

ORIGINAL ARTICLE

Climate Equivalence and International Trade

Emily Lydgate

Reader in Environmental Law, University of Sussex, Deputy Director, UK Trade Policy Observatory, UK
Email: e.lydgate@sussex.ac.uk

(Received 1 March 2023; accepted 1 March 2023)

Abstract

This article examines a significant question in navigating trade and climate tension: how to recognize another country as having equivalent climate regulations. Such equivalence forms a core component of many proposed models of so-called climate clubs. Establishing equivalence between distinct national climate regulation regimes poses a unique challenge that draws upon both trade and environmental international cooperation. Drawing on existing proposals, I examine prospects for country-based cooperation through three models: ETS-linking, benchmarking of shared methods and minimum standards, and benchmarking of outcome duties. The analysis concludes that all models necessitate some trade-offs between the goals of rigorous oversight of climate objectives, inclusivity, and WTO compliance. Benchmarking of shared methods and minimum standards seems most feasible, and would provide a deeper level of integration between trade and climate cooperation, but necessitates a shift in how countries, particularly the EU, oversee regulatory compliance.

Keywords: climate equivalence; climate clubs; Border Carbon Adjustment

1. Introduction

The term ‘climate club’ encompasses various potential forms of international climate cooperation (Hovi et al., 2016; Gampfer, 2016). This article examines prospective clubs in which participating countries facilitate trade with each other and restrict trade with others. Described by Mehling et al. (2022) as ‘transformational’, the model is most famously associated with Nordhaus (2015) who proposed that members of climate clubs should price carbon at the same level and impose tariffs against countries that do not. Such tariffs, he argued, would aid domestic industries in countries that price carbon but would otherwise compete with industries in countries that are not imposing commensurate abatement costs (the ‘free rider’ problem). The club motivates higher global climate ambition by creating an economic incentive to join.

Clubs involving trade measures on non-participants have advanced from academic debate to potential policy. In 2021, the EU and the US produced a statement agreeing to work toward a ‘Global Arrangement on Sustainable Steel and Aluminium’ (GASSA), which, among other objectives, will ‘restrict market access for non-participants that do not meet standards for low carbon intensity’.¹ In contrast, Germany, as president of the G7, has proposed a climate club which does not appear to include imposition of trade measures on non-participants,² acting as a forum to

*Thank you to L. Alan Winters for discussions which informed this and many other articles, and to Ingo Borchert and Bernard Hoekman. This research was supported by the Centre for Inclusive Trade Policy, Economic and Social Research Council [grant number ES/W002434/1].

¹Joint EU–US Statement on a Global Arrangement on Sustainable Steel and Aluminium’ (31.10.21).

²G7 Germany 2022, ‘Terms of Reference for the Climate Club’, 12 December 2022, www.g7germany.de/resource/blob/974430/2153140/353c0548bb27a75534468d624f738848/2022-12-12-g7-erklaerung-data.pdf?download=1 (accessed 02/02/2022).

© The Author(s), 2023. Published by Cambridge University Press on behalf of The World Trade Organization. This is an Open Access article, distributed under the terms of the Creative Commons Attribution licence (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted re-use, distribution and reproduction, provided the original article is properly cited.

facilitate non-binding discussion toward coordination of policies and methods, and other cooperative approaches toward industrial decarbonization.³ These proposals are accompanied by unilateral plans to price carbon beyond national borders. The EU's Carbon Border Adjustment Mechanism (CBAM),⁴ examined at greater length below, extends EU Emissions Trading Scheme (ETS) prices to imported products in trade exposed sectors. Other countries, including the UK⁵, Canada,⁶ and the US,⁷ also appear to be considering seriously the introduction of such measures, known generically as Border Carbon Adjustments (BCAs). The introduction of BCAs will introduce not only carbon costs but also significant administrative difficulties for exporting firms. It thus further incentivizes the introduction of a 'club' model in order to alleviate the impacts of such measures, and raises the question of how such clubs might fit with Germany's proposal, which might be described as a cooperative (information-sharing) rather than a competitive (sanctions-imposing) club.

The rationale for climate allies to mutually waive BCAs through a competitive club seems clear. As well as preventing unnecessary trade barriers, it avoids further atomization of trade and climate negotiations among potential climate allies. Further, by increasing the market reach of BCAs, such a club will increase the incentive for non-participating countries to introduce domestic carbon pricing so that revenues accrue domestically rather than being paid to trade partners. Establishing *equivalence* is a longstanding challenge in trade negotiations on product standards (Schroder, 2011; Young, 2015), and climate clubs point to the need to do so in the context of climate regulation, through new forms of international cooperation.

Yet a competitive club model potentially exacerbates tensions with countries that do not qualify, such that determining club membership poses a significant diplomatic challenge. Uncertainty remains about criteria for joining and the benefits of membership. Questions include: what will countries require to admit others to the club? Is having a national carbon price a prerequisite, or would it be possible to argue that domestic industries face equivalent costs due to other types of climate regulation, such as performance standards? Can country-based carbon border tax exemption be reconciled with WTO non-discrimination requirement that 'like' products from all WTO Members be treated evenly with respect to taxes and regulations? Finally, how can it reflect the Paris Agreement's (UN, 2015) central principle of Common but Differentiated Responsibilities and Respective Capabilities (CBDR-RC) that recognizes that developing countries have less individual responsibility to mitigate climate change, and may struggle more to implement requirements to assess the emissions in their products?

