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The Discrepancy Between Environmental and Trade Commitments: Is a Green Countervailing Duty War Looming?

Çevresel ve Ticari Taahhütler Arasındaki Uyumsuzluk: Yeşil Telafi Edici Vergi Savaşı Yaklaşıyor mu?

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Abstract

This article examines the problematic interaction between two branches of public international law, namely, international environmental law and trade law, focusing on the growing tension between environmental commitments and the current World Trade Organization ("WTO") subsidy framework in the context of the green transition. It analyzes whether the existing WTO system was designed to accommodate and is capable of supporting comprehensive green subsidies that are increasingly adopted by states as part of their green industrial policies. Using a doctrinal, jurisprudential, and policy-based analysis of WTO subsidy rules, the article finds that the current WTO framework provides limited legal space and significant legal uncertainty for large-scale green subsidies. It further observes that this misalignment unfolds at a time when the WTO Dispute Settlement Body, which would normally provide multilateral remedies, remains dysfunctional due to the absence of a functioning Appellate Body. In this context, unilateral measures, i.e., countervailing duties ("CVDs"), are increasingly seen as the primary recourse, further intensifying trade tensions and potentially leading to an undesirable *green CVD war*. This article contributes to the literature by illustrating how the interaction between green industrial policies, WTO subsidy disciplines, and trade remedies generates new forms of conflict within the multilateral trading system, with significant implications for both environmental policy objectives and the stability of international trade relations.

Öz

Bu makale, yeşil dönüşüm sürecinde devletlerin çevresel taahhütleri ile mevcut Dünya Ticaret Örgütü ("DTÖ") sübvansiyon kuralları arasında giderek artan gerilim bağlamında, uluslararası kamu hukukunun iki dalı olan uluslararası çevre hukuku ile uluslararası ticaret hukuku arasındaki sorunlu etkileşimi incelemektedir. Çalışma, devletler tarafından yeşil sanayi politikalarının temel araçlarından biri haline gelen yeşil sübvansiyonların, mevcut DTÖ sistemine uygun olup olmadığını analiz etmektedir. DTÖ sübvansiyon kurallarına ilişkin doktrinel, yargısal içtihatlara dayalı ve politika temelli bir inceleme neticesinde, mevcut hukuki çerçevenin büyük ölçekli yeşil sübvansiyon paketleri bakımından sınırlı bir alan sunduğu ve önemli ölçüde hukuki belirsizlik barındırdığı ortaya çıkmaktadır. Bu yapısal uyumsuzluğun DTÖ bünyesinde yer alan Anlaşmazlıkların Halli Organında çözümlenmesi gerekirken, Temyiz Organı'na hâkim atanmaması nedeniyle fiilen bu seçeneğin işlevsiz hale geldiği bir dönemde ortaya çıktığı görülmektedir. Makale, bu durumun tek taraflı önlemlerden biri olan telafi edici vergileri ("TEV") temel başvuru yolu hâline getirdiğini; bu hususun ise ticaret gerilimlerini daha da yoğunlaştırarak istenmeyen bir *yeşil TEV savaşı* ihtimalini güçlendirdiğini iddia etmektedir. Bu yönüyle çalışma, yeşil sanayi politikaları, DTÖ sübvansiyon disiplinleri ve ticaret hukuku araçları arasındaki etkileşimin, çok taraflı ticaret sistemi içinde yeni çatışma biçimleri oluşturacağını ortaya koyarak; bu çatışmaların uluslararası ticari ilişkilerin istikrarı ve devletlerin çevre politikası hedefleri bakımından doğurduğu önemli sonuçlar üzerinden literatüre katkı sağlamaktadır.

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Keywords World Trade Organization · Paris Climate Agreement · Green Subsidies · SCM Agreement · Protectionism · Subsidy War · CVD War

Anahtar Kelimeler Dünya Ticaret Örgütü · Paris İklim Anlaşması · Yeşil Sübvansiyonlar · Sübvansiyonlar ve Telafi Edici Önlemler Anlaşması · Korumacılık · Sübvansiyon Savaşı · Telafi Edici Vergiler Savaşı

Introduction

International trade law has been facing certain, interrelated challenges.[1] Significant trade issues such as labor standards, transparency, and e-commerce still could not be solved.[2] The well-known trade and tariff war, which started during the first Trump administration (and has continued thereafter), eventually targeted China but made some countries collateral damage while escalating the mistrust among the World Trade Organization ("WTO") Members.[3] More dangerously, certain products were tried to be justified under the national security exceptions.[4] Currently, critical minerals and battery components are considered to be the same.[5] The list of products deemed essential to national security could further expand due to the harsh lessons of the COVID-19 pandemic and the export restrictions it triggered,[6] as well as the resurgence of the proactive trade agenda under the second Trump administration. The paralysis of the dispute settlement system, which was designed as the systems' custodian but now unable to produce final Appellate Body ("AB") decisions, made the matters worse.[7]

As if these have not been challenging enough, the trade system has been facing an additional, more vital, unavoidable, and unpostponable challenge, which has had and will continue to have growing detrimental effects on the trade system: climate change.[8] In late 2015, states concluded the Paris Climate Agreement, which, as of September 2025, has 195 signatories.[9] The Agreement mandates its Parties to speed up their green transition and substantially decrease their greenhouse gas ("GHG") emissions within certain period of time with the ultimate objective of achieving net-zero carbon emissions.[10] Notwithstanding, the Agreement does not envisage what specific policy tools states should implement. Since "large-scale investments are

[1] Robert Howse and Joanna Langille, 'Continuity and Change in the World Trade Organization: Pluralism Past, Present, and Future' (2023) 117(1) American Journal of International Law 1, 2–4.

[2] Patrick Low, 'The WTO in Crisis: Closing the Gap between Conversation and Action or Shutting Down the Conversation?' (2022) 21(3) World Trade Review 1, 5.

[3] Petros Mavroidis and André Sapir, 'China in the WTO Twenty Years On: How to Mend a Broken Relationship?' (2023) 24(1) German Law Journal 227, 238–242.

[4] See Tatiana Lacerda Prazeres, 'Trade and National Security: Rising Risks for the WTO' (2020) 19(1) World Trade Review 137, 142–146; Chad P Bown and Melina Kolb, 'Trump's Trade War Timeline: An Up-to-Date Guide' (*Peterson Institute for International Economics*) 4–5 <https://www.piie.com/sites/default/files/documents/trump-trade-war-timeline.pdf> accessed 28 September 2025.

[5] See Chad P Bown, 'Industrial Policy for Electric Vehicle Supply Chains and the US-EU Fight over the Inflation Reduction Act' (*Peterson Institute for International Economics*, 2 May 2023) 11–13 <https://www.piie.com/publications/working-papers/2023/industrial-policy-electric-vehicle-supply-chains-and-us-eu-fight> accessed 28 September 2025.

[6] Henok Asmelash, 'The First Ten Years of WTO Jurisprudence on Renewable Energy Support Measures: Has the Dust Settled Yet?' (2022) 21(4) World Trade Review 455, 471.

[7] See ibid 475–76; Joost Pauwelyn, 'WTO Dispute Settlement Post 2019: What to Expect?' (2019) 22(3) Journal of International Economic Law 297, 297, 303–316; Howse and Langille (n 1) 38.

[8] Andréia Costa Vieira, 'The WTO and the Paris Agreement: A Dialogue on Climate Change Mitigation' (2020) 11(2) Beijing Law Review 399, 400–403; 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' (2018) 21(3) Journal of International Economic Law 621, 621.

[9] Paris Agreement to the United Nations Framework Convention on Climate Change, 12 December 2015, 3156 UNTS 79; 'Paris Agreement, Status' (*United Nations Treaty Collection*) <https://treaties.un.org/pages/View Details.aspx?chapter=27&clang=_en&mtdsg_no=XXVII-7-d&src=TREATY#7> accessed 28 September 2025.

[10] Paris Climate Agreement arts 2, 3, and 4. Around 100 countries seek a non-binding advisory opinion from the International Court of Justice on state responsibility under international law with respect to climate change.

[11] What Is the Paris Agreement? (*UNFCCC*) <https://unfccc.int/process-and-meetings/the-paris-agreement> accessed 28 September 2025.

required to significantly reduce emission,"[11] countries would likely prefer subsidies as their primary policy tool for their green transition, considering that subsidies are easily doable and politically palatable.[12]

Presuming that the Paris Climate Agreement implicitly calls for government intervention into the economy, this Article further asserts that Members are unlikely to accomplish their Paris Agreement commitments without providing certain forms of green subsidies. However, WTO Members—all of them have also been Parties to the Paris Agreement with the exception of Taiwan[13] and currently withdrawing the United States[14] —are legally constrained by strict subsidy rules regulated under the Agreement on Subsidies and Countervailing Measures ("the SCM Agreement").[15]

At this juncture, a couple of important inquiries arise. The initial question is whether and to what extent WTO rules allow Members to provide green subsidies. This article, with the help of AB rulings and the literature, finds that the design of existing trade rules does not yield enough room for green subsidies, thereby demonstrating a discrepancy between environmental and trade commitments.[16] Neither the WTO Appellate Body through interpretation nor WTO Members through multilateral efforts could have resolved such a discrepancy.[17] No reasonable one would expect this issue to be rectified by the now-defunct AB in the near future. Then, the second question would follow: What options does the international trading system have at its disposal? This article evaluates the suggestions provided by the literature and concludes that all of them seem imminently impracticable given the polarized multilateral trade framework. Evidently, WTO Members currently have no choice but to comply with one of the international commitments while remaining in violation of the other. Some developed WTO Members have already chosen to deploy allegedly WTO-inconsistent, protectionist subsidies. If that is the case, the third question needs to be scrutinized: Considering the contagious nature of the protectionist trade policies, what could be the ramifications of the prevalent use of green subsidies? This article, while capturing that the international community began recognizing the impending danger or existence of a green subsidy war at a time when multilateral remedial option (i.e., WTO dispute settlement system) is deadlocked, concludes by arguing that WTO Members should now be alarmed for and prepared to a potential green countervailing duty ("CVD") war since unilateral remedies—i.e., CVDs—remain only available tolls against trade distorting, massive green subsidies.

[12] Dani Rodrik, 'Green Industrial Policy' (2014) 30(3) Oxford Review of Economic Policy 469, 473.

[13] The reason for Taiwan's exclusion from the Paris Agreement is because of its non-UN status, resulting from China's claim over its territory, not because of its unwillingness to mitigate climate change. See 'Combating Climate Change-Taiwan Can Help' (*Ministry of Foreign Affairs, Republic of China (Taiwan)*, 13 September 2018) <https://en.mofa.gov.tw/News_Content.aspx?n=1575&s=34810&utm> accessed 28 September 2025.

