sanctions in the event of non-compliance. As a result, countries would more likely comply with their obligations under the agreements with the heavier sanctions at the expense of the other agreements in the event of a conflict.[654]

Free trade can potentially result in environmental degradation by way of its contributions to development and economic growth.[655] However, it can also support advancements in technology and efficiency, which can contribute to the diffusion of environmentally friendly technologies.[656] Global supply chains facilitate knowledge sharing regarding best practices and can help

[647] Eriksson, Emilie; Gisselman, Frederik; Swanson, Neil. "Trade and Climate Change – promoting climate goals with a WTO agreement." The National Board of Trade Sweden (2021). ISBN: 978-91-88201-90-4.
[648] Michael Jakob, "Climate policy and international trade – A critical appraisal of the literature" Energy Policy, Volume 156, 2021.
[649] Mathews, supra note 89, at 611.
[650] Ibid at 613-614.
[651] Ibid at 614.
[652] Ibid.
[653] Ibid at 615.
[654] Ibid.
[655] WTO, *Short Answers to Big Questions on the WTO and the Environment* (2020) at pg 3.
[656] Ibid.

disseminate more environmentally friendly production techniques and sustainable technology.[657] Restricting trade would undermine these benefits without necessarily offering better solutions.[658] Studies show that imported goods can have much lower environmental footprints than locally-produced goods because of factors like production, packaging, and disposal.[659] This is also due to specialization that certain countries have in certain industries, leading to greater efficiency in production and design. The WTO also works together with international partners focused on improving the sustainable development of least-developed countries.[660] These include the Aid for Trade initiative, the Enhanced Integrated Framework and the Standards and Trade Development Facility.[661]

One area of concern regarding free trade and the environment is transportation emissions. If transportation emissions remain unchanged, the combined emissions from all transportation involving trade is on track to increase by 160% by 2050.[662] Eighty-seven percent of trade transportation is done by sea, which has the lowest carbon emissions of all types of trade transportation.[663] That being said, sea transport still accounts for 7% of total emissions.[664] Efforts are being made by the International Civil Aviation Organization (ICAO) and the International Maritime Organization (IMO) to change their procedures and technologies towards lower pollution options.[665]

The predictability offered by WTO rules allows for more effective and coherent environmental policies.[666] The work of the CTE and other WTO committees ensures that trade and environmental initiatives are mutually supportive.[667] The WTO Secretariat also collaborates regularly with Multilateral Environmental Agreements such as UN entities.[668] For example, such collaborations have led to the publications of "CITIES and the WTO: Enhancing Cooperation for Sustainable Environment" and "Making Trade Work for the Environment, Prosperity, and Resilience."[669] This is in addition to hosting events, workshops, and eLearning courses.[670]

In order to design an environmental initiative in line with WTO law, the initiative should be coherent, fit-for-purpose, mindful, holistic, and flexible.[671] For a measure to be coherent, its restrictions on trade need to be connected to a legitimate objective.[672] For a measure to be fit-for-purpose, it either needs to efficiently contribute to the progress of the legitimate objective, or be part of a local plan that imposes the same restrictions domestically as it is intending to impose on

[657] Ibid at 5.
[658] Ibid.
[659] Ibid.
[660] Ibid at 6.
[661] Ibid.
[662] Ibid at 4.
[663] Ibid.
[664] Ibid.
[665] Ibid.
[666] Ibid at 14.
[667] Ibid.
[668] Ibid at 15.
[669] Ibid.
[670] Ibid.
[671] Ibid at 9.
[672] Ibid.

a trade partner.[673] In order to be mindful and holistic, there should be consideration of the impact on other WTO Members and the measure should be in line with international strategies of the same type.[674] Finally, to be flexible, all alternative means and methods for pursuing the legitimate objective need to be considered to avoid limiting trade.[675]

Many climate action tools such as carbon taxation, emissions cap-and-trade, energy efficiency standard, energy labelling, and renewable sector subsidies could potentially conflict with the WTO law.[676] Policy coherence is required between the trade system and environmental initiatives, which would be possible if there is cooperation between Member states at the national level and the WTO's Committee on Trade and Environment (CTE) at the multilateral level.[677] Member countries should also be considerate of particular needs and capacities of developing countries when designing and implementing policy choices.[678]

COP21 made it clear that carbon pricing will be an essential tool in the climate change fight.[679] In this vein, the G7 put forth the Carbon Market Platform with the purpose of popularizing carbon pricing schemes.[680] There are many different carbon pricing schemes in existence globally, and a globally linked carbon price will be ideal to avoid trade competition distortions and 'carbon leakage' concerns.[681]

There has long been recognition that the WTO law and efforts to reduce the impacts of climate change have often conflicted. However, there is a recent understanding that one of the goals of the WTO, to liberalize trade, can also benefit climate change mitigation efforts. Free trade was not always viewed in a positive light from the environmental perspective, but it has become apparent that the goals of sustainability and climate change reduction are not incompatible with the goals of free trade. Greater international efforts to reduce the effects of climate change are necessary, but progress remains slow. While WTO Members still enforce strict compliance with WTO law and they are unwilling to provide much leeway to other Members who implement more stringent climate change policies, WTO Members may be able to effectively increase climate ambition efforts using BCAs, while remaining WTO compliant. All things being equal, increased climate change efforts would have more success in a WTO system that facilitated greater collaboration and encouraged granting countries more discretion to use the tools available to them in their climate change policies. [682]

5. EU Carbon Pricing Framework and EU CBAM

[673] Ibid.
[674] Ibid.
[675] Ibid.
[676] Meléndez-Ortiz next, supra note 126, at 9.
[677] Ibid at 10.
[678] Ibid.
[679] Ibid at 11.
[680] OECD, "Carbon Market Platform", online: <https://www.oecd.org/environment/cc/carbon-market-platform/>.
[681] Meléndez-Ortiz next, supra note 126, at 11.
[682] Timothy Meyer & Todd N. Tucker, "A Pragmatic Approach to Carbon Border Measure" (2021) 21:34 World Trade Review at 17.

In 2005, the European Union (EU) adopted a cap-and-trade system called the ETS. The system involves a limit on the total amount of carbon emissions and allows companies to buy and sell allowances, so long as they maintain their obligation to operate below the cap.[683] The ETS cap-and-trade system does not resemble an environmental command-and-control regulation, (regulating both regulate both the amount and the process of reducing carbon emissions), and instead uses market principles.[684] Thus the system is flexible, market-based, and allows for the imposition of fines on companies. There are two important aspects of the EU ETS. First, the legislation applies to installations and not to products, and second, it does not cover imported products.[685] The ETS system therefore differs from a typical environmental command-and-control regulation due to its use of the cap-and-trade system.[686]

One of the chief concerns with this system is that companies will slowly move offshore for production, where the carbon restrictions are more relaxed, resulting in no net decrease in emissions. This is known as carbon leakage. To combat this, the EU has proposed a carbon border adjustment mechanism (CBAM), which would apply a carbon price to imported products. The CBAM would require importers to purchase emissions certificates that account for the emissions embedded in certain carbon-intensive imported products. The CBAM was crafted with the precise goal of WTO consistency. However, some countries allege that they are inconsistent with the WTO and some studies suggest that the CBAM could negatively affect certain countries' industries more than others.[687]

The CBAM will charge imports such as steel, aluminum, iron, fertilizer, cement, electricity, and other products, for their carbon emissions at rates that are equivalent to the rates paid by the same domestic products for their carbon emissions. This is intended to disincentivize domestic production from moving to "polluter havens." For this reason, the EU's approach generated concern from numerous countries that may be affected, including Russia, Turkey, and the United States. CBAM critics allege that the measures put foreign producers at a competitive disadvantage, particularly for the US, which is still developing climate and trade policies. The US warned that this may "have serious implications for economies, and for relationships, and trade."[688] To add to the United States' discontent, a leak of the EU's draft proposal revealed that importers could credit carbon tax in the cap-and-trade style in the country of origin but made no reference to crediting "implicit" costs like adaptation to environmental regulations. Thus, the United States' position is that the CBAM should credit indirect carbon costs as well.

Overall, the fear surrounding the EU's CBAM proposal is largely based on misconceptions of its operation and of its impact on imports (including from the US). The CBAM could help the US reach its climate objectives. The CBAM focuses on actual greenhouse gas emissions, which

[683] Quick, Reinhard. "Carbon Border Adjustment A Dissenting View on its Alleged GATT-Compatibility". *Carbon Border Adjustment, (2020)*: 551-596 at 568.
[684] Ibid at 563.
[685] Ibid at 564.
[686] European Commission, "EU Emissions Trading Systems", online: <https://ec.europa.eu/clima/eu-action/eu-emissions-trading-system-eu-ets_en>.
[687] James Bacchus, "Legal Issues with the European Carbon Border Adjustment Mechanism" (9 August 2021), online: https://www.cato.org/briefing-paper/legal-issues-european-carbon-border-adjustment-mechanism>.
[688] Leslie Hook, "John Kerry Warns EU Against Border Carbon Tax" (12 March 2021), online: *Financial Times* <https://www.ft.com/content/3d00d3c8-202d-4765-b0ae-e2b212bbca98>

will give US industries a competitive edge because many other countries produce more greenhouse gas emissions to produce that same product. This supports the conclusion that the CBAM may in fact help the US. Assuming the US implements a carbon tax, the CBAM could foster cooperation across borders for carbon taxes.

A. The Proposed EU Carbon Border Adjustment Mechanism (CBAM)

The European Commission (EC) proposed the CBAM to ensure that Europe meets the objective of the Paris Agreement to be carbon-neutral by 2050.[689] The current system in place to achieve this objective is the EU ETS. The EU ETS only applies to domestic products that originate within the EU and, as a result, there is a risk of carbon leakage, whereby domestic producers and manufacturers impacted by the EU ETS relocate outside of Europe to avoid paying for carbon emissions and increase carbon emissions outside of the EU. This is currently being addressed under the EU ETS with free allowances granted to industries and sectors that are considered by the EC to be at elevated risk of carbon leakage and compensating for increasing electricity costs due to the EU ETS.[690] A risk of carbon leakage remains as long as countries outside the EU do not share the same level of ambition.[691]

Since countries are to determine their own level of ambition under the Paris Agreement, there is a risk of undermining the effectiveness of each other's policies, especially where there is disparity in ambition.[692] The principle of nationally determined contribution (NDC) prevents a truly unified approach to carbon pricing. Under this system of granting free allowances and the principle of nationally determined contributions, the goal of preventing the global average temperature from rising 2 degrees Celsius above pre-industrial levels is not possible.[693] Therefore, CBAM creates a unified approach by all European states, rather than individual state action. It takes over the responsibility of preventing carbon leakage, which would allow the EU ETS to function and apply a carbon price to all domestic products without the need to grant free allowances. The two systems would function simultaneously, with the EU ETS applying to domestic products and CBAM applying to imported products. For sectors currently granted free allowances to have time to adjust, the CBAM proposes a transitional period during which free allowances decrease over time until they are phased out completely, at which time, the CBAM and the EU ETS will operate fully.[694]

There is no consensus on the products that CBAM will cover during implementation. The recent amendments by the Committee Rapporteur Mohammed Chahim proposed major changes to the EC's proposal. The Rapporteur proposed that CBAM apply more broadly from the outset to correspond to the products included in the EU ETS. The original proposal envisaged including only products most at risk of carbon leakage, then broadening to include more products. The Rapporteur argued that it is necessary to broaden the sectors and goods covered by CBAM from