These same questions also point to desired attributes for climate clubs. First, as a competitive club is based on the objective of preventing free riding, membership criteria should be rigorous enough to ensure that clubs effectively support shared climate objectives, thus upholding their function in overcoming competitive disadvantages from climate regulation. Second, while clubs by definition are not fully inclusive, they should be as fair as possible. This can be achieved

³Stern and Lankes (2022), commissioned by Germany to inform its G7 proposal, conclude that the term 'club' is misleading for what should be labelled as an Alliance of Leaders, www.lse.ac.uk/granthaminstitute/wp-content/uploads/2022/10/Collaborating-and-delivering-on-climate-action-through-a-Climate-Club.pdf (visited 03/02/23).

⁴European Commission, Proposal for a Regulation of the European Parliament and of the Council establishing a carbon border adjustment mechanism COM(2021) 564 final. At the time of writing the CBAM proposal is being debated, and refined, through the EU Council, Parliament and Commission trilogue process, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52021PC0564> (accessed 29/03/23).

⁵Ministers to consult on implementing CBAM following EAC recommendation, <https://committees.parliament.uk/committee/62/environmental-audit-committee/news/171544/ministers-to-consult-on-implementing-cbam-following-eac-recommendation/> (accessed 07/10/2022).

⁶'Consultation on Border Carbon Adjustments', www.canada.ca/en/department-finance/programs/consultations/2021/border-carbon-adjustments.html (accessed 01/10/2022).

⁷The idea of introducing BCA more broadly enjoys some bipartisan support in the US. Hendersen, C. (2022) 'A carbon border adjustment is on the negotiating table' (republicEn 03.05.22), <https://republicen.org/blog/a-carbon-border-adjustment-is-on-the-negotiating-table> (accessed 29/03/23)

through ensuring that criteria for joining are clear and open to all in principle (procedural transparency). Clubs should also honour the principle of CBDR-RC through incorporating elements of climate finance, technology transfer, and capacity building. They may also waive charges or relax membership criteria for developing countries. Finally, to decrease the likelihood of trade retaliation and to increase their multilateral acceptance, clubs should be compliant with international trade law, notably WTO non-discrimination requirements.

In this article, I use these proposed goals to assess three models for determining climate equivalence. The first model, ETS-linking, might also be described as a harmonization-based approach to climate clubs: it demands that participants converge on a shared carbon price. It is inspired by the EU Commission's CBAM proposal. The second model, benchmarking of shared methods and minimum standards or prices, allows countries to maintain separate regulation but requires that they arrive at a shared approach across these differences. This draws inspiration from the GASSA mentioned above. The third model, benchmarking based on outcome duties, might be described as an equivalence model, as it assumes that countries will achieve comparable outcomes if they have the same objectives. It draws inspiration from the EU-UK Trade and Cooperation Agreement as well as elements of the G7 proposal.

These models reveal tensions between environmental ambition, WTO-compatibility and inclusiveness. I argue that an approach based on benchmarking of shared methods and minimum standards seems to optimize most objectives, but would require flexibility from countries in their conformity assessment requirements.

2. Model 1: ETS Linking as Equivalence

To determine climate club membership, Nordhaus considers two potential approaches. The first is that countries apply carbon duties to imported products, or, in the case of an Emissions Trading Scheme, require that their producers buy emissions permits that are equivalent to domestic prices for their carbon content. The second, which he considers technically simpler and more effective in inducing other countries to join the club, is that countries in the club apply a low flat-rate tariff across the entire spectrum of goods from non-participants Nordhaus (2015, 1341).

The EU CBAM will approximate, to some degree, the first of Nordhaus's proposals, though it does so unilaterally, rather than through a club model. More specifically, the CBAM will impose EU Emissions Trading Scheme (EU ETS) prices on to imported products. After a transition period from 2023 to 2026, in which only reporting will be required, prices equivalent to those charged under the EU's Emissions Trading Scheme will be applied to imported products. CBAM will cover sectors which the EU has determined to be most at risk of leakage: direct emissions from iron and steel, cement, aluminium, fertilisers, electricity, and hydrogen, as well as indirect emissions under certain conditions, and some downstream products (iron and steel screws and bolts).⁸

The CBAM responds to record prices of the EU's Emissions Trading Scheme, (approximately €95/tonne at the time of writing⁹), causing increasing industry outcry from priced sectors that are highly traded (Sheppard et al., 2021). At the same time, the current strategy of allocating free allowances¹⁰ is not fully coherent with EU climate ambition.

When examining prospects for climate clubs, the most significant design element of CBAM is the basis upon which the EU exempts countries from charges. Such exemptions, if applied to an entire country and combined with a trade partner's imposition of its own BCA charges, would move CBAM from a unilateral measure to a club.

⁸Press release: 'Deal Reached on New Carbon Leakage Instrument to Raise Global Climate Ambition', European Parliament (13/12/22), www.europarl.europa.eu/news/en/press-room/20221212IPR64509/deal-reached-on-new-carbon-leakage-instrument-to-raise-global-climate-ambition (accessed 02/02/22)

⁹For updated carbon prices, see the 'Carbon Price Tracker', <https://ember-climate.org/data/carbon-price-viewer/> (accessed 11/01/22).

¹⁰'Allocation to Industrial Installations', https://ec.europa.eu/clima/policies/ets/allowances/industrial_en.