[14] See 'Putting America First in International Environmental Agreements' (*The White House*, January 20, 2025) <https://www.whitehouse.gov/presidential-actions/2025/01/putting-america-first-in-international-environmental-agreements/> accessed 28 September 2025; Jonathan D Haskett, 'U.S. Withdrawal from the Paris Agreement: Process and Potential Effects' (Congressional Research Service, 2025) CRS Report R48504 1 <https://www.congress.gov/crs-product/R48504> accessed 28 September 2025.

[15] See, in general, Agreement on Subsidies and Countervailing Measures (15 April 1994) Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1869 UNTS 14.

[16] Mark Wu and James Salzman, 'The Next Generation of Trade and Environment Conflicts: The Rise of Green Industrial Policy' (2014) 108(2) Northwestern University Law Review 401, 408; Andrew Green, 'Trade Rules and Climate Change Subsidies' (2006) 5(3) World Trade Review 377, 377–379; Anamika Shukla, 'The Future of Trade and Environment: A Roadmap for Reconciling Two Competing Goals' (2024) 58(1) Journal of World Trade 115, 124; Douglas Nelson and Laura Puccio, 'Nihil Novi Sub Sole: The Need for Rethinking WTO and Green Subsidies in Light of United States – Renewable Energy' (2021) 20(4) World Trade Review 491, 503; Steve Charnovitz, 'Green Subsidies and the WTO' (2014) Policy Research Working Paper 7060 World Bank 72 <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/607731468331864128/gre en-subsidies-and-the-wto> accessed 28 September 2025.

[17] Henok Asmelash, "The WTO Dispute Settlement System as a Forum for Climate Litigation?' (2023) 32(2) Review of European, Comparative & International Environmental Law 321, 332; *Abu Dhabi Ministrial Declaration* WT/MIN(24)/DEC (World Trade Organization, 2 March 2024) (not even mentioning such an issue in their Declaration).

I. The Paris Climate Agreement and Rationale for Green Subsidies

A. The Ends of the Paris Agreement

The Paris Climate Agreement sets ambitious global climate goals: "[h]olding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels[.]"[18] To achieve this goal, the Agreement envisages so called "bottom-up" structure with a tracking mechanism.[19] According to Article 4, each Party is initially required to "prepare, communicate and maintain successive nationally determined contributions ["NDCs"] that it intends to achieve."[20] Thus, Parties are responsible for setting their *own* mid- and long-term climate targets and action plans, tailored to their specific circumstances. Once Parties have submitted their first NDCs to the Secretariat, they are obligated to update and share their NDCs every five years for the evolution of whether the necessary steps have been taken and the cumulative progress envisioned has been achieved.[21]

Article 14 of the Agreement sets the *global stocktake* process where Parties periodically gather "to assess the *collective* progress towards achieving the purpose of this Agreement and its long-term goals."[22] Accordingly, the first global stocktake dialogue was held in 2023, and its subsequent Synthesis Report—a technical evaluation of the past five-year period—contains only one satisfactory news: all the Parties have submitted their NDCs.[23] All countries, at a minimum, have their own climate targets and concrete programs for climate change mitigation. The Report, however, found that "the world is not on track" in climate change mitigation despite the 7 years of Paris Agreement implementation.[24] According to the Report, to achieve the above-mentioned long-term targets prescribed in the Agreement, governments must swiftly speed up their actions and "support systems transformations that mainstream climate resilience and low GHG emissions development."[25] Hence, Parties are expected to assume a substantial burden of GHG emission reduction and rapidly shift towards a green economy in a relatively short period of time.

B. Lack of the Means: How to Get There?

Although the Paris Agreement's call for and countries' promises to reduce substantial amounts of GHG emissions within a certain period of time are quite an achievement, what means are legitimate to reach such ends remain uncertain. Options include raising pollution standards, requiring information disclosure, pricing carbon, imposing carbon adjustment taxes on imports, removing subsidies on fossil fuels, providing green subsidies, or a combination thereof.[26] Evidently, each policy tool could more or less add up to countries' efforts to reduce GHG emissions. However, since the ultimate goal is to reach *net zero* GHG emissions in a short period, a complete green transition is urgent, requiring a fundamental change in the

[18] Paris Climate Agreement art 2 (1-a).

[19] Rafael Leal-Arcas and others, 'The World Trade Organization and Carbon Market Clubs' (2021) 52(4) Georgetown Journal of International Law 895, 900.

[20] Paris Climate Agreement art 4 (2).

[21] ibid arts 4(9) and 4(12).

[22] ibid art 14 (1) (*emphasis added*).

[23] 'Technical Dialogue of the First Global Stocktake' *United Nations Framework Convention on Climate Change* (8 September 2023) 5 <https://unfccc.int/sites/default/files/resource/sb2023_09_adv.pdf> accessed 28 September 2025.

[24] ibid 11.

[25] ibid 4.

[26] Abhishek Saurav and Brody Viney, 'Catalyzing Investment for Green Growth: The Role of Business Environment and Investment Climate Policy in Environmentally Sustainable Private Sector Development' (*World Bank Group*, November 2020) 10 and 14 <https://documents1.worldbank.org/curated/en/464811610960949219/pdf/Catalyzing-Investment-for-Green-Growth-The-Role-of-Business-Environment-and-Investment-Climate-Policy-in-Environmentally-Sustainable-Private-Sector-Development.pdf> accessed 28 September 2025.

conventional domestic production methods depending on fossil fuel consumption. Thus, countries must embrace a comprehensive green industrial policy.[27]

Green industrial policy—aimed at transitioning from a GHG-producing economy to a net-carbon-natural one—requires at least two initiatives. First, creating new carbon-free industries is vital. Once created, protecting these nascent industries by every means—at least for a certain period—is also inevitable. Second, converting existing GHG-producing industries into more environmentally friendly ones is indispensable. The deployment of these initiatives would attract foreign direct investment, expand technological innovation, create green jobs, establish green supply chains, secure energy needs, and ultimately facilitate countries' climate change mitigation efforts, thereby fulfilling their Paris Agreement obligations.[28] Notably, states are to support such initiatives by providing both disincentives and incentives.

Regarding disincentives, pricing carbon usage could lead to a shift away from accustomed production methods. In such a case, businesses must decide either to pay a carbon price or to convert to more climate-affable production. To maintain the competitiveness of domestic industries, to avert production relocations "from carbon-constrained countries to 'carbon havens,' or countries with laxer climate policy"[29] and to stop potential carbon leakages,[30] some WTO Members are ripe for deploying carbon border adjustment mechanisms.[31] On the other hand, these initiatives also require a certain incentive toolkit, which countries may easily find. All they need is to revisit policies of the industrialization periods and select like-minded policy tolls.[32] Among them, subsidies should play a central role and could be supported by other tools such as local content requirements, trade remedies, import restrictions, and high tariffs.

However, subsidies—the transfer of public resources to private enterprises—are economically controversial and legally restricted. Market-oriented approach holds that subsidies distort markets, misallocate resources, encourage rent-seeking, and provoke retaliatory protectionism, ultimately harming both domestic efficiency and international trade.[33] By contrast, the industrial-policy approach argues that even well-designed markets might be distorted or fail to reach full efficiency; and if so, a government push could be beneficial and even necessary.[34]

A perfect example is the case of electric vehicles ("EVs"). Since transportation-based carbon emissions account for more than one-third of total carbon emissions,[35] countries desire to reduce such emissions by

[27] Ferdi De Ville, 'The Return of Industrial Policy in the European Union' (*GIES Occasional Paper*, January 2023) 1 <https://www.ugent.be/ps/politiekewetenschappen/gies/en/research/publications/gies_papers/2023-global-energy -crisis/pdf-files/10-the-return-of-industrial-policy-in-the-european-union-ferdi-de-ville.pdf> accessed 28 September 2025.

[28] For a similar approach, see Rodrik (n 12) 469–70, 484–89 (primarily focusing on the relationship between green industrial policy and the promotion of green growth).

[29] Frédéric Branger and Philippe Quirion, 'Climate Policy and the "Carbon Haven" Effect' (2014) 5(1) WIREs Climate Change 53, 53.

[30] Carbon leakage is a term described as "the increase in emissions in the rest of the world when a region implements a climate policy, compared to a situation where no policy is implemented." ibid 55.

[31] See ibid 63–68; Asmelash, 'The WTO Dispute Settlement System as a Forum for Climate Litigation?' (n 17) 239.

[32] Wu and Salzman (n 16) 405–06 and 430; Lorenzo Rotunno and Michele Ruta, 'Trade Spillovers of Domestic Subsidies' (*International Monetary Fund Working Paper WP/24/41*, March 2024) 1 <https://www.imf.org/en/Publi cations/WP/Issues/2024/03/01/Trade-Spillovers-of-Domestic-Subsidies-545453> accessed 28 September 2025.

[33] Aaron Cosbey and Petros C Mavroidis, 'A Turquoise Mess: Green Subsidies, Blue Industrial Policy and Renewable Energy: The Case for Redrafting the Subsidies Agreement of the WTO' (2014) 17(1) Journal of International Economic Law 11, 43; Rafi Amir-ud-Din and Asad Zaman, 'Failures of the "Invisible Hand"' (2016) 45(1) Forum for Social Economics 41, 41–43; Gary Horlick and Peggy A Clarke, 'Rethinking Subsidy Disciplines for the Future: Policy Options for Reform' (2017) 20(3) Journal of International Economic Law 673, 676; Anne O Krueger, 'From Trade War to Subsidy War' (*Project Syndicate*, 15 August 2023) <https://www.project-syndicate.org/commentary/us-trade-war-with-china-has-entered-dangerous-new-phase-by-anne-o-krueger-2023-08> accessed 28 September 2025.

[34] Nelson and Puccio (n 16) 498; Cosbey and Mavroidis (n 33) 43–44; Robert Howse, 'Climate Mitigation Subsidies and the WTO Legal Framework: A Policy Analysis' 5 <https://www.iisd.org/system/files/publications/bali_2_cop enhagen_subsidies_legal.pdf> accessed 28 September 2025.