[689] European Parliament, "European Commission Proposal for a Regulation of the European Parliament and of the Council Establishing a Carbon Border Adjustment Mechanism." COM (2021) 564 final, 2021 at 2.
[690] Ibid at 3.
[691] Ibid at 18.
[692] Ibid.
[693] Ibid at 6.
[694] Ibid at 112.

the outset if the EU wants to meet its target to be carbon neutral by 2050.[695] The Rapporteur's proposal included immediate application of CBAM to indirect emissions,[696] which are defined as "greenhouse gas emissions from the production processes of electricity which is consumed during the production processes of goods."[697] Indirect emissions were something the CBAM would apply to later, according to the original Commission proposal.[698] Under the Rapporteur's proposal, the definition of embedded emissions broadened to include both direct and indirect emissions, corresponding to the change to include indirect emissions within the scope of CBAM at the time the CBAM is implemented.[699] The other justification for broadening the scope of CBAM is that the EU ETS includes the power sector and CBAM would then correspond with domestic measures by including indirect emissions.[700]

Product coverage under CBAM is based on the sectors and emissions covered by the EU ETS.[701] The EU ETS applies to certain production processes and activities. While it is not possible for CBAM to apply to these production processes directly, CBAM can target the corresponding imports to goods. To identify imported goods as falling under the ambit of CBAM, a classification system called Combined Nomenclature will be used that links imports to their embedded GHG emissions. Clearly identifying imported goods by way of their classification is essential to ensure that imported and domestic products are on equal footing and to prevent carbon leakage.[702]

Pricing for imports of goods that fall within the scope of CBAM will be through the purchasing of certificates in an analogous manner that is done under the EU ETS. CBAM certificates must closely reflect the EU ETS price to ensure that CBAM is an effective measure to prevent carbon leakage.[703] The EU ETS has a daily auctioning system to determine the price of certificates. The Commission acknowledged that the need to set a clear price for CBAM certificates makes daily publication impractical and burdensome but taking the weekly average price of EU ETS auctions allows CBAM certificate prices to reflect the price fluctuations of the EU ETS, allowing importers to take advantage of price changes, while ensuring that the system is manageable for the CBAM authority.[704]

Importers of goods covered by CBAM can only import the goods if they have been granted authorization by an authorized declarant. Only authorized declarants can import goods that fall within the scope of CBAM into the EU. To become an authorized declarant there is a specific application process to follow and an authorized declarant may represent more than one importer.[705] The authorized declarant, as the representative of the importer, will annually submit a declaration of the embedded emissions in the goods imported into the EU in the previous year and surrender the number of CBAM certificates that correspond to those declared emissions to the CBAM

[695] Ibid at 11.
[696] Ibid at 75.
[697] Ibid at 23.
[698] Ibid at 17.
[699] Ibid at 22.
[700] Ibid at 23.
[701] Ibid at 6.
[702] Ibid at 20.
[703] Ibid at 9-10.
[704] Ibid at 22.
[705] Ibid at 30.

authority. This must be done annually by May 31st.[706] These embedded emissions declared will be verified by an independent verifier.[707] In the case where actual emissions cannot be determined, the number of CBAM certificates to be surrendered will be determined according to default values.[708] The Commission proposal explains the mathematical calculation that will be used to determine the default values for products and electricity.[709]

Where default values apply, the cost and burden of proving that the carbon efficiency of imports is better than the default value is on the importer. By allowing importers the opportunity to demonstrate that they perform better than the default value, it ensures that imports are not afforded less favourable treatment than domestic products and it ensures equal treatment of all imports.[710]

The authorized declarant can claim a reduction in the number of CBAM certificates to be surrendered that corresponds to the explicit carbon price already paid in the country of origin for its GHG emissions.[711] An internal or implicit carbon price built into the import is not satisfactory and does not discharge that importer's obligation to pay for carbon emissions under CBAM.[712] The authorized declarant is required to provide information and be certified by an independent body or person. This is to prove that the declared emissions are in fact subject to a carbon price in the goods' country of origin and to prove that the carbon price has been paid there.[713] Certificates to be surrendered may also decrease if EU ETS allowances apply to the goods and free allowances have not been completely phased out.

The characteristics of electricity and the way it is traded warrants a different approach than other products under CBAM. Default values have been proposed as the standard approach to trading electricity. However, if authorized declarants demonstrate that their actual carbon emissions are lower than the default value, the default value will not apply. The standard of proving actual emissions of electricity is higher than other goods and subject to strict conditions. It will be necessary to prove the contractual relation between the purchaser and producer of the electricity having lower than default value emissions or between the purchaser and the producer of the renewable electricity. This will avoid some of the risks of circumvention and improve traceability of actual carbon emissions from import of electricity and its use in goods. In addition, it helps mitigate the risk of carbon leakage by discouraging carbon intensive power generation near the EU borders which might replace EU based generators exposed to increasing carbon costs.[714]

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[706] Ibid at 31.
[707] Ibid at 37.
[708] Ibid at 32.
[709] Ibid at 66-69.
[710] Ibid at 10-11.
[711] Ibid at 33.
[712] European Parliament, "Draft Report on the Proposal for a Regulation of the European Parliament and of the Council Establishing a Carbon Border Adjustment Mechanism." *Committee on the Environment, Public Health and Food Safety*, 2021/0214(COD), 2021 at 9.
[713] European Parliament, "European Commission Proposal for a Regulation of the European Parliament and of the Council Establishing a Carbon Border Adjustment Mechanism." COM(2021) 564 final, 2021 at 33.
[714] Ibid at 23.

The EC and Rapporteur have proposed two different timelines to phase out free allowances in the EU ETS. The EC proposed to gradually phase out free allowances in sectors in which they apply, starting in 2026. At this point, the free allocation of allowances under the EU ETS would be gradually phased out by 10% each year. CBAM would simultaneously be phased in proportionally to the number of free allowances distributed in each sector.[715] The Rapporteur proposed a much faster phasing out period. The Rapporteur proposed to phase out free allowances starting in 2024, and to completely phase them out by 2028. In 2025, free allowances would decrease to 90%, 70% in 2026, 40% in 2027, and reach 0% by 31 December 2028. The Rapporteur's justification is that the pace of CBAM implementation in the EC proposal is too slow to meet the EU's objective of being climate neutral by 2050.[716] While this is true, the rapid transition proposed by the Rapporteur will be burdensome for sectors that benefited from free allowances and may not provide enough time for these sectors to adapt to the CBAM. It is unclear which timeline the European Parliament is in favour of at this point in time.

The EC stated that CBAM could be enforced under a decentralized system of 27 national authorities or at the EU level through a centralized system. The Rapporteur favours the efficiency and consistency of a centralized system with one European CBAM authority.[717] A decentralized system could lead to uneven implementation which could lead to forum shopping and compromise the integrity of the single market.[718] The centralized CBAM authority would be responsible for determining who is an authorized declarant,[719] selling CBAM certificates to authorized declarants at the price calculated,[720] and importers would be able to re-sell the certificates bought in excess back to the CBAM authority.[721] The CBAM authority would also be responsible for holding importers accountable. An authorized declarant that fails to surrender CBAM certificates corresponding to emissions embedded in goods or that submits false information related to actual emissions to obtain favourable treatment will be held liable. The penalty will be the equivalent of three times the average price of certificates in the previous year for each certificate that the authorized declarant did not surrender. If an authorized declarant has committed multiple offences, the CBAM authority may suspend the account of the declarant.[722]

As a result of the CBAM, there may be economic consequences to countries that do not have the resources to adapt to a low-carbon shift, such as developing countries.[723] This is a clear policy risk. The EU should consider using CBAM revenue to assist with decarbonizing at-risk countries. The focus is to design a CBAM that works for all countries, including developing countries.[724] Under the CBAM, countries with high shares of carbon-intensive exports to the EU would be exposed to additional costs, which could detrimentally affect trade and the domestic

[715] Ibid at 10.
[716] European Parliament, "Draft Report on the Proposal for a Regulation of the European Parliament and of the Council Establishing a Carbon Border Adjustment Mechanism." *Committee on the Environment, Public Health and Food Safety*, 2021/0214(COD), 2021 at 8.
[717] Ibid at 30.
[718] Ibid.
[719] Ibid at 24.
[720] Ibid at 45.
[721] Ibid at 15.
[722] Ibid at 55.
[723] Silvia Weko et al, "The Global Impacts of an EU Carbon Border Adjustment Mechanism" (2020) IASS Policy Brief at 4.
[724] Ibid.

economy.[725] Decarbonizing developing countries requires technological and financial support.[726] There are three propositions to remove this burden: considering at-risk countries in CBAM policy design; using CBAM revenue to mitigate risks for vulnerable developing countries; and building emissions reporting around existing international obligations.[727] There will likely be discussion on how to help developing countries adapt to the CBAM and become more carbon efficient closer to the time at which CBAM is implemented.

B. CBAM and the WTO Rules

The EU CBAM has yet to be litigated at the WTO, but CBAM was in theory specifically designed to be compliant with WTO law. Specifically, the EU was considering three principles when designing the CBAM: creating a level playing field between the existing different carbon pricing schemes, avoiding double taxation, and maintaining equality between domestic and imported goods.[728] That being said, whether these considerations are enough and CBAM's design is compliant with international trade law remains unknown. Experts have expressed concerns regarding the measure's compliance with two rules: the MFN principle and the National Treatment principle.[729]

As previously discussed, the GATT prohibits WTO Members under the MFN and National Treatment provisions from engaging in any discriminatory practices between like products based on the country of origin. If CBAM is found to violate any provision in the GATT, the EU may be able to justify the measure under Article XX(b) or XX(g). The EU has been careful in saying that the CBAM is a measure motivated solely by climate and health concerns. However, that is not enough; what matters for establishing justification under the general exceptions is the structure of the measure. Therefore, the EU must be able to demonstrate that CBAM is a measure necessary to protect human, animal or plant life or health under Article XX(b) of GATT or a measure relating to the conservation of exhaustible natural resources under Article XX(g).

The criteria that CBAM would have to meet in order to be justified under either of these exceptions are discussed above, in the section called 'Article XX – General Exceptions'. The analysis that follows is hypothetical and based on the assumption that if CBAM was found to violate the GATT, it would be either under the MFN or National Treatment obligation.

Article XX(b)

***Designed* to protect human, animal or plant life or health**

CBAM was specifically designed to protect human life and health. The objectives of the Paris Agreement are at the heart of CBAM, to respond to climate change and its effects on global

[725] Ibid.
[726] Ibid.
[727] Ibid.
[728] Reinhard Quick, "Carbon Border Adjustment A Dissenting View on its Alleged GATT-Compatibility". *Carbon Border Adjustment, (2020)*: 551-596 at page 554.
[729] James Bacchus, "Legal Issues with the European Carbon Border Adjustment Mechanism" (9 August 2021), online: https://www.cato.org/briefing-paper/legal-issues-european-carbon-border-adjustment-mechanism>.

poverty. The EU ETS is not on target to meet the EU's Paris Agreement target of being carbon neutral by 2050.[730] CBAM seeks to respond by requiring importers and domestic producers alike to pay for actual carbon emissions at the same rate, considering carbon pricing systems in exporting countries. It also responds by bolstering the EU ETS so that it can stop granting free allowances to emissions-heavy, trade-exposed sectors.[731] Protecting human health is anything but an afterthought; it is the reason behind CBAM's existence.