The legislation is being finalized at the time of writing, but the EU Commission proposal requires that, to be exempted on a country basis, countries must be part of the EU's carbon pricing mechanism. Outside the EU, only countries that participate in the ETS (EEA countries) or have carbon pricing schemes that are formally linked to the ETS (Switzerland) are exempted altogether. The Commission leaves open the possibility of negotiating sectoral agreements to take account of domestic carbon pricing in other countries. Alternatively, individual exporters can reduce charges if they pay domestic carbon taxes. However, to do so, they must undertake a set of conformity assessment requirements that themselves impose significant compliance costs: being authorized with the so-called CBAM Authority, establishing proof that they have paid for their emissions, and receiving certification from an independent third party.¹¹ This strongly motivates exporters to seek exemption on a country – rather than just a product – basis.

2.1 Analysis

2.1.1 High Rigour in Achieving Climate Objectives with Lack of Inclusivity

The Commission's proposal to allow exemption from CBAM charges through ETS linking dovetails with EU efforts to link ETS schemes under the Paris Agreement Article 6 negotiations.¹² It also finds support in academic literature. For example, Leal-Arcas (2021) imagines that linked ETS schemes would form the basis of a climate club. This harmonization approach ensures that members of a club bear the exact same carbon costs in covered sectors, providing an approach which is maximally strong in addressing the competitive problem of asymmetry in carbon pricing.

The significant downsides to the approach come with the difficulty of achieving ETS-linkage. This is readily apparent by examining the EU's slow progress. Switzerland is the only country that has successfully linked an Emissions Trading Scheme with the EU. The EU ETS has been successful in establishing high carbon prices due in part to its imposition of strong regulatory controls, and the EU must establish that a partner country has a compatible system which is mandatory and has an absolute emissions cap.¹³ The time horizon for completing such negotiations, particularly beyond the EU region, is likely incompatible with the speed of action required to form clubs.

The approach also does not provide any means for inclusion for countries that do not have domestic ETS schemes. It precludes participation from countries that apply carbon taxes or require firms to apply strict performance standards (implicit pricing), rather than explicit carbon prices. Further, as the majority of countries that price carbon are in the developed world, it *de facto* excludes participation from many developing countries. In Africa, while several countries impose carbon taxes, none currently have ETS schemes.¹⁴

2.1.2 WTO-Compliance: Rational or Rigid?

Nordhaus acknowledges that his climate club proposal would require 'climate amendments' to international trade law to forbid tariff retaliation against participants by non-participants (Nordhaus, 2015, pp. 1348–1349). Similarly, former WTO Appellate Body Chair James Bacchus proposes the introduction of a WTO climate waiver 'for all trade-restrictive climate response measures that are based on the amount of carbon used or emitted in making a product, and that are taken in furtherance of and in compliance with the Paris Agreement and the UNFCCC' (Bacchus, 2017). Such a waiver could theoretically enable countries to impose border carbon adjustment without fear of legal challenges or tariff retaliation in the WTO.

¹¹European Commission, *supra* n. 4, Chapter II.

¹²See: EU, 'International Carbon Market', https://climate.ec.europa.eu/eu-action/eu-emissions-trading-system-eu-ets/international-carbon-market_en (accessed 07/10/22).

¹³Ibid.

¹⁴'World Bank Carbon Pricing Dashboard', <https://carbonpricingdashboard.worldbank.org/> (accessed 07/10/22)

While such proposals would resolve the potential for conflict, the failure of negotiations through the WTO Doha Development Round to progress reveals little prospect for the WTO membership as a whole to agree on many issues, let alone as controversial and divisive a proposal as a climate waiver. Further, the disabling of the Appellate Body has led to a fragmented WTO dispute settlement process whose rulings have decreased in strength and legitimacy. The Multi-Party Interim Appeal Arbitration Arrangement (MPIA), which has been designed by some Members to replace it, does not include participation of all WTO Members. The UK, for example, which is considering introduction of BCA, does not participate.¹⁵ WTO panels are *ad hoc*, increasing legal uncertainty. Parties may also request arbitration after a Panel ruling, but this is voluntary, and an adverse ruling can also be ‘appealed into the void’.¹⁶ The regulatory scenarios proposed are speculative and lack the detail that would come under scrutiny in a dispute analysis. Thus, this remains an incomplete analysis.

Despite these limitations, it appears overwhelmingly likely that any climate clubs that exempt countries as a whole from BCA charges will be incompatible with GATT Article I:1 (Pauwelyn and Kleimann, 2020). The Article stipulates that ‘Any advantage, favour, privilege or immunity granted by any contracting party to any product originating in or destined for any other country shall be accorded immediately and unconditionally to the like product originating in or destined for the territories of all other contracting parties.’¹⁷ The Appellate Body was clear that policy justification – in this case, the fact that countries being exempted share an ETS scheme – is not relevant when determining compliance with Article I:1. Instead, it is a market-based test based on ascertaining whether there is a negative competitive impact on imported products.¹⁸ It is difficult to imagine that an exemption of BCA charges for some countries and not others could be positioned as anything other than a negative impact upon conditions of competition for non-exempted countries. As indicated by Nordhaus, that is the explicit intent of a climate club.

This raises the important question whether the CBAM, as envisaged by the EU Commission, is not in conformity with the MFN principle because it exempts individual countries within the EU from charges and regulatory compliance requirements, as well as EEA countries and Switzerland. The EU, as a contracting party and customs territory in its own right,¹⁹ might be seen as exempt from extending the treatment provided within the EU to third countries on an MFN basis.²⁰ However, the exemption of EEA countries and Switzerland, as well as any other countries that link ETS schemes, may be seen as not in conformity with GATT Article I:1.