[35] See 'Fact Sheet Climate Change' (*United Nations Sustainable Transport Conference*, October 14, 2021) <https://ww w.un.org/sites/un2.un.org/files/media_gstc/FACT_SHEET_Climate_Change.pdf> accessed 28 September 2025.

promptly accomplishing the transition from the internal-combustion-engine ("ICE") cars to EVs.[36] However, if countries chose a "let the market decide" strategy, such a transition would take decades because of certain constraints that affect individuals' and businesses' behaviors. First, to break people's long-lasting habits and attitudes towards ICE cars, considerable hesitation regarding EVs' efficiency, battery durability, and charging stations needs to be removed. Second, the EV industry still requires technological improvements, rendering research and development investments. Third, the existing giant automotive industry needs major adjustments since such a sector is politically sensitive and has strong, integrated supply chains. Reorienting supply chains and addressing the need for new battery components and plants while ensuring job security are not trivial issues. Lack of direct involvement in the economy is likely to produce no immediate and effective outcomes. However, providing incentives (e.g., subsidies) for both consumers and manufacturers could help alleviate such constraints while accelerating the transition from ICE cars to EVs. The same argument could apply to almost all green industries (e.g., renewables and recycling). Hence, subsidies—if well designed—may be useful for rectifying such market failures.[37]

This article concurs with the latter view. Agitated by the above-listed constraints, states should have no choice but to place subsidies at the center of their green industrial policies to comply with their Paris Agreement commitments *on time*. Ostensibly, some major states adopted such a latter view and began acting towards achieving their ambitious Paris Climate Agreement commitments set out in their NDCs. States, such as China (Made in China 2025),[38] the European Union (the European Green Deal),[39] Japan (the Green Transformation or "GX"),[40] and the United States (the Inflation Reduction Act)[41] have begun spending hundreds of billions of dollars in accordance with their green transformation programs.[42]

At first sight, observing these countries involvement in the fight against climate change is a fantastic development, especially considering that they are the ones who have contributed most to environmental pollution. However, such a trend would undermine international trade law. It is because, although subsidies might be the best option for climate change mitigation, they are strictly regulated under the SCM Agreement. If green subsidies are somewhat not welcomed at the WTO, the widespread use of WTO-inconsistent green subsidies could lead to legal ramifications that might influence all Members' behavior regarding non-compliance with international law.

II. A Brief Examination of the WTO Subsidy Disciplines

The WTO subsidy discipline was originally established in the General Agreement on Tariffs and Trade

[36] Bown (n 5) 4–10.

[37] Cosbey and Mavroidis (n 33) 43; Howse, 'Climate Mitigation Subsidies and the WTO Legal Framework: A Policy Analysis' (n 34) 5–7.

[38] 'China Sets $63 Billion to Pay Subsidies Owed to Renewables Firms' *Bloomberg.com* (March 14, 2022) <https://www.bloomberg.com/news/articles/2022-03-14/china-sets-63-billion-to-pay-subsidies-owed-to-renewables-firms> accessed 28 September 2025.

[39] Jennifer Rankin, 'Leaked EU Plan Reveals Response to US and Chinese Green Subsidies' *The Guardian* (31 January 2023) <https://www.theguardian.com/business/2023/jan/31/eu-plan-us-china-green-subsidies-state-aid-rules> accessed 28 September 2025.

[40] 'IMF Country Report Japan No. 23/127' (2023) Country Report 23/127 98 <https://www.imf.org/en/Publications/CR/Issues/2023/03/30/Japan-2023-Article-IV-consultation-Press-Release-Staff-Report-and-Statement-by-the-531587> accessed 28 September 2025.

[41] David Kleimann and others, 'Green Tech Race? The US Inflation Reduction Act and the EU Net Zero Industry Act' (2023) 46(12) The World Economy 3420, 3423.

[42] John Springford and Sander Tordoir, 'Europe Can Withstand American and Chinese Subsidies for Green Tech' <https://www.cer.eu/sites/default/files/pbrief_JS_ST_green_tech_9.6.23.pdf> accessed 28 September 2025; Zhengda Li and others, 'Environmental Taxes, Green Subsidies, and Cleaner Production Willingness: Evidence from China's Publicly Traded Companies' (2022) 183 Technological Forecasting and Social Change 1, 1-13; Hugo Dixon, 'Green Subsidy Race May Be What the World Needs' *Reuters* (6 February 2023) <https://www.reuters.com/breakingviews/green-subsidy-race-may-be-what-world-needs-2023-02-06/> accessed 28 September 2025; Rotunno and Ruta (n 32).

("GATT") Articles VI and XVI[43] and then further detailed in a specific, separate agreement: the SCM Agreement. According to Article 1.1 of the SCM Agreement, a subsidy exists if: (i) a government or public body provides a financial contribution or income or price support; and (ii) the benefit is transferred to the recipient. This financial contribution (or income or price support) should make a recipient "better off," placing the recipient in a more advantageous position in the marketplace. While the legal determination of a subsidy under Article 1.1 requires these two elements, such actions are still viewed as innocuous subsidies. For a harmful subsidy though, governments should provide subsidies *selectively*. Clearly, the SCM Agreement introduces a new element for a *harmful* subsidy: specificity. To be considered a harmful subsidy, the specificity test —"help[ing] differentiate countervailable from non-countervailable subsidies,"[44]—is required. Thus, only specific subsidies are not welcomed in international trade law.

When categorizing subsidies, the SCM Agreement envisages the traffic light approach and provides three subsidy categories: red light (prohibited subsidies); yellow light (actionable subsidies); and green light (non-actionable subsidies).[45] Each form of subsidy produces different legal consequences for subsidy-deploying and subsidy-affected Members. According to Article 3, subsidies *conditional on* export performance or the use of local content shall fall into the prohibited subsidy category, and "Member[s] shall neither grant nor maintain" these actions.[46] Thus, financial contributions by governments or public bodies conferring benefits contingent on export performance or the use of a certain amount of domestic products do not legally require a further specificity test and are viewed as trade distorting, thereby *illegal* under international trade law.

Unlike prohibited subsidies, actionable subsidies are less trade distortive and therefore not *automatically* deemed specific and illegal. Members, from time to time, provide such subsidies, which *may* be the subject of a remedy in the form of either a WTO dispute or a countervailing measure, *if* a subsidy *adversely affects* another Member in certain forms.[47] To determine whether a subsidy can fall into the actionable subsidy category, both specificity and one form of adverse effects under Article 5 (i.e., injury to a domestic industry, nullification or impairment of benefits, and serious prejudice) have to be proven.[48] Hence, the actionable subsidy category can be viewed as a residual subsidy category that encompasses all specific subsidies causing adverse effects, except those that fall into the prohibited subsidy category.[49]

Article 8 of the SCM Agreement regulating non-actionable subsidies *aims to greenlight* certain types of subsidies. The rationale behind the legalization of non-actionable subsidies is that not all subsidies necessarily cause trade distortion and that some government assistance—for promoting research activities and development of disadvantage regions or accomplishing new environmental requirements, among others —could be expedient even though they may cause adverse effects.[50] Although envisaging a greenlight for certain subsidies, Article 8 *was* non-permanent, applicable for only a five-year period, and subject to renewal by the SCM Committee.[51] However, at the SCM Committee meeting in late 1999, "no consensus was reached by the Committee to extend Articles 6.1, 8 and 9, either as drafted or in modified form. Articles 6.1, 8 and 9

[43] General Agreement on Tariffs and Trade 1994, April 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1867 UNTS 187. arts VI and XVI.

[44] Raj Bhala, *Dictionary of International Trade Law* (LexisNexis 2008) 427.

[45] Cosbey and Mavroidis (n 33) 38–39.

[46] SCM Agreement art 3.

[47] See Henok Birhanu Asmelash, 'Energy Subsidies and WTO Dispute Settlement: Why Only Renewable Energy Subsidies Are Challenged' (2015) 18(2) Journal of International Economic Law 261, 274.

[48] SCM Agreement art 5 (*original footnotes omitted*).

[49] Henok Birhanu Asmelash, 'The Regulation of Energy Subsidies in the WTO: Bridge or Bottleneck for Sustainable Energy Transition?' (PhD Dissertation, Bocconi University 2019) 236–37.

[50] ibid 246; SCM Agreement art 8.

[51] SCM Agreement art 31.

have therefore lapsed."[52] Since then, due to the lack of consensus to extend the duration of this provision, Article 8 has remained null and void, and, thereby, subsidies meeting the requirement of Article 8.2 would fall into either prohibited or actionable subsidy categories.[53]

What are the consequences if Members provide prohibited and/or actionable subsidies? The SCM Agreement offers WTO Members two options: a multilateral way through the WTO Dispute Settlement Body ("DSB") and a unilateral way via CVDs. As a rule, Members may choose the latter *only* when subsidized imported products adversely affect their domestic industry.[54]

While procedural and substantive remedy rules for prohibited and actionable subsidies might differ, the WTO's multilateral dispute settlement system might be used as a vehicle in both occasions.[55] In the case of prohibited subsidies, if any Member, regardless of being affected by a subsidy, believes that a prohibited subsidy is being granted or maintained by another Member, such a Member may request consultations first. If parties cannot agree on a mutual solution, then, any Member attending the consultations may request an establishment of a panel at the DSB.[56] At the end of the litigation process, if a subsidy is found prohibited, such a subsidy shall be removed immediately.[57] Unlike prohibited subsidies, only adversely affected WTO Members can challenge actionable subsidies. Similar to prohibited subsidies, in case of a lack of mutual solution at the end of consultations, a panel could be established.[58] If a subsidy is found actionable, thereby causing one of the forms of adverse effects under Article 5, the subsidizing Member has two options: "tak[ing] appropriate steps to remove the adverse effects or … withdraw[ing] the subsidy."[59] Thus, as opposed to prohibited subsidies, a losing Member does not necessarily have to withdraw the subsidy, but it can also decide to remove its adverse effects.[60] Where recalcitrance occurs in each case—i.e., if a losing Member does not comply with a panel or AB recommendations—or parties cannot agree on compensation, a winning Member is entitled to obtain DSB authorization for taking proportionate countermeasures, the amount of which might be determined by arbitration.[61]

Although the SCM Agreement, to the extent possible, designed a multilateral remedial system through the DSB to deter Members from adopting prohibited and actionable subsidies, such a system has not been functioning properly. If a subsidy providing Member loses its dispute at the panel stage, it is entirely up to that Member to appeal the panel report to the Appellate Body, which, as of now, does not have judges to hear the dispute (i.e., "appeal into void"). Thus, the *de facto* situation might hinder the production of DSB authorization for countermeasures, making unilateral remedies the only option left at the Members' disposal.

Currently, the most viable option for WTO Members to counteract another Member's unfair trade practices (i.e., subsidies in this case) is a unilateral imposition of CVDs. The SCM Agreement defines a CVD as "a special duty levied for the purpose of *offsetting* any subsidy bestowed directly or indirectly upon the manufacture,

[52] World Trade Organization, 'WTO Analytical Index, Article 31 Provisional Application' <https://www.wto.org /english/res_e/publications_e/ai17_e/subsidies_art31_jur.pdf> accessed 28 September 2025 (*emphasis added*).

[53] Asmelash, 'The Regulation of Energy Subsidies in the WTO: Bridge or Bottleneck for Sustainable Energy Transition?' (n 49) 250–52.

[54] SCM Agreement art 10 (footnote 35).

[55] See ibid arts 4 and 7; Dominic Coppens, *WTO Disciplines on Subsidies and Countervailing Measures: Balancing Policy Space and Legal Constraints* (Cambridge University Press 2014) 198.