***Necessary* to protect human, animal or plant life or health**

CBAM contributes to the goal of climate neutrality by applying the same carbon pricing system to domestic and imported products so that all products are treated equitably, and all producers pay for the actual carbon emissions they produce.[732] Where an import that falls within the scope of CBAM is not charged for its carbon emissions in its country of origin, it will be charged the same rate that domestic products are charged. Further, where an import that falls within the scope of CBAM is charged for its carbon emissions in its country of origin, it will either be exempt when it is imported, or it will be adjusted to a lower price and only the difference between the domestic price and the price paid in the origin country will be paid at the time of import, where the importing country has a lower rate for emissions.[733] All products that are within the scope of CBAM and the EU ETS will be held to the same standards and will be charged the same rate on carbon emissions, no matter where the products are produced. The only differences will be the time at which the manufacturer must pay and whether the manufacturer must pay immediately, to domestic authorities or at the time of importation, to the CBAM authority.[734]

CBAM incentivizes domestic authorities of the EU's trading partners to adopt a carbon pricing system of their own.[735] CBAM provides opportunities for importers to prove that their emissions are lower than the default value or that emissions were paid for in the country of origin.[736] CBAM is not trade restrictive in that it will only apply if carbon emissions have not already been paid. Where importers have already paid for carbon emissions under a domestic carbon pricing system, the CBAM will have no impact on importers.

There is a strong indication that simply eliminating free allowances under the EU ETS and broadening its scope will lead to carbon leakage. In fact, studies suggest there would be an increase in global GHG emissions. Without a corresponding carbon pricing mechanism on imports to ensure domestic efforts are not thwarted by carbon leakage and low climate ambition abroad, the EU ETS cannot expand to those trade exposed sectors.[737] CBAM, as the mechanism of choice, will likely be considered the least onerous measure to ensure carbon leakage is avoided in the effort to become carbon neutral by 2050. It will be up to a complainant to identify an alternative measure and prove that it is possible to implement, effective in achieving the same objectives and

[730] European Parliament, "European Commission Proposal for a Regulation of the European Parliament and of the Council Establishing a Carbon Border Adjustment Mechanism." COM (2021) 564 final, 2021 at 2-3.
[731] Ibid at 11.
[732] Ibid at 79.
[733] Ibid at 8.
[734] Ibid at 11.
[735] Ibid at 10.
[736] Ibid at 22.
[737] Ibid at 3.

less onerous on third party importers.[738] This is a threshold that a complainant will likely be unable to meet. The requirement of necessity imposes a high standard that a measure must meet in order to be justified under this exception, but it is one that CBAM will likely be able to meet.

Article XX(g)

Relates to the *Conservation of Exhaustible Natural Resources*

There is no doubt that both the objective and rationale of CBAM is about sustainable development, as it embodies the goals and objectives of the Paris Agreement.

***Relates to* the Conservation of Exhaustible Natural Resources**

The relationship between CBAM and the objective of responding to climate change and promoting sustainability is strong. CBAM is expanding the domestic carbon pricing system that applies to domestic products to imports, to ensure that carbon leakage does not thwart domestic efforts to reduce GHG emissions and to encourage sustainable development and the use of renewable energy by countries outside of the EU, not just within.[739] Carbon leakage has been a major obstacle to successfully reducing GHG emissions within the EU and to successfully implementing climate policies more generally. CBAM largely eliminates this problem and climate ambition efforts are likely to have success in lowering GHG emissions and incentivizing technological innovation for sustainability.[740]

***Made Effective in Conjunction with* restrictions on domestic production or consumption**

CBAM, in conjunction with the EU ETS, imposes the same restrictions on domestic and imported products. In fact, the pricing system is based on the domestic auction system to ensure that there are no disparities in pricing between imports and domestic products.[741] It cannot be said that domestic products will be better treated than imported products. CBAM would likely be provisionally justified under both Article XX(b) and Article XX(g). The next step would be to determine whether CBAM meets the criteria of the Chapeau.

The Chapeau

CBAM has been implemented because the EU realizes the value and importance of trade. There is no arbitrary discrimination; the measure applies to imports based on certain criteria and if it is met, then it will not apply or it will apply at a lower rate. CBAM is in place to ensure, not that all importers pay the same rate for carbon emissions under CBAM, but rather to ensure that all importers are treated equitably, considering the price already paid in the country of origin. In the end, importers and domestic producers will have paid at the same rate according to the import

[738] Peter Van Den Bossche & Werner Zdouc, *The Law and Policy of the World Trade Organization: text, cases and materials,* 4th ed (Cambridge: Cambridge University Press, 2019) at 563-564.
[739] European Parliament, "European Commission Proposal for a Regulation of the European Parliament and of the Council Establishing a Carbon Border Adjustment Mechanism." COM (2021) 564 final, 2021 at 3.
[740] Ibid at 6.
[741] Ibid at 19-20.

or domestic product's actual emissions.[742] There is minor risk that CBAM will be regarded as a disguised restriction or seeking protection under Article XX(b) and (g) for illegitimate purposes.

Although the EU CBAM appears to treat countries' imports differently from one another and treat some countries' imports differently from domestic products, it exists to ensure that countries are paying at the same rate for carbon emissions as other countries and domestic producers. CBAM recognizes equivalent carbon pricing measures based on actual emissions in exporting countries. CBAM ensures that some producers are not paying twice for carbon emissions and others are not paying at all. Rather, every producer only pays once at the same rate as all other producers. It is based on the carbon emissions produced during production.[743] A strict carbon price that does not consider carbon pricing systems in other countries would violate the MFN and National Treatment obligation under GATT and that is not what CBAM does. It is likely that CBAM would be justified under both Article XX(b) and Article XX(g), if it were found to violate the MFN or National Treatment obligation under GATT.

6. Diplomatic and Multilateral Policy Options

A. Product Carbon Requirements

Countries can ban the sale of carbon-intensive products by introducing product carbon requirements (PCRs). The theory behind such requirements is that it will motivate companies to invest in switching to new clean production processes.[744] Existing policies could help design a PCR system.[745] Examples include: the CE marking system,[746] the Ecodesign Directive,[747] the Eco-Management and Audit Scheme,[748] and the EU Biofuels certification system.[749] From these examples, it is apparent that conformity with requirements has been successful in the past and can continue to be used to encourage companies to switch to clean production processes. However, any requirement needs proper oversight in order to maximize is chances of success.

The effectiveness of a PCR system requires that it also ban the sale of imports produced in a carbon-intensive way.[750] However, such an application would be controversial within the existing WTO system.[751] Whenever possible, PCRs should be based on, and reference, international standards.[752] The arguments for this include 1) that international standards reduce transaction costs, thus are beneficial to international trade,[753] and 2) this type of international

[742] Ibid at 11.
[743] Ibid at 11.
[744] Timo Gerres et al. "To ban or not to ban carbon- intensive materials: A legal and administrative assessment of product carbon requirements" (2021) 30:2 Review of European, Comparative & International Environmental Law at 249-250.
[745] Ibid at 251.
[746] Ibid.
[747] Ibid at 252.
[748] Ibid.
[749] Ibid at 252-253.
[750] Ibid at 250.
[751] Ibid.
[752] Ibid at 261.
[753] Ibid.

cooperation limits rent-seeking behaviour by reducing the risk of lobbying for national advantages.[754] PCRs are most likely to be covered under Articles I:1, III:4, and XI of the GATT as well as Articles 2.1 and 2.2 of the TBT Agreement.[755] Article I:1 of the GATT covers customs duties;[756] Article III:4 sets forth the National Treatment principle;[757] Article XI:1 governs quantitative restrictions on imports or exports;[758] and Articles 2.1 and 2.2 of the TBT Agreement relate to technical regulations on product characteristics and product production methods.[759] PCRs should be designed strategically to ensure compliance with these provisions.[760] However, if PCRs are found to be in breach of the GATT, they could still be justified under Article XX because they pursue environmental goals.[761] Such general exceptions do not exist within the TBT Agreement. However, it allows for a wide scope and must be read in light of its preamble.

A PCR system must avoid creating any unnecessary obstacles to trade through its conformity assessment procedures.[762] Procedures should not be any stricter than necessary.[763] This flexibility will assist in meeting the MFN and National Treatment principles.[764] International standardization would assist in limited trade obstacles.[765] This standardization will require the development of international climate standards for the most successful PCR system.[766] However, international cooperation must involve discussions with developing countries regarding their particular financial and trade interests.[767]

A final recommendation is that, if no international standards exist, WTO Member states should publish intentions to introduce technical regulations as early as possible.[768] The implementing Member should be clear about the environmental objectives and rationale for the measures, as well as the products that will be caught, so that trade partners and industries can prepare.[769] The implementing Member should also give opportunity for, and properly attend to, discussions of concerns of trade partners.[770] Finally, the implementing Member state should give ample time for producers to adapt their products and manufacturing processes.[771]

B. Climate Waiver

[754] Ibid.
[755] Ibid at 255.
[756] Ibid at 256.
[757] Ibid at 255.
[758] Ibid.
[759] Ibid at 256.
[760] Ibid at 254.
[761] Ibid at 260.
[762] Ibid at 261.
[763] Ibid.
[764] Ibid.
[765] Ibid.
[766] Ibid.
[767] Ibid.
[768] Ibid.
[769] Ibid.
[770] Ibid.
[771] Ibid.

A climate waiver is an agreement between WTO Member states that permits specific derogation from international trade rules in the collective against climate change. Climate waivers may be beneficial because there will likely be lengthy WTO dispute settlement processes flowing from the implementation of trade-restrictive, national measures against carbon leakage.[772] These processes will be especially long because they will confront an absence of relevant WTO jurisprudence.[773] In order to mitigate the effects of this absence, the first step for WTO Members is to agree upon a WTO climate waiver that includes compliance with certain trade rules necessary for national climate action measures. Agreeing to a waiver will require a few steps of coordination:

1. WTO Members must agree that establishing a climate waiver is better than simply 'waiting out' the inevitably lengthy dispute settlement process, which in itself could bring about further adverse effects on world trade;
2. Leaders on trade and on climate change must act collaboratively instead of independently;
3. The relationship between trade and climate change must be added to the WTO agenda;
4. WTO Members must request a collective waiver on multilateral trade agreements based upon "exceptional circumstance" provisions in response to climate change;
5. A WTO working group must frame and propose the form and content of a WTO climate waiver, even if it is only provisional;
6. A WTO group must then draft a waiver decision;
7. That waiver decision must then be adopted by the WTO Membership.[774]

A prospective WTO climate waiver includes provisions that enable national measures to account for four components. First, discrimination on the basis of carbon and other greenhouse gases emitted from the production of goods; second, non-discrimination on matters that would otherwise fall under the chapeau of GATT Article XX;[775] third, correspondence with the definition of a climate response measure according to the UNFCCC;[776] and fourth, support for trade restrictions by carbon markets and carbon clubs, trade disciplines on fossil fuel subsidies, and promotion of subsidies for both green technology and broader green innovation.[777] A waiver could also be an alternative to or complement an interpretive understanding, pursuant to paragraph 3 of Article IX of the GATT.[778] A waiver has the advantage of providing a high degree of legal certainty to a defined set of policies.[779] A disadvantage is that it must be enacted by consensus, whereas an interpretive understanding could take the form of an open plurilateral agreement.[780]

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[772] James Bacchus "The Case for a WTO Climate Waiver" (2017) Centre for International Governance Innovation, online (pdf): https://www.cigionline.org/sites/default/files/documents/NEWEST%20Climate%20Waiver%20-%20Bacchus.pdf
[773] Ibid.
[774] Ibid.
[775] General Agreement on Tariffs and Trade 1994, Art. XX, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1867 UNTS 187.
[776] UN General Assembly, *United Nations Framework Convention on Climate Change: Resolution/Adopted by the General Assembly*, 20 January 1994, A/RES/48/189.
[777] James Bacchus, "The Content of a WTO Climate Waiver", Centre for International Governance Innovation, 2018.
[778] Meléndez-Ortiz and Samans, supra note 472, at 50.
[779] Ibid.
[780] Ibid.