If a BCA exemption is seen as non-compliant with GATT Article I:1, a WTO panel (or, on appeal, the MPIA) may still consider the reason for the regulation, and whether it can justify the disparate impact on conditions of competition, under the General Exception to the GATT, Article XX. A determination of the legitimacy of exempting some countries and not others, with reference to the regulatory objective, would likely fall under the chapeau of Article XX, which reads:

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

¹⁵See, e.g. ‘Multi-Party Interim Appeal Arbitration Arrangement’, https://wtoplurilaterals.info/plural_initiative/the-mpia/ (accessed 07/10/22)

¹⁶Dispute Settlement without Recourse to Panels and the Appellate Body’, WTO website, www.wto.org/english/tratop_e/dispu_e/dispu_settlement_cbt_e/c8s2p1_e.htm (accessed 13/10/22).

¹⁷GATT (1994), at 455.

¹⁸Appellate Body Report, *European Communities – Measures Prohibiting the Importation and Marketing of Seal Products (EC–Seal Products)*, WT/DS400/AB/R; WT/DS401/AB/R, 18 June 2014, paras. 5.86, 5.95.

¹⁹See, e.g. ‘The European Union and the WTO’, www.wto.org/english/thewto_e/countries_e/european_communities_e.htm (accessed 13/10/22)

²⁰The view that EU Member States have an exceptional status with respect to the WTO MFN principle has been challenged. See e.g., Bartels (2005) in the context of the EU’s mutual recognition principle.

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: ... (GATT, 1994) [specified in the subparagraphs]

The chapeau constitutes an additional discipline on a measure provisionally justified under an Article XX subparagraph. Case law under the chapeau emphasizes the importance of a clear means–ends relationship between a trade-restrictive regulation and its environmental objective. The Appellate Body concluded that ‘whether discrimination is arbitrary or unjustifiable *usually involves an analysis that relates primarily to the cause or the rationale of the discrimination*’²¹ [emphasis added]. Here, the approach of excluding countries based on failure to link ETS schemes appears robust. The rationale is clear: they do not pose commensurate pricing on domestic producers. The level of shared protection afforded by the regulation is precise, indeed quantitative. The exemption is open in principle to any country that can link its ETS schemes, an element of transparency that also works against a finding of arbitrary or unjustifiable discrimination.

However, as Vidigal and Venzke (2022) point out, another strand of chapeau case law suggests that imposing the exact same regulation that is appropriate domestically may be discriminatory in some scenarios. In *US–Shrimp*, the United States required fishermen to utilize the exact same approach, the installation of a Turtle Excluding Device, or TED. The Appellate Body stated:

[the US regulation] ... imposes a single, rigid and unbending requirement that countries applying for certification ... adopt a comprehensive regulatory program that is essentially the same as the United States’ program, without inquiring into the appropriateness of that program for the conditions prevailing in the exporting countries.²²

The Appellate Body concluded that the US’s regulation did not take into account different conditions in exporting countries, notably whether endangered turtles swam in the waters of the complaining parties.²³

As a global problem, climate change is a ‘condition’ that affects all countries, but there is certainly a possibility that a WTO panel would emphasize the need to examine climate regulation in countries excluded from the club based on their ability to meet comparable objectives, and that requiring ETS linking as the only route for exemption might be seen as excessively rigid. There is also an implied procedural obligation for those that enter into such climate clubs to negotiate with others about their prospective inclusion and take into account how effectively they are addressing climate mitigation goals, even by other means.²⁴ If other countries apply approaches that are equally effective in achieving the objectives of the EU ETS, they could form the basis for a WTO-compatible exemption, an issue considered further in Model 2 below.

3. Model 2: Benchmarking through Shared Methods/Minimum Standards

Rather than requiring full harmonization of carbon pricing through linking ETS schemes, another approach to exemption from BCA charges, and thus club membership, would be based on establishing that the carbon price experienced by each party is equivalent, even if the regulatory system through which it is delivered differs. This would require a shift from simply understanding quantitatively the ETS price paid by each side. Instead, equivalence would need

²¹Appellate Body Report, *Brazil – Measures Affecting Imports of Retreaded Tyres*, WT/DS332/AB/R, 3 December 2007, para. 227.

²²Appellate Body Report, *United States – Import Prohibition of Certain Shrimp and Shrimp Products (US–Shrimp)*, WT/DS58/AB/R, 15 June 2001, para. 177.

²³Lydgate (2016) examines this issue in depth.

²⁴*US–Shrimp*, paras. 163–176.

to be established through establishing shared benchmarks. These could take the form of an agreed, and shared, baseline carbon price, or through a move to minimum performance standards rather than pricing, on the basis that emissions-based performance standards impose costs, which are often described as an implicit carbon price.

The GASSA contains elements of benchmarking based on minimum performance standards. The GASSA is initially limited to the US and EU, but the proposal states that it is open in principle to ‘like-minded economies’ that will, among other objectives, ‘restrict market access for non-participants that do not meet standards for low carbon intensity’. As part of GASSA, countries agree to set up a working group with the EU to ‘confer on methodologies for calculating steel and aluminium carbon-intensity and share relevant data’.²⁵ While this is unspecified, these methods will presumably lead into a shared understanding of the particular ‘low carbon intensity standards’ with which exporters must comply.

If realized, this approach might be seen as somewhere in between harmonization (requiring the exact same systems) and equivalence (allowing for different systems that achieve the same result). On the one hand, it could provide for more heterogeneity: ETS schemes, carbon pricing, or performance standards. However, it does require that participating parties agree on common methods for measuring embodied emissions, and that they also develop a shared standard or price. For either standards or pricing, this would likely function as a minimum requirement for market access.