[56] SCM Agreement arts 4.1 and 4.4.

[57] ibid arts 4.7, 4.8 and 4.9.

[58] ibid arts 4 and 7.

[59] SCM Agreement art 7.8.

[60] ibid art 7.9; Coppens (n 55) 211.

[61] SCM Agreement arts 4.10, 7.9 and 7.10.

production or export of any merchandise."[62] Imposing a CVD is conditional, though: only Members whose industry has been *injured* because of a subsidy can use it.[63] In other words, if a Member's specific subsidy causes an injury in the domestic industry of another Member, the SCM Agreement empowers the latter to directly and unilaterally punish the unfair trade practices of the former by imposing *additional* tariffs on subsidized products, a decision of which is obviously politically sensitive, involving diplomatic decision-making, as well.[64] Perhaps to intercept potential diplomatic tensions as well as to prevent the arbitrary use of CVDs, the SCM Agreement sets out such a system with strict and meticulous procedural and substantive rules.[65] Briefly, the CVD process begins with an official initiation for investigation and ends with a final determination. If all substantive legal elements—i.e., subsidy, specificity, injury to a domestic industry, and causation—are supported with sufficient evidence, a formal CVD investigation can be conducted, and a CVD might be imposed on subsidized imported products.[66]

In sum, the SCM Agreement does not only discourage trade distortion and preserve global efficacy by protecting industries against specifically subsidized imports but also offers and strictly regulates remedies to dissuade Members from using subsidies prevalently for mere protective and unfair trade purposes.[67] This scrutiny clearly demonstrates how inflexible the current subsidy regime is by design. Since the current provisions of the SCM Agreement do not, explicitly or implicitly, provide immunity for green subsidies, it can be concluded that the Agreement itself was neither designed for nor does it allow comprehensive green subsidies. Considering such an inflexible legal structure of subsidies, the section below analyzes if green subsidies—prerequisites for green transition—are somewhat justifiable under other rules of the WTO discipline.

III. Lack of a Policy Space for Green Subsidies under the WTO System

Sustainable development is one of the objectives of the WTO, precisely commemorated in the preamble to the Agreement Establishing the World Trade Organization ("WTO Agreement"), with an emphasis on the necessity of the optimal use of the world's resources and protection of the environment.[68] While capturing the importance of such an issue and creating the Committee on Trade and Environment almost 30 years ago, the WTO still lacks a separate agreement specifically regulating and balancing the relationship between trade and the environment.[69] Thus, the analysis of whether and to what extent otherwise prohibited or actionable green subsidies are justifiable under the WTO discipline requires scrutiny of environment-related WTO rules.

Is it possible to use GATT Article XX, General Exceptions, to justify green subsidies? Article XX grants Members a window of opportunity to legally breach particular WTO rules under certain conditions. To better answer the question above and understand the design of GATT Article XX, it is necessary to provide the chapeau and some environment-related parts of the Article:

[62] ibid art 10 (footnote 36) (*emphasis added*).

[63] See Coppens (n 55) 228.

[64] ibid 220–22.

[65] SCM Agreement art 10.

[66] For a detailed analysis of the substantive elements of CVDs, see Coppens (n 55) 227–242.

[67] See Asmelash, 'The Regulation of Energy Subsidies in the WTO: Bridge or Bottleneck for Sustainable Energy Transition?' (n 49) 206–08.

[68] See Marrakesh Agreement Establishing the World Trade Organization, 15 April 1994, 1867 UNTS 154.

[69] Vieira (n 8) 399–400; Shukla (n 16) 118.

> "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:
>
> (a) necessary to protect public morals;
>
> (b) necessary to protect human, animal or plant life or health;
>
> ...
>
> (d) necessary to secure compliance with laws or regulations which are not inconsistent with the provisions of this Agreement,
>
> ...
>
> (g) relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption;
>
> ...
>
> (j) essential to the acquisition or distribution of products in general or local short supply;
> ..."[70]

When the WTO allows Members to impose restrictive policy tools *exceptionally*, such a permission is typically granted under strict procedural and substantive requirements. Invocation of GATT Article XX as a justification for otherwise WTO-inconsistent measures—in this case, trade distorting green subsidies—is not different. It requires a burdensome two-tiered legal analysis,[71] which should be conducted by the "sequence of steps," a method established by the Appellate Body.[72]

First, a measure should satisfy the language in one of the ten paragraphs—from a to j—of Article XX. The Appellate Body when analyzing the first tier established that "for a responding party to justify provisionally a measure under an Article XX exception, two elements must be shown: first, that the measure addresses the particular interest specified in that paragraph; and, second, that there is a sufficient nexus between the measure and the interest protected."[73] Then, second, the measure shall satisfy the requirements of Article XX's chapeau. Accordingly, a normally WTO-inconsistent measure should not be used for arbitrary or merely discriminative purposes that could cause trade friction and distortion. Thus, even though Article XX could be used to justify WTO-inconsistent measures, its design, logic, and narrowly interpreted wording make it extremely difficult to pull.[74] Of course, a Member invoking the exception has the burden of establishing all such elements.[75] The paragraphs below illustrate WTO jurisprudence regarding the implementation of Article XX in environment-related disputes.[76]

Although not directly related to green subsidies, one of the initial disputes was *United States—Gasoline*, where the United States tried to justify its measure under Article XX(g) and was successful—at least at the

[70] GATT 1994 art XX.

[71] Appellate Body Report, *United States–Standards for Reformulated and Conventional Gasoline* (29 April 1996) WT/DS2/AB/R 22.

[72] Appellate Body Report, *India–Certain Measures Relating to Solar Cells and Solar Modules* (14 October 2016) WT/DS456/AB/R para 5.56.

[73] ibid para 5.57 (citing other AB decisions) (*citations omitted*).

[74] Panel Report, *United States–Restrictions on Imports of Tuna* (3 September 1991) GATT DS21/R, 39S/155 (unadopted), para 5.22.

[75] ibid; see also *US–Gasoline AB Report* (n 71).

[76] For a broad discussion on the historical developments of trade rules and environmental measures, thereby "earlier classical cases" and "next generation conflicts," see Wu and Salzman (n 16) 408–15 and 432–35, respectively.

AB level—on establishing that its measure was "related to" conservation of exhaustible natural resources, thereby passing the first tier. However, the Appellate Body still found that the US measure could not satisfy the requirements of the chapeau, so the United States failed in the second tier.[77] Even so, this dispute provided a significant outcome: clean air was recognized as an exhaustible natural resource within the meaning of Article XX(g).[78]

Brazil—Tyres was another dispute that was not directly related to green subsidies but showed another effort to justify a protectionist environmental measure under GATT Article XX.[79] Although Brazil successfully established that its measures were necessary to protect human, animal, or plant life or health under Article XX(b), thereby satisfying the first tier, it failed to pass the chapeau test because its measures were applied in an arbitrary and discriminatory manner through the explicit exclusion of MERCOSUR countries.[80] The importance of this dispute, for this Article, lies in the Appellate Body's recognition that environment-related measures can be considered justifiable within the scope of Article XX.[81] The Appellate Body further asserted that the objectives, necessity, and material contribution of trade-restricting measures should be in a close connection for a possible GATT Article XX justification.[82] Notably, the Appellate Body seemed favorable to the idea that some form of green measures, possibly even subsidies, could be viewed as necessary for climate change mitigation, thus provisionally justifiable under GATT Article XX. However, chapeau requirements disguise such an important view, anyway.

Two of the earliest cases regarding green energy subsidies were *Canada-Renewable Energy* and *Canada-Feed-in Tariff Program*.[83] The Canadian province of Ontario adopted measures to make the production and use of renewable energy prevalent while encouraging local investment in the renewable energy equipment industry in Ontario.[84] But, to be eligible for such programs, electricity producers were required to use domestic goods in their energy production.[85] The European Union and Japan challenged these measures. Unsurprisingly, the Appellate Body found that measures were inconsistent with GATT Article III and Agreement on Trade-Related Investment Measures (TRIMs) Article 2.1.[86] However, these measures were not found prohibited subsidies since Complainants could not establish a conferred benefit.[87] Although this decision also seemed, at that time, a positive sign for clean energy subsidies, the decision to classify such green measures as not prohibited subsidies was not based on their greenness; rather, it was because of a lack

[77] *US – Gasoline AB Report* (n 71) 16–19 and 25–29.

[78] Panel Report, *United States–Standards for Reformulated and Conventional Gasoline* (20 May 1996) WT/DS2/R para 6.37.

[79] To reduce tyre-waste-based risks to public health and the environment, Brazil imposed measures banning the importation of retreated tyres except MERCOSUR members. The European Community challenged such measures on the grounds that they were inconsistent with GATT Articles I, III, XI, and XIII. As expected, the panel found that such measures were inconsistent with GATT Articles III and XI and exercised judicial economy on some other claims. See Panel Report, *Brazil–Measures Affecting Imports of Retreaded Tyres* (17 December 2007) WT/DS332/R paras 2.5, 8.1 and 8.2.

[80] Appellate Body Report, *Brazil–Measures Affecting Imports of Retreaded Tyres* (17 December 2007) WT/DS332/AB/R para 258.

[81] Luca Rubini, 'Ain't Wastin' Time No More: Subsidies for Renewable Energy, The SCM Agreement, Policy Space, and Law Reform' (2012) 15(2) Journal of International Economic Law 525, 559.

[82] *Brazil – Retreaded Tyres AB Report* (n 80).

[83] Due to the close connection between these disputes, the panels and subsequently the Appellate Body issued single documents/reports for these disputes. See Panel Report, *Canada – Certain Measures Affecting the Renewable Energy Generation Sector / Canada – Measures Relating to the Feed-in Tariff Program* (24 May 2013) WT/DS412/R and WT/DS426/R; Appellate Body Report, *Canada – Certain Measures Affecting the Renewable Energy Generation Sector / Canada – Measures Relating to the Feed-in Tariff Program* (24 May 2013) WT/DS412/AB/R and WT/DS426/AB/R.

[84] Steve Charnovitz and Carolyn Fischer, 'Canada–Renewable Energy: Implications for WTO Law on Green and Not-So-Green Subsidies' (2015) 14(2) World Trade Review 177, 177–180.

[85] See Cosbey and Mavroidis (n 33) 11–16; *Canada–Renewable Energy / Feed-in Tariff Panel Report* (n 83), paras 7.216-7.219.

[86] Canada– *Renewable Energy / Feed-in Tariff AB Report* (n 83), para 6.1.

[87] Canada– *Renewable Energy / Feed-in Tariff Panel Report* (n 83), para 7.328.

of evidence to establish the benefit—an integral legal part for a subsidy.[88] Hence, in the eyes of the Panel and Appellate Body, the measures at issue were not even subsidies, and the Appellate Body, which was accused of behaving in an acrobatic manner, refrained from explicitly commenting on the greenness of these subsidies.[89] Interestingly, Canada did not attempt to justify its measures under GATT Article XX.