C. Climate Clubs and Free Trade Agreements

Many argue that complex climate change deal-making should be done in smaller groups known as 'clubs'.[781] This provides a forum for willing countries to participate in these deals and hopefully pushes reluctant countries to make more of an effort.[782] Small groups allow for complex deal-making but are also large enough that multiple countries can participate and enjoy gains.[783] Working out contentious issues surrounding carbon and trade is best done in a smaller group.[784] As well, they are flexible in coordinating policies and technological innovation amongst countries that account for the most technological change in the world economy.[785]

'Climate clubs' would be "partial and limited agreements" between small, like-minded countries that prioritize and enforce environmental measures through trade.[786] Environmental action would be enforced through preferential trade and incentives for members to the agreement, while imposing sanctions or restrictions on non-members.[787] The climate club will need to create a benefit that goes to the group, such as lower tariffs or environmental benefits, and excludes outsiders.[788] However, this idea would be in derogation of many WTO rules, and would first require WTO Member states to alter the organizational agreements to allow for this type of climate action.[789]

Climate clubs can have members that share a climate policy ambition and do not require legally binding membership.[790] Acting as policy entrepreneurs can "drive and enrich multilateral processes, as evidenced by the growing number of countries adopting net-zero targets".[791] Bargaining clubs have members with international status, power, and relevant capabilities. They facilitate progress in multilateral settings by easing negotiations and breaking any political deadlock.[792] Transformational clubs share a common goal which they achieve by creating club benefits for members and sanction members that are non-compliant.[793] Climate club agreements must run on incentives, rather than imposing new trade restrictions on non-club countries in order to avoid undermining trade liberalization.[794]

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[781] David G. Victor, "Strengthening the Global Trade System, the case for climate clubs" (2015) International Centre for Trade and Sustainable Development at 2.
[782] Ibid at 3.
[783] Ibid.
[784] Ibid.
[785] Ibid.
[786] Beatriz Leycegui & Imanol Ramírez, "Addressing Climate Change: A WTO Exception to Incorporate Climate Clubs" (2015) The E15 Initiative Think Piece at 1.
[787] Ibid.
[788] David G. Victor, "Strengthening the Global Trade System, the case for climate clubs" (2015) International Centre for Trade and Sustainable Development at 3.
[789] Beatriz Leycegui & Imanol Ramírez, "Addressing Climate Change: A WTO Exception to Incorporate Climate Clubs" (2015) The E15 Initiative Think Piece at pg 1.
[790] Robert Falkner, Naghmeh Nasiritousi & Gunilla Reischl (2021): Climate clubs: politically feasible and desirable?, Climate Policy at 3.
[791] Ibid at 6.
[792] Ibid at 3.
[793] Ibid.
[794] Beatriz Leycegui & Imanol Ramírez, "Addressing Climate Change: A WTO Exception to Incorporate Climate Clubs" (2015) The E15 Initiative Think Piece at 4.

Ideally, multilateral agreements would establish effective commitments to environmental priorities.[795] However, efforts toward this ideal solution have been unsuccessful and are unlikely to be successful anytime in the near future.[796] This disappointing reality leads to the strategic use of 'climate clubs' in the meantime.[797] There are two alternatives for the future of the multilateral trading system: 1) coalitions within the WTO creating open-to-accession plurilateral agreements; or 2) forward-leaning agreements negotiated outside the WTO, which become templates for the multilateral rules.[798] Climate clubs can be inserted into each alternative.

Creating open plurilateral agreements would promote inclusivity since Members could more actively participate in shaping agreements.[799] Due to the diversity of WTO Members, a wide variety of perspectives would be heard. Since such a coalition is formed within the auspices of WTO, there is an experienced Secretariat already in place to support negotiations, and there is a dispute settlement system in place to enforce binding commitments. However, WTO negotiations would be slow because of procedural requirements, policy arguments, and large membership. As well, the consensus rule may bring in unrelated issues, outside parties, and issues of non-discrimination under the MFN and National Treatment obligations

If the WTO does not move multilaterally towards climate change measures, countries can create their own plurilateral solutions. Open plurilateral agreements are the most practical way forward for the WTO, so that there remains a coherent venue for negotiations, especially for issues that affect the globe, such as climate change.[800] With global problems, it is impractical for *all* countries to deal multilaterally with these issues. There is a greater chance of success if groups of like-minded countries band together to create their own solutions. The multilateral system that is currently in place evolved from the GATT to the WTO to meet changing global needs nearly 30 years ago. To meet the needs of the 21st century, it is time for the WTO to embrace open plurilateral agreements negotiated within the WTO.

The complex and differing amendment procedures for each of the various agreements under the WTO pose complex obstacles for making trade rules more climate focused.[801] With this sentiment in mind, WTO Members should establish a general, permanent exception from the MFN principle, allowing preferential treatment agreements between climate club members.[802] This sort of exception would be inspired by previous WTO exceptional provisions, such as Article XXIV of the GATT, which allows countries to create free trade agreements deviating from WTO non-

[795] Ibid at 1.
[796] Ibid.
[797] Ibid.
[798] CSEND, "Plurilateral Agreements: Key to solving impasse of WTO/Doha Round and basis for future trade agreements within the WTO context" online (pdf): https://www.wto.org/english/forums_e/ngo_e/csend_plurilateral_agreements.pdf
[799] Peter Van den Bossche and Werner Zdouc, *The Law and Policy of the World Trade Organization* (United Kingdom: Cambridge University Press, 2018) at 674-5.
[800] Ibid at 674-5.
[801] Beatriz Leycegui & Imanol Ramírez, "Addressing Climate Change: A WTO Exception to Incorporate Climate Clubs" (2015) The E15 Initiative Think Piece at 2-3.
[802] Ibid at 3.

discrimination rules, and the 1979 decision to provide differential and favourable treatment to developing countries (the Enabling Clause).[803]

There are two possible scenarios for passing such an exception. Under the first option, it could be a formal amendment to the WTO legal texts regarding the MFN principle.[804] Under the second option, it could be enacted as a new legal text that provides for an exception to the MFN principle.[805] Although both would require WTO Member consensus for the process itself, it would be a one-time occurrence.[806] Furthermore, the complexity of negotiating the actual details of the substantive climate measures would be simpler because they would be smaller negotiations between climate club members.[807]

The exception for climate clubs would require strict standards to justify its deviation from the MFN principle.[808] A minimum standard of environmental contribution must be set and explicitly defined, so that measures can be analyzed and compared with those of other members.[809] Such accuracy is key to enforcing commitments and avoiding strategic abuse by countries seeking trade benefits without real environmental action.[810] Additionally, climate clubs should establish provisions for themselves similar to the chapeau in Article XX.[811] Lastly, disputes relating to measures adopted by climate clubs should fall under the authority of the WTO Dispute Settlement Body so that Panels and the Appellate Body can determine whether the club is functioning within the authority of its exception.[812] It would be especially beneficial if a special and expedited procedure could be designed for climate club specific matters.[813]

Another form of climate club is a green materials club for energy intensive industries that aims to adopt green industrial policies for a "deep decarbonization" of energy intensive industries as part of the global climate policy framework (UNFCCC).[814] The green material club's foundation is based on policies that promote high levels of green legislation, which allows members to avoid tariffs.[815] To establish a green materials club, the starting point would be a small number of parties that already have the goal of decarbonizing their energy intensive industries and want to become green industry leaders.[816] Next is the "entrenchment" of green clubs. Entrenchment is accomplished when green visions are followed up with real investments and research and

[803] Ibid at 4, 5.
[804] Ibid at 4.
[805] Ibid.
[806] Ibid.
[807] Ibid.
[808] Ibid at 3.
[809] Ibid.
[810] Ibid.
[811] Ibid at 4.
[812] Ibid.
[813] Ibid. See also Max Åhman, Marlene Arens & Valentin Vogl, *International cooperation for decarbonizing energy intensive industries -Towards a Green Materials Club A working paper on sectoral cooperative approaches* (2020) at 2.
[814] Max Åhman, Marlene Arens & Valentin Vogl, *International cooperation for decarbonizing energy intensive industries -Towards a Green Materials Club A working paper on sectoral cooperative approaches* (2020) at 2.
[815] Ibid.
[816] Ibid at 18.

development.[817] Following entrenchment, green clubs require expansion.[818] Expansion requires clubs to attract more countries and industries to join. The major incentive to join a green club is the avoidance of BCAs. If countries systematically adopted green legislation, the energy intensive industries would emit less carbon, resulting in BCAs becoming redundant.[819]

For a green materials club to be effective, at least two requirements must be met. First, there must be a "commitment to the long-term target of developing energy intensive industries with a net-zero carbon footprint that is compatible with the Paris Agreement."[820] Second, there must be a commitment by all parties to work on transparency and accountability on carbon footprints from targeted sectors.[821] In sum, the idea of a green materials club is to promote a "winning coalition" of countries that jointly implement green industrial policies.[822] These green industrial policies would eventually lead to the deep decarbonization of energy intensive industries.

[817] Ibid.
[818] Ibid.
[819] Ibid at 3.
[820] Ibid at 20.
[821] Ibid.
[822] Ibid.

7. Preferential Treatment of Developing Countries and BCAs

The establishment of the WTO highlighted the need for united "positive efforts designed to ensure that developing countries, and especially the least developed among them, secure a share in the growth in international trade commensurate with the needs of their economic development."[823] Notably, the majority of WTO Members are developing and least developed countries. The unique needs of such countries are often included in the focal point of the work of international organizations such as the WTO.[824] This is reflected by the "special and differential treatment" (SDT) given to developing countries.

SDT includes a set of rules and policy options that are used to measure and respond to risks and vulnerabilities that developing countries face in international trade. Through promoting international trade, this favourable treatment is intended to reduce barriers faced by developing countries. Enabling all WTO Members to contribute to global trade to the extent of their capabilities is the underlying rationale behind special and differential treatment.[825] It is anticipated that the favourable treatment a developing country receives will decline as it progresses economically considering their initial differential and favourable treatment regarding trade tariffs and other barriers.[826] This sunset-type principle is well known, yet it is not clearly defined. The development status of WTO Members does not necessarily fall into a neat binary classification of either developed or developing. Therefore, SDT should be flexible and be adapted to each situation. A country's SDT is meant to adjust simultaneously as the country's development and economic status evolves; however, this is not always the case practically.[827]

Currently, SDT has three main elements: market access, market protection, and technical assistance.[828] Market access allows developing countries to export to developed countries at preferential rates thereby supporting economic development. Market protection essentially acknowledges that developed countries should not expect equivalent access or concessions in return when they give preferential treatment to developing countries. Technical assistance recognizes that countries with trade-related knowledge and resources should share it and should financially support those who do not.