Overcoming discrepancies in measuring embodied emissions is a significant aspect of recognizing equivalence between different systems. There is no generally accepted definition of embodied emissions. Silverado concludes that a ton of GHG emissions output for California steel is calculated to contain more than triple the emissions of EU steel for purposes of their respective ETS schemes, due to differing methodologies (Reid, 2022). Achieving such convergence is a steep challenge. Discussions on convergence are ongoing in various fora, including the OECD, International Deep Decarbonization Initiative, World Bank and International Standards Organization (Lydgate et al., 2022). Such discussions have the potential to aid progress toward climate clubs.

An alternative approach, which falls closer in line with Nordhaus’s proposal, would be for club participants to agree to a minimum price rather than a minimum standard. More specifically, they could tax carbon to the same industries at the same rate per tonne, but this could be achieved through domestic carbon taxation OR an ETS scheme. Thus, rather than minimum standards, club members would converge on a minimum price. This would be accompanied by a flat-rate tax or tariff applied to non-members’ exports in covered sectors. The increased flexibility of the approach would preclude the long and messy process of engaging in ETS-linking negotiations.

3.1 Analysis

3.1.1 Environmental Rigour: Challenges to Assessing and Enforcing Compliance

Determining methods and minimum performance standards seems to hold promise of providing a shared understanding of what precisely is required, as outcomes are defined objectively: the level of embedded carbon permitted, and how this will be calculated. There are other elements of this approach, however, that may undermine its environmental rigour as a club. These include the risk that the agreed minimum standard or price will not be ambitious enough, given that it is a minimum to which all countries, the more ambitious and the less ambitious, agree. Further, the process of calculating embedded emissions and in particular their equivalence with implicit carbon cost is fraught with complexity, as further examined in the context of WTO law, below. This might frustrate attempts to monitor the effectiveness of the approach.

²⁵Joint EU–US Statement on a Global Arrangement on Sustainable Steel and Aluminium (31.10.21), www.whitehouse.gov/briefing-room/statements-releases/2021/10/31/joint-us-eu-statement-on-trade-in-steel-and-aluminum/ (accessed 29/03/23)

The EU has not indicated that this type of ‘benchmarking’ model will comprise a sufficient basis for waiving CBAM charges. This points to another issue: even if common methods can be established, trust will be required to waive charges and conformity assessment requirements on foreign firms based on different regulatory systems that are not as easily verified.

3.1.2 *A More (but not Totally) Inclusive Club*

A major benefit of basing a club on minimum standards rather than ETS-linking is that it could span a much larger group of countries. Theoretically, any country that considered its climate measures to impose costs on domestic producers would be able to join the club. In practice, it might prove challenging to establish a rigorous basis for membership, given the methodological difficulties with measuring emissions across regulatory systems; to overcome these, it is likely that the focus would need to be limited to one or a few sectors.

There are also no guarantees that members will be interested in a transparent approach. The GASSA states that it is open to like-minded countries, an opaque concept, and precise membership criteria remain unspecified. The countries have agreed to ‘confer on entering into discussions on global steel and aluminium arrangements to address both non-market excess capacity as well as the carbon intensity of the steel and aluminium industries’.²⁶ This emphasis on non-market excess capacity suggests that the GASSA is intended to exclude China, for whom meeting a low carbon standard would not be a sufficient condition for membership. Clearly, excluding the world’s largest emitter is sub-optimal, and a club that is used primarily to reinforce geopolitical alliances cannot be seen as truly inclusive. This makes the proposal difficult to defend as upholding climate objectives fairly, and undermines its effectiveness in providing a market incentive for low carbon production. As this discussion has focused on minimum standards, it should also be noted that a club based on minimum price (excluding countries that use standards) risks maintaining exclusivity, and would likely also prove difficult for countries to introduce domestically, as it would demand legislative reform to implement the collectively determined price.

Even if a club has transparent membership criteria that are aimed solely at low-carbon production and are open to all in principle, it will still be more difficult for developing countries to participate. The set of regulatory requirements that accompany a benchmarking approach are intensive and may be more difficult for developing country firms to apply. This might result in perverse incentives for joining if developing country firms stop exporting due to inability to complete the required steps.

3.1.3 *WTO Compatibility: the Devil in the Details*

The WTO-compliance of an approach based on benchmarking shared methods/minimum standards will depend on its precise structure and implementation, but risks of non-compliance result from several factors. One is the countries that currently price carbon, such as those in the EU ETS, would introduce a minimum performance standard that was not imposed domestically. Carbon pricing is based on the premise that firms are allowed to emit carbon if they pay for it. A mandatory minimum standard will be more likely to comply with WTO law if the members of the club change domestic regulation to mirror what is required of imports: introducing performance standards in place of an ETS or domestic carbon price, where this is required of exporters. The counterfactual frustrates the basic logic of the National Treatment principle: extending the same treatment to domestic and imported products. The implication is that such a club would require domestic reforms, through the introduction of a hybrid standards/pricing approach.

This leads to a second area for concern, which is the difficulty of rigorously establishing equivalence between an explicit carbon price and an implicit (standards-based) carbon price, a necessity for extending the club to countries that do not price carbon. These difficulties are

²⁶US–UK Joint Statement: Steel and aluminum (22.03.22), www.gov.uk/government/news/us-uk-joint-statement-on-steel-and-aluminum (accessed 29/03/23).

apparent in the US FAIR Transition and Competition Act (2021) proposed by two US Congress people.²⁷ While it was not passed by US Congress, it highlights WTO law concerns that will likely emerge from a minimum-standard club.