India-*Solar Cells* was the only case where Respondent—i.e., India—tried to justify its local content requiring green measures[90] using GATT Article XX exceptions.[91] India argued that its measures were: (i) "necessary to secure compliance with laws or regulations" under GATT Article XX(d); and (ii) "essential to the acquisition or distribution of products in general or local short supply" under GATT Article XX(j).[92] First, India asserted that its "measures … have been designed to secure compliance with India's obligations under international law"—i.e., the WTO Agreement's preamble, the UNFCCC, the Rio Declaration on Environment and Development (1992), and other United Nations resolutions.[93] The Panel and Appellate Body decided that since the above instruments were mostly non-binding, only descriptive and hortatory and had insufficient degree of normativity, enforceability, and indirect effects in Indian domestic law, they could not be viewed as "laws and regulations" within the meaning of GATT Article XX(d). Thus, they rejected India's such argument.[94] Second, India also argued that its measures were crucial because of the general and local short supply of solar cells and modules, and thus justifiable under GATT Article XX(j). The Panel decided "that solar cells and modules [we]re not 'products in general or local short supply' in India within the meaning of Article XX(j)"[95] and the Appellate Body upheld the panel's findings and rejected India's assertion.[96] Since India failed to establish "laws and regulations" under Article XX(d) and "in short supply" under Article XX(j), the initial element of the first tier of the two-tiered analysis, the Panel and Appellate Body did not examine the second element of the first tier—i.e., whether such measures were "necessary to" or "essential to" under the related paragraphs—and choose not to conduct further chapeau test (i.e., the second tier).[97]

One would argue, however, that due to recent developments, AB's position in *India-Solar Cells,* decided in 2016, would likely change regarding Indian claims under GATT Article XX(d) and (j). First, the Paris Climate Agreement, enjoining 195 Parties to substantially lower their GHG emissions in a certain period of time, entered into force in late 2016. WTO Members can use the mandate of this *binding* agreement to qualify the initial element of the first tier under GATT Article XX(d). Second, recent history has shown that any product could be in short supply. For instance, the world has bitterly experienced the COVID-19 pandemic between 2020 and 2022 where even medical masks, ventilators, and chips became in short supply.[98] In the case of a grave climate crisis with countries imposing export restrictions on clean energy products, or in the case of a sudden, common application of border carbon adjustment taxes for climate change mitigation, in which

[88] Cosbey and Mavroidis (n 33) 22–29; for the case's broad critique, see, in general, Charnovitz and Fischer (n 84).

[89] See Cosbey and Mavroidis (n 33) 28–45.

[90] In 2010, India launched the Jawaharlal Nehru National Solar Mission to promote solar energy production. The program included domestic content requirements as a condition for eligibility to sell electricity to the Indian government. The United States, as the complainant, argued that India's measures were inconsistent with Article III:4 of the GATT and Article 2.1 of the TRIMs Agreement. Panel Report, *India–Certain Measures Relating to Solar Cells and Solar Modules* (14 October 2016) WT/DS456/R paras 2.1 and 3.1.

[91] Asmelash, 'The First Ten Years of WTO Jurisprudence on Renewable Energy Support Measures' (n 6) 466.

[92] For the analysis of the wording "necessary to" and "essential to" in Article XX(d) and (j), respectively, see *India – Solar Cells AB Report* (n 72), paras 5.45 and 5.92.

[93] ibid paras 5.141 (footnote 386) and 5.149.

[94] ibid paras 5.113-5.151.

[95] India– *Solar Cells Panel Report* (n 90), para 7.3.2.5.

[96] India– *Solar Cells AB Report* (n 72), para 6.4.

[97] ibid paras 6.5 and 6.7.

[98] Peter Goodman and Niraj Chokshi, 'How the World Ran Out of Everything' *The New York Times* (1 June 2021) <h ttps://www.nytimes.com/2021/06/01/business/coronavirus-global-shortages.html> accessed 28 September 2025.

producers would need to immediately convert more climate-affable production to be exempted from such border adjustments, no one would guarantee that green energy equipment will not be in short supply.[99] Hence, for WTO Members, the COVID-19 pandemic experience on the shortage of even basic products might be a convincing argument to qualify the initial element of the first tier under GATT Article XX(j) for their local content requiring green measures, including subsidies.

Even if, for a moment, we consider that the above arguments might be accepted by the now-dysfunctional Appellate Body, Members would still have to prove that these measures: (i) are "necessary to" or "essential to" under the related paragraphs; and (ii) do not result in "arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade." The relatively more environment-related paragraphs of Article XX—i.e., paragraphs (b) and (g), which have not been invoked before the WTO adjudication to justify green subsidies—will be no different and will face exactly the same scrutiny.

The Dispute Settlement Body has dealt with several other disputes, most of which constitute green measures with local content requirements.[100] While some disputes have never seen panel and/or AB stages, the total of four cases were litigated regarding green energy measures. In these cases, the panel and/or Appellate Body did not address the violation allegations under the SCM Agreement on the grounds of either judicial economy or lack of evidence to support a benefit.[101] Thus far, neither the panels nor the Appellate Body have declared that renewable energy subsidies containing domestic content requirements are (in)consistent with the SCM Agreement nor have they commented on whether domestic production green subsidies can be justified under GATT Article XX.[102] Because of the AB's such attitudes, Cosbey and Mavroidis (2014) argue that Members can no longer rely on the AB's judicial acrobatics.[103]

While the WTO jurisprudence successfully evaded enlightening Members on the available policy space for green subsidies, particularly under GATT Article XX, thereby sweeping this issue under the carpet,[104] this Article needs to browse the literature for the discussion on whether green subsidies can be justified under GATT Article XX.[105] Some scholars seemed optimistic that GATT Article XX could be used as a defense and justification for green measures[106] and subsidies.[107] However, most trade experts remained skeptical because of the hardships of passing all the sequence of steps under Article XX.[108] For them, the difficulties

[99] For a similar approach, see Asmelash, 'The First Ten Years of WTO Jurisprudence on Renewable Energy Support Measures' (n 6) 471.

[100] ibid 459 (providing WTO disputes on renewable energy measures); Nelson and Puccio (n 16) 495. For the purpose of updating Table 1, we should add at least one more case: United Kingdom—Measures Relating to the Allocation of Contracts for Difference in Low Carbon Energy Generation, DS612, requested consultations on March 28, 2022).

[101] ibid 464 and 470; Nelson and Puccio (n 16) 492.

[102] Asmelash, 'The First Ten Years of WTO Jurisprudence on Renewable Energy Support Measures' (n 6) 469–470.

[103] Cosbey and Mavroidis (n 33) 42.

[104] Asmelash, 'The First Ten Years of WTO Jurisprudence on Renewable Energy Support Measures' (n 6) 455 and 471.

[105] See ibid; Howse, 'Climate Mitigation Subsidies and the WTO Legal Framework: A Policy Analysis' (n 34); Rubini (n 81); Cosbey and Mavroidis (n 33); Charnovitz and Fischer (n 84); Asmelash, 'Energy Subsidies and WTO Dispute Settlement' (n 47); Nelson and Puccio (n 16); Asmelash, 'The WTO Dispute Settlement System as a Forum for Climate Litigation?' (n 17); Arianna Valeriani, 'Renewable energy subsidies and WTO law' (*Ius In Itinere*, 13 July 2019) <https://iusinitinere.it/renewable-energy-subsidies-and-wto-law/> accessed 28 September 2025.

[106] Leal-Arcas and others (n 19) (analyzing whether GATT Article XX exceptions could be invoked to justify carbon border adjustment taxes and measures).

[107] Howse, 'Climate Mitigation Subsidies and the WTO Legal Framework: A Policy Analysis' (n 34) 25; Charles E Di Leva and Xiaoxin Shi, 'The Paris Agreement and the International Trade Regime: Considerations for Harmonization' (2017) 17(1) Sustainable Development Law & Policy 20, 26–27; Green (n 16) (stating that GATT Article XX "exceptions are likely broad enough to cover most environmental measures").

[108] Rubini (n 81) 559; Cosbey and Mavroidis (n 33); Charnovitz and Fischer (n 84); Asmelash, 'Energy Subsidies and WTO Dispute Settlement' (n 47); Hyuntaik Lee, 'The Presumption of Conformity for Climate Measures: Reconciling the Climate Change Regime and the WTO' (2022) 17(2) Asian Journal of WTO and International Health Law and Policy 449; Nelson and Puccio (n 16); Asmelash, 'The First Ten Years of WTO Jurisprudence on Renewable Energy Support Measures' (n 6).

lie in GATT Article XX's necessity and meticulous chapeau requirements.[109]

Although the Appellate Body acknowledges that the phrase "necessary to" in GATT Article XX should not always be interpreted as "indispensable to,"[110] Rubini argues that "necessity analysis is the determination of whether there are less trade-restricting alternatives available to achieve the same aim," yet such a determination would be based on "mere academic speculation."[111] Keeping also in mind the AB rulings in *Turkey—Textiles*, *US – Gambling*, and elsewhere, if a sharp trade mind at panel and/or AB stages successfully establishes that a less trade-restricting alternative is "reasonably available" for climate change mitigation, the judges could easily reverse such "necessary to" or "essential to" claims, thereby resulting in a failure of provisional GATT Article XX justification.[112] Indeed, some trade experts have already called that pricing carbon in concert with placing a carbon border adjustment mechanism is the "first best" and, thereby, less trade distorting policy option to mitigate climate change.[113] If this is the case, any green subsidy, regardless of having local content requirements, would fall into the more trade-restricting alternative category and be viewed as less necessary for climate change mitigation. This approach clearly limits Members' ability to choose trade policy tools that best suit their needs. It could also presage the creation of an implicit binding international rule to push Members towards an obligatory alternative, meaning that without initially implementing a carbon tax and carbon border adjustment mechanism, Members should not try to justify their green subsidies under GATT Article XX.

More importantly, even if a measure passes the first tier, it is still subject to further analysis of GATT Article XX's introductory clause, the chapeau, to ensure that the measure is not applied in a manner that abuses the exceptions.[114] Such a heavy burden of proof, i.e., showing of non-arbitrariness, justifiability, and non-disguised restrictiveness on international trade, also "rests on the party invoking the exception."[115] Because of their apparent unjustifiable discriminatory nature, Rubini (2012), Cosbey and Mavroidis (2014), Nelson and Puccio (2021), and Asmelash (2022) posit that domestic content requiring subsidies would have no chance to survive in the chapeau test.[116] Cosbey and Mavroidis further claimed that (green) subsidies "would almost axiomatically fail the test of consistency with the chapeau of Article XX GATT which calls for absence of discrimination across countries where similar situations prevail: it cannot have been the intent of WTO Members to allow discriminatory payment of subsidies only to national firms."[117]

In conclusion, because of the AB's failure to explicitly comment on the balance between GATT Article XX and green subsidies, a litigation-based precedent could not be established, resulting in a great uncertainty. Seemingly, the requirements under GATT Article XX would hinder any efforts to justify green measures or subsidies, particularly for those with domestic content requirements although domestic production subsi-

[109] Green (n 16) 409–10; see Rubini (n 81) 567; Lee (n 108) 459; Leal-Arcas and others (n 19) 967–69; Espa and Marín Durán (n 8) 26.