A major problem with SDT stems from the fact that developing countries are not defined in the context of the WTO. As a result, Members self-declare as developing, thereby deciding their

[823] "Pursuing The Development Dimension in WTO Rule-Making Efforts", online: *Norgesportalen* <https://www.norway.no/en/missions/wto-un/nig/latest-news/wto-world-trade-organization/pursuing-the-development-dimension-in-wto-rule-making-efforts/>.
[824] Ibid.
[825] Ibid.
[826] WTO, Differential and More Favourable Treatment Reciprocity and Fuller Participation of Developing Countries.
[827] "Pursuing The Development Dimension in WTO Rule-Making Efforts", online: *Norgesportalen* <https://www.norway.no/en/missions/wto-un/nig/latest-news/wto-world-trade-organization/pursuing-the-development-dimension-in-wto-rule-making-efforts/>.
[828] Frank J Garcia, "Beyond Special and Differential Treatment" (2004) 27:2 *Boston College International and Comparative Law Review* 291-317.

own development status. Countries in various stages of development can in theory receive similar treatment to those that are much poorer, which can undermine the initial rationale for SDT. Furthermore, many developing countries contend developed countries are unfairly advantaged by the rules of the multilateral trading system. This advantage translates to hollow SDT commitments from developed countries. Developing countries complain that they have not received the benefits that they thought they had negotiated in the Uruguay Round, which resulted in the establishment of the WTO in 1995. These divisions have only deepened over time, with tensions growing even stronger now that several developing countries are serious economic rivals and competitors of developed countries.

The WTO has jurisprudence that addressed SDT. The case of *European Communities (EC) – Tariff Preferences* held that it is possible to include non-discriminatory conditions in GSP schemes.[829] By doing so the Appellate Body reaffirmed paragraph 3(a) of the Enabling Clause, placing constraints on conditions.[830] If countries are unable to fulfil these conditions, they will lose out on additional preferential market access. India argued that the "respective needs and concerns at different levels of economic development" of different countries should be taken into consideration as stated in the Preamble to the WTO Agreement.[831] In most cases, the SDT provision did not assist the developing countries that invoked it in the dispute. This is mainly because SDT provisions are ambiguous and do not clarify how, why, when, and against whom they should be used. SDT should be updated to reduce the gap between theory and practice (that which is currently taking place in the multilateral trading system). Poorly drafted SDT provisions do not benefit the multilateral system or developing countries.[832]

It is important to ensure that a BCA complies with the rules and principles of international climate change law, not just WTO law.[833] It will be difficult to completely ensure compliance because the WTO provides strict guidelines in the GATT and other WTO agreements. However, as a general rule, preferential treatment should be provided to developing countries.[834] Potential examples include: BCAs imposed by developed countries could exempt developing countries from any requirements to adopt the same or comparable regulatory programs or from requirements that similar technology or regulatory standards be used; groups of developing countries, LDCs or countries with *de minimis* greenhouse gas emissions could be altogether exempted from the BCA; differential benchmarks could be used to calculate the adjustment level; or revenues from BCAs could be channelled back to developing countries to financially support climate change efforts in these countries.[835]

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[829] Appellate Body Report, *European Communities – Conditions for the Granting of Tariff Preferences to Developing Countries*, WT/DS246/AB/R, adopted 20 April 2004, DSR 2004:III, p 59.
[830] Ibid at 72.
[831] Appellate Body Report, *United States – Import Prohibition of Certain Shrimp and Shrimp Products*, WT/DS58/AB/R, adopted 6 November 1998, DSR 1998:VII, p. 2755
[832] Pallavi Kishore, "Special and Differential Treatment in the Multilateral Trading System" (2014) *Chinese Journal of International Law* at 392.
[833] Michael Mehling et al, "Designing Border Carbon Adjustments for Enhanced Climate Action" (2019) 113:3 *Am J Intl L* 433 at 472.
[834] Ibid.
[835] Ibid at 472-473.

It is a fundamental principle of international law that WTO Members act within their jurisdiction. The WTO struggles with moral externalities and similar issues are prevalent in environmental litigation.[836]

[836] Henrik Horn & Petros C Mavroidis, "To B(TA) or not to B(TA)? On the Legality and Desirability of Border Tax Adjustments from a Trade Perspective" (2011) 34:11 *The World Economy* 1911 at 1922-1923.

8. Green Procurement

A. The Canadian Context

Public Services and Procurement Canada (PSPSC) purchases goods and services on behalf of the Government of Canada. This department manages the procurement of approximately $16.6 billion of goods and services per year, and approximately 52% goes to small and mid-sized Canadian businesses.[837] The Government of Canada's "Policy on Green Procurement" outlines how procurement can be managed to better the environment. It relies on the federal government's substantial market influence to generate greater demand for environmentally preferable goods and services.[838]

Green procurement, broadly, is about choosing goods and services with a reduced environmental impact. To achieve this under the "Policy on Green Procurement", the federal government promotes environmental sustainability by achieving value for money. To do this, it considers environmental performance as a key factor for goods, along with price, availability, quality, and performance.[839] In the process, it supports the Canadian economy by creating a new market for innovative products and services that benefit the environment.[840]

In 2018 the Treasury Board of Canada Secretariat created Canada's Centre for Greening Government. The Centre is responsible for the federal Greening Government Strategy, which is committed to the green procurement of goods and services to aid in a transition to a less carbon-intensive economy.[841] The Centre's Green procurement strategy includes criteria that addresses GHG emissions reduction, a transition to sustainable plastics, and broader environmental benefits. Additionally, it incentivizes major suppliers to adopt targets in line with the Paris Agreement and encourages companies to disclose their GHG emissions and environmental performance information. It also promotes tools and training for public service employees on green procurement.[842]

The Government of Canada's green procurement has been successful so far, as illustrated by the 2021-2022 Departmental Plan by PSPC.[843] The Centre found that PSPC achieved a 58% reduction in GHG emissions, surpassing the Federal Sustainable Development Strategy target of a

[837] Public Services and Procurement Canada. "Core Responsibilities: Planned Results and Resources, and Key Risks – 2021 to 2022 Departmental Plan" Canada.ca. 2021.
[838] Government of Canada "Policy on Green Procurement" Canada.ca. 2018. https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=32573
[839] Ibid.
[840] Ibid.
[841] Public Services and Procurement Canada. Policy and Guidelines – Supply Manual – Chapter 1 – Environmental Considerations – 1.60.5. Centre for Greening Government. Canada.ca. 2021. (https://buyandsell.gc.ca/policy-and-guidelines/supply-manual/section/1/60/5)
[842] Government of Canada "Policy on Green Procurement" Canada.ca. 2018. https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=32573
[843] Public Services and Procurement Canada. "Core responsibilities: Planned Results and Resources, and Key Risks – 2021 to 2022 Departmental Plan" Canada.ca. 2021. https://www.canada.ca/en/treasury-board-secretariat/services/planned-government-spending/reports-plans-priorities.html

40% reduction by 2030.[844] Going forward, the PSPC is committed to continuing to take effective action on climate change in accordance with the Federal Sustainable Development Strategy and the Government of Canada's Greening Government Strategy.[845] They have broad goals to transition to net-zero carbon, climate-resilient operations, and reduce waste and biodiversity impacts.[846] Specifically, a major goal under the Departmental Plan is to reduce the use of single use plastics this coming year.[847]

The cardinal rule in the WTO's *Government Procurement Agreement* (GPA) is that standards or technical regulations "…shall not be prepared, adopted or applied with a view to, or with the effect of, creating unnecessary obstacles to international trade".[848] While a possible justification could exist under the general exceptions provisions of the GPA that mirrors Article XX, any preference based on PPMs cannot be presumed.[849] Cottier et al. have raised the issue that GPA Article XXIII does not contain the equivalent of the words "relating to conservation of natural resources," as found in GATT Article XX(g).[850] Further, it is important that this ambiguity be clarified, and for provisions to be written that expressly permit the promotion of clean energy goods and services by public purchases.[851] On a more positive note, the recently revised GPA specifies that sustainable procurement should be one of the subjects for future GPA negotiations.[852]

B. The International Context

The Intergovernmental Panel on Climate Change favourably regards green government procurement.[853] Thus, Canada (both federally and provincially) can and should include carbon content and other environmental requirements as part of their government procurement process and should do so consistently with GATT Article XX. One issue identified by the Intergovernmental Panel on Climate Change is that green government procurement may act as a mechanism that discriminates against foreign suppliers and favours domestic suppliers, in de jure or de facto ways.[854] Therefore, the Intergovernmental Panel on Climate Change identified that transparency in clean energy procurement policies is imperative. This is to ensure that countries importing foreign goods and services are given the opportunity to clearly understand criteria and requirements, so they can be competitive.[855]

[844] Ibid.
[845] Government of Canada, "Core Responsibilities: Planned Results and Resources, and Key Risks 2021 50 2022 Departmental Plan", (2022) online: <https://www.tpsgc-pwgsc.gc.ca/rapports-reports/pm-dp/2021-2022/pm-dp-eng.html>.
[846] Ibid.
[847] Public Services and Procurement Canada. "Core Responsibilities: Planned Results and Resources, and Key Risks – 2021 to 2022 Departmental Plan" Canada.ca. 2021 at 15.
[848] Meléndez-Ortiz and Samans, supra note 472, at 25.
[849] Ibid.
[850] Ibid.
[851] Ibid.
[852] Ibid.
[853] Ibid.
[854] Ibid.
[855] Ibid.

9. Green Investment

A drastic reduction in CO_2 emissions was an unexpected consequence of the COVID-19 pandemic. However, this will have a negligible impact on the long-term trajectory of climate emissions, because as we have already seen, as economies re-opened, emissions increased.[856] As a result, prominent organizations and government officials including the International Energy Agency and the Prime Minister of the United Kingdom called on the world to pursue a green recovery model that "builds back better". This goal aims to simultaneously cut CO_2 emissions while boosting the economy.[857] Given that the pandemic delayed COP26, where the Paris Agreement was set to be reviewed, new environmental policies to "build back better" are that much more important to make up for lost time.[858]

Government recovery interventions range from direct grants or tax incentives to state-backed loan guarantees or subsidized public loans. It is reported that thus far "potentially damaging contributions" dominate the stimulus packages of 21 major economies.[859] These stimulus packages may be damaging in the sense that little of the money is allocated toward climate causes. Another common issue is that the stimulus spending comes in phases, whereby the first phase is focused on keeping people employed and businesses operating, and only the later phases focus on green recovery.[860]

A. National Green Recovery Initiatives

Canada developed a large stimulus plan to reduce CO_2 emissions since the COVID-19 spread. This plan includes approximately $5.98 billion allocated toward energy efficiency, renewable electricity, and public transport.[861] Canada also announced a 3-year $7.5 billion infrastructure plan, 60% of which is assigned to green projects including home retrofits, clean energy projects and zero emission buses. [1434]

Canada's trading partners around the world are also taking up green recovery initiatives that we can draw inspiration from. For instance, President Joe Biden of the United States tried to introduce the American Rescue Plan for clean energy and climate change mitigation, shifting focus from the initially proposed Build Back Better bill that focused specifically on infrastructure.[862] The Plan included a federal agency efficiency and clean energy standard that can be used to set the US on a path of their goal of decarbonized electricity by 2035.