The pricing structure in the proposed FAIR Act was based on costs imposed by the regulatory requirements for emissions reduction. These are not provided in the proposal itself, which stipulates that the US Government will calculate average regulatory costs of compliance with US climate regulation, including the Clean Air Act and regional carbon pricing. This will then be multiplied by the emissions embodied in the product.²⁸

It is difficult to impose an average price that fairly captures the regulatory burden experienced by US producers as it is an extremely heterogeneous regulatory environment. Only Northeast States and California are pricing carbon through cap-and-trade systems.²⁹ If US national averages are used as a basis to impose prices on third countries, exporters from non-club countries will likely be able to identify instances of asymmetric pricing where their producers are expected to pay more than those in the US. The complexity of reducing diverse national approaches to a uniform standard is likely to give rise to numerous opportunities for complaint by non-members about discrimination through unfair implementation.

As above, a final source of potential trade conflict would result from the conflation of climate objectives with other geopolitical aims. As set out above, disputes under GATT Article XX underscore the importance of a clear means-ends relationship between a trade-restrictive regulation and its goal. The GASSA's manifold regulatory objectives would frustrate a clear defence of the prospective club as being established to pursue climate-based objectives. Also, its lack of transparency in selection criteria would make defence of the GASSA difficult under GATT Article XX.

With respect to a minimum price (rather than minimum standards) approach, any club that applies a flat rate tax or tariff to imported products, rather than a price which reflects their actual emissions, will likely be seen as discriminating arbitrarily and unjustifiably under the GATT Article XX chapeau. Domestic taxes and ETS schemes are levied based on actual emissions which vary from producer to producer. In failing to identify the emissions associated with products being exported, a flat-rate tax or tariff will penalize low-carbon producers unfairly while rewarding high-carbon producers. Further, there will be no way to ascertain that prices being charged to exporters correspond with those being paid by domestic producers. Thus it seems unlikely that exporters will celebrate its relative simplicity with much enthusiasm. Successful defence under Article XX appears highly unlikely, not only because of discriminatory effects on different trade partners but because these seem to undermine the environmental objective of pricing emissions accurately and effectively in order to incentivize lower-carbon exports (Mehling et al., 2017).

4. Model 3: Benchmarking Based on Outcome Duties

A final approach could be based on benchmarking outcomes. The German G7 proposal suggests that outcome duties form the criteria for climate club membership. This club aims to start with the G7 but then widen membership based on commitment to net zero targets that limit warming to 1.5°C.³⁰

Given that the German G7 proposal as currently formulated does not include the imposition of trade measures on non-participating countries, I also draw inspiration for this model from the Trade and Cooperation Agreement (TCA), which includes more specific and enforceable

²⁷Fair, Affordable, Innovative, and Resilient Transition and Competition Act 2021, www.congress.gov/bill/117th-congress/house-bill/4534 (accessed 29/03/23).

²⁸Ibid, Sections 9902–3.

²⁹Centre for Climate and Energy Solutions, US State Carbon Pricing Policies, www.c2es.org/document/us-state-carbon-pricing-policies/ (visited 29/03/23).

³⁰G7 Germany 2022, above n. 2.

outcome duties that make it better suited to examination as the basis of a competitive club. In practice, the EU has not indicated that the TCA would constitute grounds for a climate club or exempting the UK from BCA charges, so this analysis proposes that an existing model be used for a different purpose: a plurilateral climate club rather than bilateral FTA.

The TCA reaffirms both Parties' ambition for 'economy-wide climate neutrality by 2050'.³¹ Parties agree to uphold their 'climate level of protection' as set out in interim greenhouse gas reduction targets. This includes specific quantitative interim targets that both Parties have committed to in domestic legislation. Integrating quantitative climate benchmarks into an FTA is novel, and the targets are covered by the non-regression requirement, such that if an arbitral tribunal agrees that regression has occurred, either Party can apply sanctions.³² The Parties also commit to non-regression on upholding an 'effective system of carbon pricing'. This requirement is also linked to binding dispute settlement. Parties shall 'give serious consideration' to pursuing linked ETS schemes.³³

These targets do not reflect both sides' increased climate ambition after committing to net-zero targets. Thus, the 40% reduction by 2030 target has been revised up to 55% in the EU and 68% in the UK. This reveals a potential downside of outcome duties, particularly if based on interim targets: it is a rigid approach that does not take account of increasing ambition. However, the TCA responds to this issue to some extent by stipulating that 'If material impacts on trade or investment between the Parties are arising as a result of significant divergences [in climate protection] ... either Party may take appropriate rebalancing measures to address the situation'.³⁴

Disputes under this so-called rebalancing mechanism can escalate to the threat of suspension of all or part of the TCA's trade provision for failure to keep pace. If such a model were applied to a number of countries as the basis for a climate club, penalties for failure to achieve outcome duties would likely be applied in the form of loss of membership.

4.1 Analysis

4.1.1 Environmental Rigour: Challenging to Oversee

As a basis for a carbon club, an outcome duty approach suggests the need for both sides to have faith in the integrity of one another's regulatory systems, and some tolerance for discrepancies that emerged in the short term. For example, the UK and EU carbon price has tracked fairly closely since the UK left the EU ETS at the end of 2020.³⁵ However, the carbon price that each side pays is not formally identical, and there are no long-term guarantees that it will continue to track; the scope or rigour of the ETS could diverge. Legally, the obligation is to maintain 'effectiveness', which appears open to interpretation. It seems unlikely that an outcome duty-based approach would be able to garner sufficient mutual trust if the regulatory starting points diverged greatly.