[110] *Brazil – Retreaded Tyres AB Report* (n 80), para 150.

[111] Rubini (n 81) 567–68.

[112] Appellate Body Report, *United States – Measures Affecting the Cross-Border Supply of Gambling and Betting Services* (20 April 2005) WT/DS285/AB/R paras 309 and 311 (noting that "a responding party need not identify the universe of less trade-restrictive alternative measures and then show that none of those measures achieves the desired objective. .... If, however, the complaining party raises a WTO-consistent alternative measure that, in its view, the responding party should have taken, the responding party will be required to demonstrate why its challenged measure nevertheless remains 'necessary' in the light of that alternative or, in other words, why the proposed alternative is not, in fact, 'reasonably available.'"); see also Appellate Body Report, *Turkey – Restrictions on Imports of Textile and Clothing Products* (19 November 1999) WT/DS34/AB/R para 62.

[113] See Bown (n 5) 3 and 15–16.

[114] *US – Gasoline AB Report* (n 71).

[115] ibid 22–23.

[116] See Rubini (n 81) 567; Cosbey and Mavroidis (n 33) 46; Nelson and Puccio (n 16) 495–496; Asmelash, 'The First Ten Years of WTO Jurisprudence on Renewable Energy Support Measures' (n 6) 477–78.

[117] Cosbey and Mavroidis (n 33) 35.

dies could find some leeway under WTO discipline.[118] Due to this uncertainty and lack of confidence in the now-defunct Appellate Body, the literature offers some recommendations for ways forward.

IV. Abundance of Solutions but Lack of the Will

The first option is the resurrection of Article 8 of the SCM Agreement.[119] If the original version of Article 8 had existed, would this provision have been useful for the current *massive* environmental subsidies? The literature largely opposes such an idea on the grounds of Article 8.2(c)'s "rigorous criteria."[120] Indeed, even if it existed, governments would only have been able to provide environmental subsidies to *existing facilities* if laws and/or other regulations required such an expensive and burdensome environmental adaptations. Moreover, because of the limited scope of Article 8.2(c), such a subsidy had to be one-time, non-recurring, limited to only 20% of the cost of adaptation, and available to all firms.[121]Thus, even if Article 8.2 were still in force, its design would not have provided a legal panacea for WTO Members, some of which have already begun implementing massive environmental subsidy programs, worth hundreds of billions of dollars, which could have apparently constituted well beyond the scope of Article 8.2.

The panacea, however, seems to be amending certain WTO rules. Green, back in 2006, proposed adopting an environmental exception under GATT Article XX.[122] Rubini, in 2012, also urged WTO Members not to waste their time and argued that "law reform is the first-best option."[123] The majority of trade scholars shared similar views and pointed out the need to amend WTO rules to create enough space for green subsidies.[124] However, legal reform is an arduous, intricate, and protracted process since Article X of the WTO Agreement requires both: (i) at least two-third majority (or consensus on certain occasions) at the Ministerial Conference; and (ii) acceptance of the two-thirds majority of WTO Members (i.e., pursuant to their domestic laws).[125]

Making a new agreement is a time-consuming process, as well. To illustrate, although the need for an environment-favored agreement to limit fishery subsidies was on the WTO agenda, it took more than two decades to formally conclude this agreement.[126] Finally, the Agreement on Fisheries Subsidies[127] was accepted in 2022 and came into effect on September 2025 after two-thirds of WTO members had submitted

[118] Rubini (n 81) 554–55 and 567.

[119] See Asmelash, 'Energy Subsidies and WTO Dispute Settlement' (n 47) 273; Valeriani (n 105); Nelson and Puccio (n 16) 504.

[120] Asmelash, 'The First Ten Years of WTO Jurisprudence on Renewable Energy Support Measures' (n 6) 478; Cosbey and Mavroidis (n 33) 42; Rubini (n 81) 555, 563 and 577.

[121] SCM Agreement arts 8.2 (c) and 8.3.

[122] Green (n 16) 409–11.

[123] Rubini (n 81) 570.

[124] See Eliason A, 'Using the WTO to Facilitate the Paris Agreement: A Tripartite Approach' (2019) 52(3) Vanderbilt Journal of Transnational Law 545, 564–571; Nelson and Puccio (n 16) 504; Horlick and Clarke (n 33) 696; Charnovitz (n 16) 59–74; Rafael Lima Sakr, 'Beyond History and Boundaries: Rethinking the Past in the Present of International Economic Law' (2019) 22(1) Journal of International Economic Law 57, 89–90; Susanne Droege and others, 'The Trade System and Climate Action: Ways Forward under the Paris Agreement' (2017) 13(2) South Carolina Journal of International Law & Business 195, 246; Lee (n 108) 466 and 473–74; Leal-Arcas and others (n 19) 974–75; Cosbey and Mavroidis (n 33) 42–46; Asmelash, 'The WTO Dispute Settlement System as a Forum for Climate Litigation?' (n 17); Luca Rubini, ''The Good, the Bad, and the Ugly.' Lessons on Methodology in Legal Analysis from the Recent WTO Litigation on Renewable Energy Subsidies' (2014) 48(5) Journal of World Trade 895, 933–4; Kleimann and others (n 41) 3421; Robert Gulotty, 'WTO Subsidy Disciplines' (2022) 21(3) World Trade Review 330, 330; Espa and Marín Durán (n 8) 622; Sait Akman and others, 'Reforming the WTO through Inclusive and Development-Friendly Plurilaterals' (2023) 57(6) Journal of World Trade 875, 876–77.

[125] Agreement Establishing WTO (n 68) art X.

[126] Mitchell Lennan and Stephanie Switzer, 'Agreement on Fisheries Subsidies' (2023) 38(1) International Journal of Marine and Coastal Law 161, 164.

[127] Asmelash, 'The WTO Dispute Settlement System as a Forum for Climate Litigation?' (n 17) 330 (stating that the "agreement represents the first-ever agreement in the history of the multilateral trading system that favours environmental protection over trade promotion as its primary objective.").

their ratification notifications to the WTO.[128] Given the political and geo-economic challenges facing the current trade framework and the domestic political hardships associated with obtaining congressional or parliamentary approval in the ratification processes of at least two-thirds of 166 WTO Members (i.e., 100 Members), accomplishing legal changes or placing a brand new agreement on green subsidies is, at least in the short run, nearly impossible.[129] Indeed, Asmelash aptly put that WTO Members' "lack of appetite to initiate legal reform is understandable given that they have already bitten more than they can chew."[130]

Instead of pressuring this almost dead-end path through multilateral fora, some WTO Members have embraced the plurilateral approach, which is the second-best alternative to reforming the WTO.[131] According to Article III:1 of the WTO Agreement, plurilateral trade agreements are binding for those who have accepted them, but not for those that have not.[132] Recently, some like-minded WTO Members, through a plurilateral way, have created different topic groups.[133] However, no concrete achievements have been made through this approach. Although plurilateralism could be viewed as being against the spirit of the multilateral, consensus-based WTO,[134] it seems to be one of the most viable options for reforming the rules-based system. As Akman and others insightfully observed, the original GATT 1947 was also a plurilateral pact involving 23 countries, and later, tens of new countries eagerly joined the club.[135] Thus, these prospective plurilateral agreements, if made in an inclusive manner, could be embraced by other Members later in time and have huge potential to become multilateral ones. Yet, if they are not made in an inclusive manner, the excluded Members may become more aggressive, triggering unexpected consequences and further WTO non-compliance.

Utilizing the waiver procedure outlined in the WTO Agreement is another option.[136] Under Article IX:3 of the WTO Agreement, in the case of the existence of an exceptional circumstance, which the alarming nature of climate change should perfectly fit for this provision,[137] the Ministerial Conference, without amending any legal text but with supermajority (i.e., at least 75 percent of all Members), has the authority to waive any multilateral obligation for a limited period of time.[138] While the domestication (ratification) requirement does not exist in waiving an obligation, the difficulties with this option lies in: (i) determining the scope and time period of the waiver; and (ii) convincing at least 75 percent of all Members (i.e., 125 Members). Indeed, during the Covid-19 pandemic (2020-2022), some WTO Members requested a waiver of the intellectual property rights of the vaccines, Covid-19 tests and other medical needs under the TRIPS Agreement in order

[128]'Agreement on Fisheries Subsidies, Ministerial Conference Twelfth Session, Geneva, June 17, 2022 WT/MIN(22)/33, WT/L/1144 (World Trade Organization); World Trade Organization, 'Members Submitting Acceptance of Agreement on Fisheries Subsidies' <https://www.wto.org/english/tratop_e/rulesneg_e/fish _e/fish_acceptances_e.htm> accessed 28 September 2025.

[129]Robert Howse, 'The Limits of the WTO' (2022) 116 American Journal of International Law Unbound 41, 44.

[130]Asmelash, 'The First Ten Years of WTO Jurisprudence on Renewable Energy Support Measures' (n 6) 475.

[131]Akman and others (n 124) 876–86; For trilateral efforts to reform the SCM Agreement, see also Robert Howse, 'Making the WTO (Not So) Great Again: The Case Against Responding to the Trump Trade Agenda Through Reform of WTO Rules on Subsidies and State Enterprises' (2020) 23(2) Journal of International Economic Law 371, 372–386; Howse and Langille (n 1) 41–44.

[132]Agreement Establishing the WTO (n 68) arts II:3, III.

[133]One of the initiatives is the creation of an informal working group called the Trade and Environmental Sustainability Structured Discussions in 2020, which initially had 50 members and whose membership has since increased to 78. See World Trade Organization, 'Trade and Environmental Sustainability' <https://www.wto.org/ english/tratop_e/tessd_e/tessd_e.htm#> accessed 28 September 2025; 'Trade and Environmental Sustainability Structured Discussions (TESSD), Members: 77/164' (*wtoplurilaterals*) <https://wtoplurilaterals.info/plural_initi ative/trade-and-environmental-sustainability-structured-discussions-tessd/> accessed 28 September 2025.