European countries are also pursuing green investment. The Swedish government has put forward extensive government credit guarantees for green investments which will amount to $5.6

[856] Simon Evans and Josh Gabbatiss, "Coronavirus: Tracking how the world's 'green recovery' plans aim to cut emissions" (16 June 2020), online: Carbon Brief <https://www.carbonbrief.org/coronavirus-tracking-how-the-worlds-green-recovery-plans-aim-to-cut-emissions>.
[857] Ibid.
[858] Ibid.
[859] Ibid.
[860] Ibid.
[861] Ibid.
[862] Ibid.

billion over the coming the next three years.[863] Sweden is implementing a green tax shift that will discourage the use of fossil fuel powered vehicles by adjusting taxable benefit rates for cars. This is expected to be approved by Parliament towards the end of the year.[864] Norway has a plan for a green future that supports companies to adopt low-emissions technologies, a new 'green research platform', green shipping, and increase the usage of wind power and hydroelectricity.[865] To get its citizens back to work in a sustainable manner, Ireland adopted a July Jobs Stimulus that includes over $100 million for active travel, public transportation, and renovation of infrastructure that is marked to be a "fundamental change in the nature of transport in Ireland".[866] Italy and France are focusing on the promotion of sustainable transportation methods. Both countries have rolled out green recovery strategies that targets the automobile and aviation sectors, with specific funds set aside for the subsidization of electric cars.[867] Lastly, the Danish and Finnish governments are committed to significantly cutting emissions for their countries. Denmark's target is to reduce emissions by 70% from 1990 levels and becoming an exporter of clean energy by 2030,[868] and Finland's pandemic recovery package includes the objective to become the first carbon-neutral welfare state in the world.

B. Multilateral Trading System and Investment

As the only international organization with strictly legally binding instruments, the WTO has the potential to have a significant impact on mitigating climate change due to its single undertaking model.[869] Relatedly, there are five key issues at the interface of international trade and clean energy policy that can affect green investment. These issues include tariffs, clean energy incentives, subsidies and local content measures, services, government procurement policies, and standards and certification.[870] These have been analyzed in previous parts of the report extensively. Below is a recap on components that can affect green investment.

I. Tariffs

The World Bank estimates that a removal of tariffs in wind, solar, clean coal, and efficient lighting would increase the trade volume by 7.2% and removing non-tariff barriers for the same categories would increase trade volumes by 13.5%.[871] This supports the point that tariffs on clean energy goods are a prominent barrier that can be addressed to help promote 'greener products'. However, tariffs reduction in this area is not simple.[872] This is because there is not a universal way to classify products produced with clean energy under the Harmonized System (HS) nomenclature. Therefore, countries must investigate products being imported, whether they were produced with clean energy or not.[873] Despite this problem, studies have indicated that tariffs still do not pose the

[863] Ibid.
[864] Ibid.
[865] Ibid.
[866] Ibid.
[867] Ibid.
[868] Ibid.
[869] Meléndez-Ortiz and Samans, supra note 472, at 27-28.
[870] Ibid at 4.
[871] Ibid at 19.
[872] Ibid at 18.
[873] Ibid.

greatest obstacle to importing clean energy products, and that non-tariff measures may be more difficult to address.[874]

II. Clean Energy Incentives, Subsidies and Local Content Measures

Clean energy incentives come in a variety of forms including grants, capital subsidies, soft loans, and tax-credits.[875] Clean energy is currently not competitive with fossil fuel-based energy sources, so a form of support for clean energy may be required until it attains a 'grid-parity' of competitiveness.[876]Trade conflicts can arise if the green energy subsidy has a trade-distorting effect on another country's industries.[877] However, trade disputes regarding clean energy have most commonly been the result of 'local content requirements' (LCRs), which mandate the use of only locally-sourced materials.[878] LCRs by themselves have very little effect on trade in clean energy goods unless there is a viable clean energy sector, meaning, they have to be linked to an incentive scheme for clean energy generation.[879] LCRs are prohibited under the TRIMS Agreement. However, they are still used through temporary exemption, particularly by developing countries.[880] A potential solution to limit the use of LCRs could be a form of time-limited, non-renewable waiver for certain countries, and perhaps regional or plurilateral variants of LCRs set at a low local content percentage, to dilute its protective impacts.[881] It is of note that once LCRs become an expectation of local businesses, the withdrawal of government support will likely be met with fierce resistance, and the LCRs themselves may do little to increase competitiveness.[882]

III. Services

An important consideration for liberalizing clean energy services within the WTO system is to look at ways to re-classify them under the GATS.[883] The classification of environmental services is based on Central Product Classification categories that may not adequately capture several clean energy services.[884] An important consideration is to ensure that each schedule is coherent, avoids overlap, and the scope of the commitments are defined clearly and concisely. There is a lack of specific reference to services related to renewable energy. This arguably needs to change. Clean energy services are often provided in an integrated manner with trading goods. Negotiations on trade liberalization of these two distinct concepts should be carried out separately.[885] However, it is important to maintain a level of coordination between negotiations surrounding trade services and negotiations surrounding trade goods. This will ensure a coherent outcome on clean energy services and green investment overall.[886]

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[874] Ibid.
[875] Ibid at 20.
[876] Ibid.
[877] Ibid.
[878] Ibid.
[879] Ibid.
[880] Ibid.
[881] Ibid.
[882] Ibid.
[883] Ibid at 22.
[884] Ibid.
[885] Ibid at 24.
[886] Ibid.

A significant development within the WTO system is emerging as key countries have agreed to a plurilateral International Services Agreement (ISA). The ISA intends to "provide a new platform where the parties could work to build stronger international consensus on new and improved rules to address emerging issues."[887] Due to the recent nature of this agreement, it remains to be seen whether this will provide a boost to liberalization of clean energy services globally.

IV. Clean Energy Equipment Standards and Certification

The standards set for various products are very important non-tariff measures that impact international trade when it comes to increasing clean energy and green investment.[888] Technical standards provide for the safe practice and reliable performance of clean energy equipment.[889] Article 2.2 of the TBT Agreement requires that "technical regulations are not prepared, adopted or applied with a view to, or with the effect of, creating unnecessary obstacles to international trade."[890] The TBT Agreement also encourages WTO Members to base national regulations, or parts of these regulations, on established minimum international standards. Such international standards are presumed "not to create an unnecessary obstacle to international trade."[891] However, there are some practical issues regarding trade. First is the diversity of testing procedures and requirements that are specific to countries. Second is the diversity of product requirements in different countries due to varying local conditions such as climate and electrical grid codes. Last is the challenge enabling standards that are set to keep pace with and not discourage new innovative clean energy products.[892]

V. WTO Process-Related Issues

The WTO is undoubtedly facing new challenges and undergoing changes. Thus, any change the WTO makes towards advancing climate goals will be significant politically and economically because it brings together all GHG emitters under a single set of rules.[893] However, since the WTO operates under a single undertaking framework, it will likely not easily advance in negotiations quickly.[894] Progress thus may need to be incremental with a focus on easily obtainable reforms. Notably, fine-tuning is often simpler and more efficient than a rapid overhaul.[895]

Additionally, the number of international trade agreements that govern the issue of clean energy, such as the GATT, the GATS, the SCM Agreement, and many more, leads to a slightly fragmented approach in viewing trade issues for clean energy goods and services.[896]

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[887] Ibid.
[888] Ibid at 26.
[889] Ibid.
[890] Ibid.
[891] Ibid.
[892] Ibid.
[893] Ibid at 27.
[894] Ibid.
[895] Ibid.
[896] Ibid.

There appears to be a lack of systematic collection or compilation of measures that affect the clean energy sector.[897] Some experts argue that the best solution to this fragmentation problem is a Framework Agreement on Energy.[898]

VI. Negotiating Market Access Challenges in Clean Energy Goods and Services

In the near future, there will likely be a focus on negotiating market access when it comes to clean energy goods and services. Discussions are already beginning that concern faster progress in forums like the APEC where Members agreed to liberalize tariffs on 54 products to 5% or less.[899] The WTO should examine the ways and processes followed by APEC to see whether something could be borrowed to catalyse progress. Moreover, the WTO could also explore ways in which the results of the APEC Agreement could be built upon going forward. Plurilateral agreements could hold lessons for market challenges and agreements that are signed could still be extended to all WTO members.[900] However, other agreements, such as the GPA, provide benefits only to signatories. The procedural steps, legality, and pros and cons of such agreements within, and possibly outside, the WTO will need to be carefully evaluated. In particular, if agreements go beyond market access and enter the 'rules' arena.[901]

C. A Sustainable and Positive Energy G20 Agenda

Many recognize and emphasize that we are at a critical inflection point, and if we continue down this path, humans may no longer be able to adapt to our surroundings and perish.[902] Therefore, urgent steps are required at all levels to promote a sustainable shift. For instance, the G20 countries, to which Canada is included, should help address these challenges more directly outside of other international organizations. The G20's position on this issue is inconsistent. The objectives of Members are both compatible and incompatible with the UN's SDGs, signalling a lack of commitment and consistency in addressing a sustainable transition. These inconsistencies need to be corrected. Current national policies, and the avoidance of enacting national policies, which perpetuate fossil fuel energy systems are required.[903] This section addresses these issues across three themes: 1) an agenda of what the G20 should focus on, 2) examples of perverse policies to be avoided, and 3) a critique of the G20 principles adopted in 2014.

The G20 is still promoting investment into environmentally harmful technologies and industries, thus hindering the development of safer, cleaner, and cheaper alternatives. For instance, the focus on fossil fuels and nuclear plants is outdated and leading to excessive costs and wastage.

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[897] Ibid.
[898] Ibid.
[899] Ibid.
[900] Ibid.
[901] Ibid.
[902] An Energy Agenda for the G20 as if the Future Mattered – R. Andreas Kraemer
[903] R. Andreas Kraemer, "An energy agenda for the G20 as if the Future Mattered" Heinrich Boll Foundation (Washington DC) at 1.