In the TCA, risks of divergence are minimized through enforcement mechanisms, but there is a risk that comes with an emphasis on enforcement. Far from providing a basis for cooperation for climate-ambitious countries, it might undermine this cooperation and instead embed further conflict. Whilst a full analysis of the rebalancing provision lies beyond the scope of this particular article, many of the concepts it introduced, such as 'material impact', have no precise analogue in existing EU treaties. In the event of a dispute, this means that if an arbitral tribunal was required to interpret them, it would hold tremendous influence. In the context of a climate club, it is

³¹EU-UK Trade and Cooperation Agreement (TCA) (entered into force 1 May 2021), Title XI, Article 355(3)

³²Ibid., Article 390(3), 391.

³³Ibid., Article 392.

³⁴Ibid., Title XI, Article 411.

³⁵Lydgate, E., L. A. Winters, P. Dodd, C. Jensen, G. Larbalestier, C. Anthony, and C. Vallier (2022) 'Trade policies and Emissions Reduction: Establishing and Assessing Options', Committee on Climate Change, www.theccc.org.uk/wp-content/uploads/2022/06/Trade-policies-and-emissions-reduction-establishing-and-assessing-options-UKTPO.pdf.

unclear who would monitor, and enforce, countries' adherence to their outcome duties. If a tribunal were established, the club could easily become contentious.

A climate club based on high-level outcome duties also risks attracting Members who have no real commitment to maintaining the aims, but simply wish to avoid fees. In general, there is uncertainty about the effectiveness with which any country will achieve its net-zero targets, and it may be difficult to understand precisely how countries are progressing, making oversight of such a model difficult.

4.1.2 *WTO Compliance: Difficult to Draw the Line*

An outcome duty approach has the potential to be the most inclusive of any potential climate club. Indeed, the approach could be based on a more macroscopic understanding of 'equivalence': in achieving a shared goal of decarbonization. In this sense, it has the highest likelihood of including a range of countries, including developing countries.

Under such an approach it would be difficult to justify where the line should be drawn between participating and non-participating countries. As outlined above, WTO panels will seek to assess whether a trade restriction (in this case, imposition of charges on some countries and not others) has a clear rationale and is necessary to achieve a regulatory outcome. Clubs based on outcome duties will make a rigorous assessment of where this line is drawn elusive at best.

5. Synthesis: An Optimal Approach to Climate Clubs?

The analysis above suggests core trade-offs. First, the more that high-level shared objectives underpin club membership, and the more they are based on trust, the more likely the realization of club. But a climate club that is too open, such as an outcome-duty-based climate club, risks replicating a free riding problem by incentivizing countries to set targets they may not intend to uphold. Conversely, a club based on harmonization in the form of ETS-linking may be slow to form and limited in membership. Benchmarking based on shared methods and minimum standards maintains some rigour while being able to span multiple regulatory approaches.

Second, WTO-compliance is difficult to assess due to factual and legal uncertainty, but it seems likely that all models of club membership will pose significant challenges with respect to the non-discrimination principles. The less transparent the membership requirements, the more likely they are to be challenged successfully as discriminatory. Club membership must be justified by clearly defined climate goals. While this is uncertain, there may be the need to recognize that countries might achieve the same goal through different means. In this respect as well, benchmarking based on shared methods and minimum standards is the most promising approach. Mutual recognition of technical standards, in order to waive conformity assessment requirements, is actively encouraged in the WTO framework.³⁶ In this case, however, recognition of equivalence is linked to waiving of charges, and the legality of such an approach remains uncertain.

However, the approach of benchmarking based on shared methods and minimum standards (as well as an ETS-linking), raises questions about compliance with CBDR-RC, as they would (likely) impose additional costs on exporters in covered sectors that fall into line with countries that price and regulate carbon most heavily. They are thus based on the presumption that all exporters should pay the same carbon prices. Addressing CBDR-RC in such a club may involve integrating differential treatment for developing countries. This could include integrating climate finance or other forms of aid into the club model, perhaps through the revenues that it generates,

³⁶If a BCA were to meet established criteria to be classified as 'technical', the TBT Agreement would apply; it contains articles that deal explicitly with conformity assessment procedures, and encourage mutual recognition of regulation. However, BCAs (and related climate clubs) involve imposing charges, which clearly falls under the remit of the GATT rather than the TBT Agreement.

as well as reducing, phasing in slowly, or even eliminating requirements for some countries based on their level of development.

6. Conclusion

A question that hangs over new climate-related trade restrictions, in particular Border Carbon Adjustment, is the extent to which they can be alleviated through new forms of regulatory coordination and cooperation. Legal innovation appears inevitable, as the EU and other countries that plan to introduce such measures decide which countries to exempt, and how. Climate clubs reinvigorates longstanding environmental debates about how to balance unilateral regulation against cooperative approaches.

This article has advocated shared methods and agreed minimum standards, combined with specific support measures for developing countries, as the most optimal approach (though still raising concerns about WTO-compliance). Such an approach would require a larger shift in the way that countries, and notably the EU, oversee regulatory compliance across borders. In this sense, climate clubs also prompt a new look at how countries govern shared regulatory aims.