[134]Certain WTO Members also alleged that new plurilateral agreements will be inconsistent with the procedural rules of the WTO. See World Trade Organization, 'The Legal Status of 'Joint Statement Initiatives' and Their Negotiated Outcomes', February 19, 2021, General Council, WT/GC/W/819' <https://docs.wto.org/dol2fe/Pages/SS/directdoc. aspx?filename=q:/WT/GC/ W819.pdf&Open=True> accessed 11 January 2025.

[135]Akman and others (n 124) 879.

[136]See Droege and others (n 124) 246–48; Eliason (n 124) 561–65; Lee (n 108) 466.

[137]Shalanda H Baker, 'Climate Change and International Economic Law' (2016) 43(1) Ecology Law Quarterly 53.

[138]Agreement Establishing the WTO (n 68) arts IX:3 and IX:4.

to spread them as quickly as possible to developing and less-developed countries for the purpose of a greater good,[139] yet certain WTO Members—because of their companies' economic interests—blocked such a waiver for a long time, then agreed to accept the waiver after the pandemic came to an end in mid-2022.[140] Such an experience should be enough to diminish any hope for a waiver on green subsidies at the Ministerial Conference and for obtaining the acceptance of the supermajority of Members because of the corporate interests of certain Members, which have been advancing their green technology and are probably make billions of dollars in profit in the near future.

Droege and others also offer three more alternatives to make the green measures, including subsidies, compatible with WTO rules: (i) authoritative interpretation to clarify certain WTO rules, such as GATT Article XX; (ii) peace clause (a quasi-gentlemen's agreement) for a limited time, with which WTO Members would promise not to challenge or apply CVDs against other Members' green subsidies, an execution of which would certainly give the system some breathing room; and (iii) modifications in the WTO Dispute Settlement Mechanism, such as requiring technical expertise to measure how a Member's green subsidies contribute to the reduction of GHG gas emissions in its NDC.[141] Notably, most of these options require the acceptance of the (super)majority of WTO Members through multilateralism, which will likely produce no victory at all. This is because, if Members agree to determine the scope of the waiver, authoritative interpretation, peace clause, or adjustments in the DSB *meticulously*, they would likely fail to produce even a proposal because they would be drowned in detail due to the divergence of Members' level of economic developments and political interests. Remembering the rationale behind Members' failure to extend the application of the SCM Agreement Article 8 would be sufficient. Discussing a more broad concept of a waiver, authoritative interpretation, peace clause, or adjustments in the DSB would also be out of option given the growing mistrust among certain Members because it might be tantamount to handing Members a "carte blanche"—i.e., blank check—which could be easily abused for purely protectionist and trade-distorting purposes.[142]

Although climate change has been one of the most pressing issues for decades and green subsidies seem incompatible with international trade rules, none of these above-evaluated suggestions have been materialized by WTO Members. The only option left at the international trade system's disposal is to reach plurilateral, but multilateral-minded, inclusive, and Global-South-friendly agreements and then wait for other Members to follow suit. Yet, even the eventuation of this optimistic approach is likely to take at least a decade. Until then, the trade system, without the existence of a functional Appellate Body, will remain in a chaotic and anarchic order, failing to provide Members with breathing room and legal flexibility.

V. The Green Subsidy War Might Lead to a Potential CVD War

A. Intensifying the Green Subsidy War

Even though current, non-malleable WTO rules do not welcome green subsidies, recent developments compel one to think that some Members have largely ignored them anyway by placing massive subsidy

[139] Meltem Sarıbeyoğlu Skalar, 'COVID-19 ve Aşının Adil Dağıtımı: Dünya Ticaret Örgütü Anlaşmaları Bağlamında Ortaya Çıkan Sorunlar' (2021) 41(2) Public and Private International Law Bulletin 395, 395–97.

[140] 'Ministerial Declaration on the WTO Response to the Covid-19 Pandemic and Preparedness for Future Pandemics' *World Trade Organization WT/MIN(22)/31, WT/L/1142* (17 June 2022); Sam Meredith, 'Rich Countries Are Refusing to Waive the Rights on Covid Vaccines as Global Cases Hit Record Levels' (*CNBC*, 22 April 2021) <https://www.cnbc.com/2021/04/22/covid-rich-countries-are-refusing-to-waive-ip-rights-on-vaccines.html> accessed 28 September 2025.

[141] Droege and others (n 124) 248–251; see also Lee (n 108) 465–66; Wu and Salzman (n 16) 468–69.

[142] Droege and others (n 124) 249–250.

programs to achieve environmental and other trade policy goals.[143] A perfect example is the Inflation Reduction Act ("IRA") of 2022, containing trillion-dollar-worth green subsidy programs.[144] Soon after its announcement, many commentators urged immediate action in response to the IRA and recommended that their governments provide like-minded subsidies to support the green transition and secure a place in global green supply chains.[145]

Ursula Von der Leyen, the President of the European Commission, while expressing her support for the US return to climate change mitigation efforts, expostulated the IRA's buy American mentality, discriminatory tax credits, and production subsidies, all of which, she argued, would unlevel the playing field in favor of the United States, potentially causing the European Union to lose investment opportunities on clean technology and critical-raw-materials supply chains to the other side of the Atlantic.[146] To her, to relevel the playing field, stop the Chinese monopoly on critical raw materials, and achieve the EU decarbonization while decreasing its dependence on Russia's natural gas, the European Union must take the following three steps: (i) simplify the EU state-aid rules; (ii) create a common EU sovereignty fund for a common EU clean industrial policy; and (iii) cooperate with partners and allies, particularly with the United States.[147] Besides the EU Green Deal expenditure, it will not be surprising to see EU states switching gears in the green technology race by further embarking on massive IRA-minded subsidy programs.[148]

Since any protectionist measure, including green subsidies, is contagious in nature, other major WTO Members either followed—as mentioned in Section I.B—or will likely follow a similar path. While capturing such immense and rising tensions on clean technology races, some commentators cautioned governments on the long-term economic side effects of massive subsidy packages.[149] Kruger, for instance, denouncing the Biden Administration's protectionist green industrial policy under the IRA, further explains: "[i]nstead of lifting Donald Trump's trade barriers, US President Joe Biden has fully embraced industrial policy, offering massive subsidies to domestic manufacturers. Although this might enhance manufacturing capacity in the short term, it also risks triggering a financially draining global subsidy war with no clear winners."[150] While Kruger, who served at the World Bank and the International Monetary Fund ("IMF"), reflects the long-lasting liberal approach of the Washington Consensus, it was quite interesting to see a working paper from a liberal-minded IMF, advocating the opposite and alleging that "subsidies promote both exports and imports," and thereby international trade.[151] Undoubtedly, such a shift in the IMF's (at least its staff's) attitude should deserve strong criticism on the grounds that once the Institute mandated developing countries to limit government intervention into their economies, including subsidies, it is now trying to economically justify such government involvement. Nevertheless, apart from aggrandizing domestic subsidies, the IMF working

[143] Sam Fleming and Ben Hall, 'EU Plans Subsidy for Electric Vehicle Sales to Counter China' *Financial Times* (23 January 2025) <https://www.ft.com/content/b950086b-8671-47c2-9f8b-e546debd346b> accessed 28 September 2025; 'China's EV Makers Got $231 Billion Aid Over 15 Years, Study Says' *Bloomberg.com* (21 June 2024) <https://www.bloomberg.com/news/articles/2024-06-21/china-s-ev-makers-got-231-billion-in-aid-over-last-15-years> accessed 28 September 2025.

[144] Andrew Restuccia and Amrith Ramkumar, 'Biden Is Spending $1 Trillion to Fight Climate Change. Voters Don't Care.' (*WSJ*, 9 April 2024) <https://www.wsj.com/politics/elections/biden-is-spending-1-trillion-to-fight-climate-change-voters-dont-care-21d8cb05> accessed 28 September 2025.

[145] De Ville (n 27) 2; Aime Williams and Sam Fleming, 'How Biden's Climate Law Is Charging US Green Spending and Provoking Europe' *Financial Times* (26 January 2023) <https://www.ft.com/content/6d43e8be-9b93-4430-b4d7-fe74fafe2835> accessed 28 September 2025.

[146] 'Speech by President von Der Leyen at the College of Europe in Bruges' (*European Commission*) <https://ec.europa.eu/commission/presscorner/detail/en/speech_22_7487> accessed 28 September 2025.

[147] ibid

[148] See Mario Draghi, 'The Future of European Competitiveness, the European Commission' (2024) <https://commission.europa.eu/topics/eu-competitiveness/draghi-report_en> accessed 28 September 2025.

[149] Kleimann and others (n 41) 3431–33.

[150] Krueger (n 33).

[151] Rotunno and Ruta (n 32) 4.

paper shows that the number of subsidy announcements skyrocketed from 760 to around 3,000 between 2009 and 2021, with developed countries and some developing G20 nations being the frequent users, concluding with a warning about a subsidy war.[152]

Of course, these numbers could still be considered the tip of the iceberg. It is because although WTO Members are legally required to notify the SCM Committee of their subsidies,[153] only around half of the Members submit their notifications.[154] Hence, any statistics on (green) subsidies fail to represent the whole trend. Undoubtedly, recent announcements of environmental subsidy packages, such as the IRA and the GX, should substantially increase such an incomplete number. With a combination of further assumptions—i.e., (i) the closer states come to their NDCs deadline, the more they adopt green measures, including subsidies, to reach their promises; and (ii) countries intend or desire to turn such an environmental necessity into national security issues and a green technology race by creating national champions and appropriate supply chains—such subsidy statistics and amount will reach an unimaginable level.[155] Indeed, according to the International Energy Agency, between 2020 and mid-2024, states have already provided around $2 trillion as financial incentives to their green energy industries, including placing some form of prohibited subsidies containing domestic content requirements.[156] It would not be surprising to see the investment level reaching approximately 4.5 trillion dollars by 2030.[157] Hence, the literature has already begun capturing either the existence or the danger of a subsidy race and/or war.[158]

One would also ask, however, whether a green subsidy war is necessarily the bad one. Arguably, such a war on a global scale could trigger more technological innovation, and, thus cheaper production and imports. Ultimately, a subsidy war seems to be environmentally beneficial and would be a universal remedy for a rapid climate change mitigation, regardless of economic and legal side effects. Nevertheless, the debate on whether a green subsidy war is economically inefficient in the long run is well beyond the scope of this study. Legally, however, such a subsidy war seems to lead to a CVD war in the following decade.

B. The Looming Countervailing Duty War

Initially, since the WTO system has not resolved the discrepancy between environmental and trade commitments by allowing green subsidies, any green subsidy would still fall into either the prohibited or, if specific, actionable category. As recalled from the CVD discussion, the SCM Agreement offers two types of remedies, one of which (i.e., the multilateral way) might not produce plausible outcomes because of the now-defunct Appellate Body. The only effective remedial option to offset trade-distorting massive green subsidies remains the unilateral way (i.e., CVDs). Although the imposition of CVDs has its inherent limitations, such obstacles could be, to the greatest extent possible, easily abated and maliciously conducted.