It is instead possible to equip smaller and rural communities with clean, safe, and renewable energy in smart grid applications.[904]

Notably, the cost of saving energy is often lower than producing energy. Ensuring energy efficiency is the cheapest form of energy services. Therefore, improving this is an effective strategy. Power supply systems around the world are designed to provide electricity for the highest historical demand. The system cost is then determined by the highest demand peak observed. This curve needs to be flattened by providing incentives for users to shift their demand in time by a few hours.[905] Therefore, the G20 should embrace, facilitate, and accelerate energy transformation. These will all take place at various stages depending on the country. Some countries will require the construction of new energy systems while others will have aging energy systems that will require reconfiguration. These transformations will all likely happen at the same time and the G20 should focus on improving the resilience of other sectors as this transformation occurs.[906] An emerging technology that is promising is the conversion of power to gas or power liquid. The products are gaseous or liquid fuels that can be integrated in existing infrastructure that is a legacy of fossil oil and gas industries.[907]

Another key area of improvement for the G20 is to increase the competitiveness of sustainable alternatives, especially in distributed power generation (prosumers). Most of the world's power is provided by a monopoly or oligopoly of companies that control the market. Thus, increasing competition is an obvious avenue to facilitate lower carbon, sustainable energy systems. The renewable provider would need automatic connection to the grid. Priority needs to be given to renewable power; we must only be using non-renewable if renewable options are not sufficient. With the market competitiveness more evenly divided, energy consumers may also become energy producers, which is known as a "prosumer". Prosumers can switch between their roles as consumers and producers and help stabilize the market and flows of the grid.[908]

The G20 should also prioritize phasing out outdated and harmful technologies and industries. For instance, nuclear power is too costly and slow to build with high risks, thus it should be avoided. This can be done by diverting funds elsewhere and denying industry subsidies. The money that is going into nuclear power can be more effectively used to promote renewable energy sources instead. Similarly, the fossil fuel industry should also be phased out. This can be done by phasing out fossil fuel subsidies, previously discussed in another section of this report. In this manner, each G20 Member can act alone in reducing or phasing out fossil fuels. There are benefits from cooperation and coordination as these can speed the removal of distortions to international competition. The G20 is arguably a good place to address the economic consequences of the 'fossil bubble'. One consequence of this is that private ownership of the resources as publicly traded companies' assets are going to be reduced. The second is that the built assets used to handle fossil fuel infrastructure will also be essentially worthless. The bursting of this bubble needs to be anticipated and mitigated by the G20.[909]To ensure that non-renewable resources found in the

[904] Ibid at 13.
[905] Ibid at 14.
[906] Ibid.
[907] Ibid at 18.
[908] Ibid.
[909] Ibid at 20.

ground are not used in harmful ways, they should be retired and transferred into a public trust and protected from extraction. A transition period needs to be as short as possible to limit total carbon volume that would be burned. G20 countries willing to move forward with this should do so in enhanced cooperation that should be open to laggards to join later.[910] Another viable solution for sustainable development and a green recovery beyond limiting GHGs and better energy systems is the sequestration of carbon from the atmosphere. This requires managing natural ecosystems by reforesting, protecting mangroves, grassland management, protecting carbon sequestering wetlands, protection, and revitalization of underwater kelp. The G20 should cooperate to give value to ecosystem services of this kind and to adopt policy principles.[911]

Although many positive changes will arise as a result of a sustainable G20 agenda, there are also challenges and risks. For instance, the notion of mega-projects: instead of focusing on such projects for economic purposes, government investment should be organized not for projects but rather for programs that facilitate multiple projects. The current framing of investment facilitation in the G20 does not adequately address the possibilities of program financing as an alternative to large-project financing.[912]Action could focus on energy collaboration with a view of creating well functioning, open, competitive, efficient, stable and transparent energy markets that promote energy trade and investment.[913]

[910] Ibid at 21.
[911] Ibid at 22.
[912] Ibid at 27.
[913] Ibid at 30.

10. Concluding Remarks

Human beings are facing perhaps the single greatest threat to our existence since the height of the cold war. Climate change will soon affect every single aspect of our lives. Financial crises and COVID-19 will pale in comparison to the devasting effects of this existential threat.

Traditional approaches to climate change have proven unsuccessful. This report suggests an approach which uses international law, international trade, and domestic policy to combat the disaster we are facing. BCAs offer a solution which hits at the heart of the issue: overconsumption and lack of foreign regulation. Where carbon pricing may curtail issues at home, climate change does not care where the emissions come from nor where the emissions go. Carbon leakage ensures that domestic centered policies will have little to no effect on a global scale, or even a domestic scale. BCAs seek to address this crucial error in carbon pricing.

BCAs are not illegal if implemented correctly. This report proposes that while the principle of sovereignty is important, domestic policies become international matters once those policies go beyond the borders of the state. Emissions go beyond state borders. BCAs combat these emissions. As such, utilizing BCAs to combat emissions is within a province's power.

The Paris Agreement sought to combat climate change through a declaration of reduction of greenhouse gas emissions by 2050 and specific targets set by each country to attain this goal through NDCs. The Paris Agreement does not create sweeping obligations; however, the Agreement does create specific obligations under specific provisions. NDCs represent one such obligation. NDCs reflect the states personal goals for combating climate change. These goals must be implemented domestically, which includes action from provinces. However, there are few obligations that Canada or New Brunswick must follow on the international stage.

When nations and provinces implement carbon pricing, they send a signal to the international market that there is a change in market conditions. Carbon pricing comes in the form of carbon taxes, performance standard systems, and cap-and-trade systems. Provinces must consider the Canadian legal framework, must be clear and flexible in their policies, and must take into consideration the Indigenous communities of Canada. BCAs tax goods on entrance into Canada to adjust the price to be equivalent to the Canadian counterparts, which are subject to their own carbon pricing. This combats carbon leakage. However, the primary focus must remain the effective pricing of carbon emissions. The revenues from BCAs can be used for climate policy incentives, export rebates, and climate change solutions.

BCAs focus on either production or consumption. Production is based on fossil fuels used during the making of the product, while consumption is based on the fossil fuels emitted when the product is used. These two strategies are both legitimate and must be used based on context. Once determined, the measures must find a way to calculate these numbers accurately. In all three, the objective is to extend a domestic carbon pricing scheme to traded goods. Measures must be clear, authentically aimed at emissions reductions, consistent, and persuasive.

BCAs must be compatible with WTO law, and the GATT specifically. MFN treatment requires that similarly situated products imported from different WTO member countries must be

subject to the same treatment. National Treatment also requires that domestic goods cannot be treated more favourably than imported goods. Therefore, BCAs must have the same impact on all imports of similarly situated products and must be equal to or lower than the domestic carbon tax on domestically produced products. If the foreign product has already been subject to a carbon tax in its country of origin, then it should be exempt from BCAs, due to the WTO prohibition on double taxation.

Article XX of the GATT accounts for the fact that trade liberalization may conflict with important societal values. Article XX(g) allows for exemptions to WTO rules for measures relating to the conservation of natural resources. Therefore, even if BCAs were found to be incompatible with WTO law, they may still be permitted under this exception. The measure must be implemented in conjunction with restrictions on domestic production and consumption, and any revenue generated from BCAs must be spent in a way that supports their environmental objective.

BCAs may also be justified under Article XX(b) of the GATT, as a measure "necessary to protect human, animal or plant life or health." The measures must be designed and necessary for the protect the life or health. The measures must be connected to the objective in an illustratable way and the protection must not outweigh the restrictiveness of the BCA.

The Chapeau of article XX ensures that the application of provisionally justified measures do not constitute misuse or abuse of the exceptions. To do so the Chapeau qualifies justification measures by requiring they are not "arbitrary or unjustifiable discrimination between countries where the same conditions prevail" or a "disguised restriction on international trade." These measures have a high threshold. Canada and its provinces should negotiate with their trading partners to meet this threshold.

The domestic carbon pricing scheme must not be constructed in a way that acts like an export subsidy, otherwise it will be contrary to WTO law. Subsidies are defined as "a financial contribution by a government of public body" where there is "a direct transfer of funds" or "government revenue that is otherwise due is forgone or not collected." An export subsidy is where the benefit is contingent on exporting. Subjecting Canadian industries to lower thresholds, "grandfathering", or providing rebate costs for their emissions to compensate for trade competitiveness effects and carbon leakage would all be considered export subsidies and are not allowed because of Canada's obligations under the WTO Agreements.

Efforts to combat climate change must include both domestic and international components. Internationally, Canada is bound by their emissions targets through the Paris Agreements. Domestically, the provinces must help to implement change to achieve these targets. The federal government should regulate both carbon emissions and carbon trade. While it may be the provinces who are most directly affected by BCAs, it is clear from domestic and international law that the federal government must regulate.

The *Constitution Act, 1867*, splits the roles of the federal and provincial governments in Canada. Commerce, trade, international engagement, and trade relations all fall under the authority of the federal government. Further, environmental regulation is considered a "national concern" which also falls under the authority of the federal government. Paragraph 12 of article XXIV of

the GATT states that federal states are responsible for the actions of regional and local governments within their territory. This means that any measures enacted by Canadian provinces and territories must also comply with WTO law.

Across Canada and the world, many carbon pricing systems already exist. This report provides examples of such programs. This includes the European Union's proposed Carbon Border Adjustment Mechanism, to prevent carbon leakage on imported products, and the European Union's current Emissions Trading System, which only applies to products that originate within the European Union.

Finally, there are many other measures that may be implemented alongside BCAs. This includes green procurement and investment, where the province would require purchases to be made with environmental considerations in mind. The federal government has such programs in place and the Government of New Brunswick should consider adding their own.

Appendix I

The formula used for the quantification of emissions and production data are as follows.

$$DEa\_i = \sum_{y} ESy\_a\_i$$

DEa_i: direct emissions for the regulated facility for the purpose of producing product a in year i, expressed in tonnes of CO2e

ESy_a_i: total regulated emissions for regulated sources y for product a in baseline year i, expressed in tonnes of CO2e

a: product produced at the regulated facility

i: baseline year for the purpose of calculating baseline emissions or the compliance period for the purpose of calculating total regulated emissions

y: regulated source owned or controlled by the owner or operator of the regulated facility

The formula used for determining baseline emissions at a regulated facility is as follows.

$$BEa\_i = DEa\_i - IEa\_i + EEa\_i$$

BEa_i: baseline emissions for the purpose of producing product a in baseline year i, expressed in tonnes of CO2e;

DEa_i: direct emissions for the regulated facility for the purpose of producing product a in baseline year i, expressed in tonnes of CO2e;

IEa_i: total amount of imported CO2 to the regulated facility from another regulated facility subject to the Regulation for the purpose of producing product a in baseline year i, expressed in tonnes of CO2e;

EEa_i: total amount of exported CO2 from the regulated facility that was created during the production of product a in baseline year i, expressed in tonnes of CO2e;

a: product produced at the regulated facility;

i: baseline year.

The formula for baseline emissions level is as follows:

$$BPLa = \frac{1}{n} \sum_{i=1}^{n} Pa\_i$$

$BPLa$: baseline production level for product a in the baseline years

Pa_i: amount of product a produced at the regulated facility in the baseline year i

a: product produced at the regulated facility

i: baseline year

n: number of baseline years.

The formula for baseline intensity emissions for a product at a regulated facility is as follows.

$$BEIa = \frac{BELa}{BPLa}$$

$BEIa$: baseline emissions intensity for product a

$BELa$: baseline emissions level for product a

$BPLa$: the baseline production level for product a

a: product produced at the regulated facility.

The formula for Biomass adjustment factor in an adjustment period is for regulated facilities with an on-site co-cogeneration unit, where at least 91% of its steam is generated by biomass is,

$$BFk = 1.045$$

BFk: Biomass Adjustment Factor in reduction period k;

k: current reduction period for the regulated facility.

For all other regulated facilities, the formula for the biomass adjustment factor in an adjustment period is,

$$BFk = 1.0$$

BFk and k have the same meaning as the above formula.

For regulated facilities who are primarily engaged in lime manufacturing, for which their primary NAICS Code is 327410 (lime manufacturing), the Risk Adjustment Factor in a reduction period is:

$$RFk=1.045$$

RFk: Risk Adjustment Factor in reduction period k; and,

k: current reduction period for the regulated facility.