Climate clubs may demand new forms of governance because they are themselves a hybrid form of trade/environment cooperation that falls between cooperation on product standards and cooperation on shared climate aims. With respect to intra-EU environmental law, the distinction between product-related and non-product related environmental regulation has salience. Many environmental Directives that focus on national environmental protection – for example, water and air quality, species protection, waste disposal – proscribe a minimum level of protection. This serves to prevent competitive advantages between EU Member States.³⁷ On the other hand, EU Directives tend to impose total harmonization, that is, a uniform rule from which derogation is impermissible, with respect to product standards.³⁸

This type of unilateral logic that the EU (and other countries) applies to product standards and regulation clearly poses an obstacle to climate clubs: it is difficult to extend national climate regulation, such as ETS schemes, plurilaterally. Absent domestic environmental enforcement and supervision, to some extent climate clubs must be animated by trust. Absent this trust, climate clubs, even among trade partners with comparable aims and regulation, could easily descend into climate retaliation.

Acknowledgements. I am grateful to many for discussions that informed this article, including Dr Fabian Zuleeg and the European Policy Centre, David O'Sullivan for useful comments at the SIEL annual conference in 2021, and especially L. Alan Winters for ongoing conversations that informed this article and many others.

Data Availability Statement. No data were used in this article.

References

- Bacchus, J. (2017) 'The Case for a WTO Climate Waiver', *Special report*. Centre for International Governance Innovation, www.cigionline.org/sites/default/files/documents/NEWEST%20Climate%20Waiver%20-%20Bacchus.pdf (accessed 29/03/23).
- Bartels, L. (2005) 'The Legality of the EC Mutual Recognition Clause Under WTO Law', *Journal of International Economic Law* 8(3), 691–720.
- European Union. (2007) Consolidated Version of the Treaty on the Functioning of the European Union, 13 December, 2008/ C 115/01.
- Gampfer, R. (2016) 'Minilateralism or the UNFCCC? The Political Feasibility of Climate Clubs', *Global Environmental Politics* 16(3), 62–88.

³⁷The concept of minimum level of environmental protection has been codified as an EU principle in Article 193 TFEU: The protective measures adopted pursuant to Article 192 shall not prevent any Member State from maintaining or introducing more stringent protective measures (EU, 2007).

³⁸*Ibid.*, Title II.

- GATT. (1994) *The Results of the Uruguay Round of Multilateral Trade Negotiations, the Legal Texts*. Geneva: World Trade Organization.
- Hovi, J., D. Sprinz, H. Saelen, and A. Underdal (2016) 'Climate Change Mitigation: A space for climate clubs?', *Palgrave Communications* 2, 16020.
- Leal-Arcas, R. (2021) 'The World Trade Organization and Carbon Market Clubs', *Georgetown Journal of International Law* 52(4), 895–976.
- Lydgate, E. (2016) 'Do the Same Conditions Ever Prevail? Globalizing National Regulation for International Trade', *Journal of World Trade* 50(6), 971–996.
- Lydgate, E., L. Alan Winters, P. Dodd, C. Jensen, G. Larbalestier, C. Anthony, and C. Vallier (2022) *Trade Policies and Emissions Reduction: Establishing and Assessing Options*. Sussex: UK Trade Policy Observatory.
- Mehling, M., H. van Asselt, S. Droege, and K. Das (2022) 'The Form and Substance of International Cooperation on Border Carbon Adjustments', *AJIL Unbound* 116, 213–218.
- Nordhaus, W. (2015) 'Climate Clubs: Overcoming Free-riding in International Climate Policy', *American Economic Review* 105(4), 1341.
- Pauwelyn, J., and D. Kleimann. (2020) 'Trade Related Aspects of a Carbon Border Adjustment Mechanism: A Legal Assessment', Briefing for the INTA Committee, European Parliament, April, p. 10.
- Reid, M. (2022) 'Measuring Carbon Across Borders: A New Paradigm in Trade', Silverado, 25.3.22. Available at: <https://silverado.org/news/measuring-carbon-across-borders-Silverado> (accessed 07/10/22).
- Schroder, H. (2011) *Harmonisation, Equivalence and Mutual Recognition of Standards*. Alphen aan den Rijn: Wolters Kluwer.
- Sheppard, D., H. Dempsey, and P. Hollinger. (2021) 'EU Industry Calls for Urgent Carbon Border Tax as Prices Soar', *Financial Times*, 29 April 2021.
- Stern, N., and H.P. Lankes. (2022) 'Collaborating and Delivering on Climate Action through a Climate Club: An independent report for the G7', At: <https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2022/10/Collaborating-and-delivering-on-climate-action-through-a-Climax-Club.pdf> (visited 03/02/23).
- United Nations (2015) Framework Convention on Climate Change. *Adoption of the Paris Agreement*, 21st Conference of the Parties, Paris: United Nations.
- Mehling, M., van Asselt, H., Das, K., Droege, S. and Verkuil, C. (2017) 'Designing Border Carbon Adjustments for Enhanced Climate Action', *Climate Strategies*. p. 13.
- Vidigal, G., and I. Venzke (2022) 'Of False Conflicts and Real Challenges: Trade Agreements, Climate Clubs and Border Carbon Adjustment', *AJIL Unbound* 116, 240.
- Young, A. (2015) 'Liberalizing Trade, Not Exporting Rules: The Limits to Regulatory Co-Ordination in the EU's 'new Generation' Preferential Trade Agreements', *Journal of European Public Policy* 22(9), 1253.