For all other regulated facilities, the Risk Adjustment Factor in a reduction period is:

$$RFk=1.0$$

RFk is the Risk Adjustment Factor in reduction period k

k is the current reduction period for the regulated facility.[244]

Appendix 2

Coverage Indicators

All else being equal, when a policy has broader coverage, the effectiveness of that policy increases. To be effective, therefore, the carbon price should cover as many emission sources as possible, except when some emission sources are uniformly exempted across jurisdictions and are targeted by other non-pricing policies. To compare coverage across provinces and territories, we consider the indicators below.

Indicator 1: The Quantity of Emissions Valued by the Price Incentive

Emissions covered include all emissions that have an opportunity cost. In other words, an emitter can avoid paying the price of carbon by reducing these emissions. Emissions for the purposes of this assessment can be classified according to the following groups:

- Covered Fuels – fuels covered under a fuel charge, carbon tax, or emissions related to fuels that are paid directly by fuel suppliers in cap-and-trade systems.
- Exempt Fuels – Fuels exempted under regulations in a jurisdiction.
- Covered Emissions from Large Emitters – These are emissions regulated under large emitter programs and include energy and industrial process emissions.
- Exempted Emissions from Large Emitters – Most of these are related to process and fugitive emissions.
- Total Covered Emissions – Sum of emissions covered by either covered charges and taxes or large emitter programs.
- Never Covered Emissions – Certain emissions are never covered by any jurisdiction in carbon pricing programs in Canada (non-energy-related agricultural emissions and land use emissions).

$$\mathbf{SE\_i = CE\_i / TE\_i}$$

i: jurisdiction

SE: share of emissions covered

C: Covered emissions

TE: Total Emissions (not including land use)

Comparing this statistic across jurisdictions is not reliable given that emission sources vary.
Some technical considerations:

- Reported emissions in 2018 for regulated facilities were considered in the designation of splitting emissions into groups; however, there is uncertainty in the grouping allocations. Also, there are no estimates of emissions from smaller facilities that fall below reporting thresholds that may have opted into a large emitter program.
- Emissions covered by the carbon price under covered fuels and large emitter programs include emissions from energy used directly; and energy used indirectly; and releases

of process and fugitive emission. Other emissions could be covered due to the presence of offsets.

- Emissions where carbon price rebates are provided are included in the coverage indicators.
- Covered fuel exemptions and large emitter exemptions are emissions that are not covered in the jurisdiction but in theory could be covered since at least one other Canadian jurisdiction has chosen to cover these emissions.

Indicator 2: The Emissions that Could be Priced – The Coverage Standard

This indicator better accounts for differences in emissions profiles across jurisdictions. To develop the standard, all carbon pricing systems were reviewed to identify which emissions were covered. If a group of emissions or part of a group of emissions was covered somewhere by carbon pricing, it was flagged and added to the coverage standard. Then, for each jurisdiction, emissions were identified as covered somewhere. The standard indicates that 82% of 2018 emissions could be covered under carbon pricing. 4% higher than actual coverage.

The coverage standard indicator is the ratio of actual program coverage to the coverage standard applied to each jurisdiction:

$$\mathbf{SBPE\_i = CE\_i / (TLE\_i – EE\_i)}$$

SBPE_i: share of priced emissions covered in each jurisdiction, as a proportion of the coverage standard.

EE: Emissions in the jurisdiction that are in categories that are not covered anywhere by carbon pricing.

TLE: total emissions.

Where there are cases where an emission category is only partially exempted, emissions were adjusted proportionally to the highest stringency – i.e. using the highest share of emissions that are covered in any province. Within this section a trade-weighted version of the indicator was also calculated. The indicator was "expanded" by offsets from outside Canada. If a program is a net importer of emission reduction units for compliance, the trade weighted coverage is increased by the quantity of imported units to reflect broader coverage. Conversely, if a jurisdiction is a net exporter of credits, this means that a proportion of the emissions reductions happening locally are accounted for elsewhere, therefore decreasing the trade-weighted coverage.

Stringency Indicators

Stringency refers to the strength of the incentives created by a carbon pricing policy to reduce GHG emissions, or in simpler terms, how much reducing emissions pays. Marginal and average costs were used as proxies for carbon pricing effectiveness.

A Note on Cap-and-Trade Systems: The following indicators must be interpreted with caution when assessing cap-and-trade systems. In such regimes, the marginal cost is the result of several factors, the most important ones being the quantity of available allowances, the cap

declining rate, the auction reserve prices, the cost containment reserves, the access to compliance flexibility, and the impact of complementary climate policies on emissions. Access to international units can also lower marginal costs but may not necessarily impact overall effectiveness given the presence of the binding cap. Therefore, when evaluating the effectiveness of cap-and-trade systems – and for that matter the large emitter programs that allow for traded units such as the federal OBPS – special consideration should be given to the tightening rates and to specific system design components rather than the observed marginal cost.

Indicator 3: The Marginal Cost Incentive

The marginal cost incentive is the carbon cost applied to compliance emissions which provides for the incentive for facilities and consumers to reduce emissions. It is the value of an emissions reduction.

Design choices that impact the marginal cost incentive include POS rebates, which lower the marginal cost incentive; other rebates; compliance tonnes as a fraction of covered emissions (LEPs set tonnes subject to the carbon price -- not included as an adjustment to the marginal cost incentive); banking of performance credits or tradeable units (not explicitly considered due to data limitations); and free allocation or benchmarks in LEPs (not accounted for in this analysis).

$$\mathbf{MCI\_i = (CP\_i,j – CP\_i,j \times (RE\_i,j / CE\_i,j))}$$

MCI_i: Marginal Cost Incentive

CP_i,j: Carbon price in 2020 in each jurisdiction, for each category of emissions, j.

RE_i,j: Emissions in each jurisdiction that are directly rebated at point of sale for each category of emissions. These include only rebates that are received immediately.

Indicator 4: The Average Cost Incentive

The average cost incentive provides two insights: (1) indicates how strong the signal is for new facilities or major retrofits to improve their emission performance; and (2) provides insight into inter-jurisdictional competitiveness and how costs are distributed. On one hand, low average cost incentives are a deliberate effort to design policies to limit the risks of "leakage". On the other hand, low average cost incentives can reduce structural changes in economies over time, slowing low-carbon transitions.

The average cost incentive is important to effectiveness as it drives long-term capital decision making. Economic theory demonstrates that average costs drive "scale" and/or investment effects – output is altered when production costs rise and returns on investment fall. This means average costs drive "composition" or market effects as well. With a low carbon cost per unit of production, firms will outcompete high-emission-intensity producers and gain market share, all else equal. It can also result in a long-term shift in the composition of output or economic structure towards operations with relatively low emissions per unit of production.

$$\mathbf{AC\_i = (CU\_i,j \times MI\_i,j – OE\_i,j \times (MI\_i,j – OP\_i,j))/CE\_i,j}$$

AC_i: Average cost Incentive

CU: Compliance Units

MI: Marginal Cost Incentive

OE_i,j: Estimated eligible offset units used as compliance in 2020 for carbon pricing systems (i.e., AB and QC).
OP: Estimated average unit price for offsets used as compliance in 2020 for carbon pricing systems.

The average cost incentive is equal to the marginal cost incentive multiplied by the final compliance units for each jurisdiction divided by tonnes covered. For covered fuels, compliance units are the same as the covered emissions. However, for LEPs, compliance units may be based on product emission intensity benchmarks or allocation limits. Estimates are subject to uncertainty due to the limited availability of data on actual compliance emissions.

Two determinants were factored into the calculations. The first determinant was the free emissions for large emitters. Facility benchmarks are used to determine free emissions in credit systems, while free allocation in cap-and-trade systems are based on comparing a facility's emission level against an average emission limit for the sector. The second determinant was Offsets. Where limits on offsets exist, lower priced offsets would be the first choice for meeting compliance obligations and would not reflect the cost paid at the margin.

Key determinants not included in these calculations that would lower the estimated average cost included banking, advance auctions where allowances are obtained at lower prices, and abatement implemented at a cost below the carbon price. Abatement costs have the most significant impact.

The main source of variation in the average cost incentive across jurisdictions is the ratio of compliance tonnes to tonnes covered. The difference means that in some jurisdictions, the impact on business and household income is much higher than others, with the risk that this could drive economic activity to other jurisdictions. Inversely, in jurisdictions where the average cost incentive is low, a long-term signal to invest in low-carbon tech may be muted.

Design choices for LEPs can keep average cost low, while not affecting the MC. The principle of reducing average costs but not marginal incentives is fundamental to approaches to addressing concerns around competitiveness and leakage. However, the principle does not always hold. If LEPs are too weak and too many emitters have "easy" benchmarks, demand for credits will fall and so too will the market price for those credits. Firms would no longer have the marginal incentive to improve emissions beyond their emission benchmark and the actual marginal price of carbon will be driven lower.

Indicator 5: Setting Long-Term Expectations

Expectations of future carbon prices also increase effectiveness. When emitters expect higher future carbon prices (with greater certainty) they are more inclined to invest in low carbon

projects/tech. Carbon price schedules (that exist) in all jurisdictions (except Quebec) are inconsistent with incentivizing continuous improvement over the longer term. Most provinces have a price schedule out to 2022, but most are not indexed to inflation.

Note on Revenue Recycling

Decisions about how revenue generated through carbon pricing is returned to the economy can also influence effectiveness and overall stringency. Carbon pricing policy has two objectives, incentivizing emissions reductions and minimizing adverse income impacts. As a result, most jurisdictions use a mix of climate mitigation programs and rebates.

Approaches to revenue recycling can be organized across three different approaches, each with different effects: (1) POS rebates – these work against the marginal cost incentive; (2) rebates delivered through personal or corporate tax cuts or otherwise untied to fuel consumption -- these reduce the negative income impacts of pricing while maintaining the marginal cost incentive; and (3) carbon proceeds.

Adjusted Cost Incentive Indicators

The next two indicators demonstrate overall effectiveness. They combine Indicator 2 with Indicator 3 and Indicator 4. They provide a view of how both coverage and stringency contribute to effectiveness in each jurisdiction. For both, a higher value reflects more stringent policy, meaning that incentives are maintained (short-run for marginal cost and long-run for average cost) and broadly transmitted throughout the economy. The values are likely upper bounds due to assumptions concerning compliance obligations.

Indicator 6: Marginal Cost Incentive Adjusted by the Coverage Standard

This indicator is the product of each jurisdiction's coverage standard and marginal cost incentive.

Indicator 7: Average Cost Incentive Adjusted by the Coverage Standard

This indicator is the product of each jurisdiction's coverage standard and average cost incentive. The major differences in average costs are not surprising, given the presence of LEPs. This is by design and does not necessarily imply that LEPs are not stringent. If the credit or carbon markets are functioning well, the marginal cost incentive drives abatement choices and emissions reductions. The question then becomes whether the market mechanisms are in place and being adequately monitored to ensure a well functioning credit market. In our view, this is not the case in most jurisdictions. It is not always clear that the competitiveness assessments entirely justify the level of financial relief provided and the resulting low average costs. More robust and transparent assessment methods would better reveal the competitive risk the industry is facing.

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