First, typically, CVDs' target is quite limited. In other words, subsidies—whether prohibited or actionable—that do not harm domestic industry seem untouchable by unilateral remedies. Having said that, since

[152] ibid 4 and 14. Covid-19-related subsidies may have partly contributed to this increase, while green subsidies are likely to play a significant role as well.

[153] See SCM Agreement art 25.

[154] Espa and Marín Durán (n 8) 32; 'Overview of Developments in the International Trading Environment, WT/TPR/OV/27' (*Trade Policy Review Body, World Trade Organization*, 20 November 2024) 76.

[155] Karl Aiginger and Dani Rodrik, 'Rebirth of Industrial Policy and an Agenda for the Twenty-First Century' (2020) 20(2) Journal of Industry, Competition and Trade 189, 191.

[156] International Energy Agency, *World Energy Outlook 2024* (International Energy Agency 2024) 32 and 82–83.

[157] ibid 155.

[158] See Kleimann and others (n 41) 3433; Horlick and Clarke (n 33) 676; Rodrik (n 12) 489; Krueger (n 33); Wu and Salzman (n 16) 405–06 and 472 (adopting a broader concept a decade ago, this situation has been referred to as an "environmental [or green] trade war."); Rotunno and Ruta (n 32) 1 and 8.

the SCM Agreement broadens the term of injury as "material injury to a domestic industry, threat of material injury to a domestic industry, or material retardation of the establishment of such an industry,"[159] Members that desire to impose CVDs on certain products do not need to establish an actual injury to a domestic industry in each case but can apply the term "threat to injury" as a justification. Furthermore, even if Members do not have a functional, proper domestic industry, they may use the option of "retardation of the establishment of domestic industry" as an excuse to establish injury, thereby imposing CVDs since all Members sooner or later need to have some form of green industries. Such an opportunity to broadly interpret the injury would give Members a huge flexibility to impose more CVDs if they do desire.

Second, the SCM Agreement allows Members to impose CVDs on products that received subsidies *previously*. Ideally, if subsidies are withdrawn (e.g., repayment of the grant) or adverse effects are eliminated until the final determination, Members cannot impose CVDs on the once-subsidized products.[160] In case of the existence of recurring subsidies, Members' authorities may decide to impose CVDs based on the establishment of injury and causation. In the case of a non-recurring bulky subsidy provided by another government that still contributes to current and future production, national authorities can impose CVDs by establishing that an industry that once received a subsidy is still benefiting from that non-recurring subsidy.[161] As Panel in *Japan—DRAMs* pointed out that Members can "allocate large 'non-recurring' subsidies over a period of time, starting with the year in which the subsidy is granted. This approach reflects the duration of the economic 'benefit' to the recipient of such subsidies and ensures that such large non-recurring subsidies do not escape from an appropriate remedy."[162] Apart from establishing the continued existence of benefit, national authorities allocate the subsidy amount by using certain allocation methodologies, such as the useful life of the subsidized assets.[163] The domestic industry might also apply for sunset reviews to ensure that CVDs remain in force pursuant to Article 21.1 of the SCM Agreement, according to which CVDs "shall remain in force only as long as and to the extent necessary to counteract subsidization which is causing injury."[164] As Wu and Salzman noted:

> "[O]ne of the dangers of trade remedies is that the high tariff rates imposed from such cases are allowed to continue for long periods of time. WTO law places no limits on how long antidumping duties and CVDs can be maintained, so long as they are reviewed every five years and the investigating authorities determine that injury would result from their termination. The loose legal standard governing these sunset reviews allows for governments to maintain trade remedies for long periods. For example, the United States has antidumping duties dating back to the Reagan Administration, and the EU has antidumping measures dating back to 1990."[165]

Interestingly, as of this writing, such decades-old measures that were placed in the 1980s and 1990s are

[159] SCM Agreement art 15 (footnote 45).

[160] See Coppens (n 55) 246.

[161] ibid; Panel Report, *Japan–Countervailing Duties on Dynamic Random Access Memories from Korea* (17 December 2007) WT/DS336/R paras 7.356-7.358.

[162] ibid para 5.64.

[163] ibid para 5.65.

[164] SCM Agreement art 21.1.

[165] Wu and Salzman (n 16) 471 *(original footnotes omitted)*.

still in force.[166] Thus, CVDs could be imposed based on calculations of the effects of previously received subsidies, and its application may be extended beyond five years, potentially remaining in place for much longer.

Third and more importantly, the lack of Appellate Body scrutiny, thereby DSB authorization for legal retaliation, might provoke Members to *abuse* the CVD discipline. Ideally, the imposition of CVDs requires the establishment of certain elements, such as a specific subsidy, material injury, subsidy margin, causation, and CVD margin, under strict procedural and substantive rules. All of these processes are conducted by national authorities, which have to make administrative determinations based on sufficient evidence pursuant to domestic laws and regulations that should be in line with international trade rules. Furthermore, any CVD initiation could be subject to a juridical review by domestic courts and, then, the WTO DSB. Importantly, the current incapability of the WTO DSB offers Members an opportunity to create an atmosphere to protect their industries by loosening their domestic laws and regulations on subsidies while providing de jure or de facto flexibility for its authorities to impose more CVDs against subsidized imports.

The real battle to eliminate WTO-inconsistent CVDs should be in domestic courts;[167] however, they may act in tandem with their governments although such courts are also required to apply international rules. Once no fruitful outcome is reached in the domestic courts, the appeal into the void system of the WTO DSB could protect the existence of WTO-inconsistent CVDs, as well. Even if we consider that the Appellate Body will become functional in the following years, which is quite unexpected given that the United States is in the second term of the Trump Administration, the WTO system will offer only forward-looking remedies, so the CVDs will remain in place until shortly after the adoption of the AB's final decision by the DSB.[168] By that time, the domestic industry may enjoy outside protection against import competition while all supply chains will be set up in favor of countries that abuse CVDs.[169]

Obviously, a CVD war is not an implausible option in an environment where Members have already begun to prevalently use green subsidies. In the absence of an effective multilateral system to address WTO-inconsistent subsidies, the only option left at the Members' disposal is the imposition of CVDs, which, while strictly regulated by the SCM Agreement, may still be prone to misuse. In other words, the narrowly and strictly designed CVD system can be easily circumvented by Members seeking to create a protected environment for their domestic industry as any abuse of CVDs would not be subject to a final decision in the DSB's judicial review. Recent trends seem to confirm such an assumption. According to WTO statistics, the total number of CVD initiations was 178 between 1995 and 2004, slightly increased to 203 between 2005 and 2014, and jumped to 386 between 2015 and 2024, with the figure for 2024 marking the highest annual total (69 initiations) on record.[170] In addition, another WTO report also captured that 2024 saw a "sharp

[166] See 'Semi-Annual Report under Article 16.4 of the Agreement, United States G/ADP/N/399/USA' (*Committee on Anti-Dumping Practices, World Trade Organization*, 2 September 2024) 56–74; 'Semi-Annual Report under Article 16.4 of the Agreement, European Union G/ADP/N/399/EU' (*Committee on Anti-Dumping Practices, World Trade Organization*, 23 September 2024) 13–25.

[167] Mark Wu and James Salzman also reached a similar conclusion, emphasizing that opting for domestic trade remedy cases over WTO disputes as the primary litigation forum is significant. However, their reasoning differed slightly. They argued that "[w]hile most attention has been focused on the WTO [disputes], we suggest that domestic trade remedies cases pose a much greater threat to environmental interests." Of course, at the time of their work (i.e., 2014), the WTO DSB was not paralyzed. So, after assessing the WTO's forward-looking remedial nature, they emphasized the hardships of revoking/terminating once-imposed, tariff-increasing CVDs after the injury caused by the subsidized imports disappears. They also indicated that "[r]ather than advocating reforms of the WTO law [which they also viewed that such an option is hard to pull], as the few scholars focused on this area have proposed, we contend that both environmentalists and fair trade advocates would be better served by narrowly amending domestic trade remedies regulations to prevent a harmful green trade war." They proposed amending domestic trade remedy laws in specific ways, such as limiting countervailing duties (CVDs) on green products to a three-year period, to facilitate reconciliation between both sides. Wu and Salzman (n 16) 407, 456 and 466.

[168] See Juscelino F Colares and Mustafa T Durmuş, *Restructuring Trade Agreements* (Wolters Kluwer 2021) 132–33.

[169] See ibid.

[170] World Trade Organization, 'Countervailing Initiations by Reporting Member 01/01/1995 - 31/12/2024' <https://www.wto.org/english/tratop_e/scm_e/CV_InitiationsByRepMem.pdf> accessed 28 September 2025.

increase" in CVD investigations, most of which, of course, will turn to CVD measures.[171] Considering that some Members have not submitted their notifications, and a subsidy war might trigger more CVD initiations, the total number will be much higher, which might be called a CVD war. Thus, the number of CVDs should be carefully analyzed, and Member attitudes towards altering their domestic laws and regulations on CVDs must be scrutinized.

Conclusion

While the literature has extensively examined international environmental commitments and the (in)compatibility of WTO rules with green subsidies, it has largely overlooked their implications for trade remedies. This article addresses this gap by showing how the growing use of green subsidies risks escalating into a green subsidy war and, in turn, a green CVD war, particularly in the absence of the functional Appellate Body.

There is no doubt that industrial policy has returned back to the forefront of international economic governance; however, it has done so in a transformed form, namely, green industrial policy, driven by the heavy and time-bound GHG reduction commitments undertaken by WTO Members pursuant to the Paris Agreement. Although green industrial policies require certain policy tools, such as green subsidies, such subsidies are not warmly welcomed by WTO rules. Instead of being stuck in the dilemma of either violating their trade commitments under the WTO or disregarding their environmental commitments under the Paris Agreement, some Members seem to have chosen to comply with the Paris Agreement to the detriment of violating international trade law. Ostensibly, with the rest following suit, a *subsidy war* appears on the horizon. A reasonable one would expect to see that the WTO DSB would prevent such an unlawful subsidy war by either identifying that certain forms of green subsidies are consistent with the WTO rules or at least declaring that prohibited subsidies all together and actionable subsidies that adversely affect other Members are inconsistent with the WTO rules regardless of their greenness, thereby allowing the road for an authorized retaliation. Unfortunately, the current crisis in the Appellate Body has created an anarchic trade environment, where trade measures' WTO-(in)consistency tests cannot be properly executed, creating an additional window of opportunity to abuse trade rules, further provoking green nationalism. Since Members may not be willing to resort to dead-ended multilateral remedies, they might consider *vigilantism* by not only providing bulky subsidies to their domestic industries but also arbitrarily and unjustifiably using trade remedies, particularly CVDs, to protect their green domestic industries, create appropriate domestic or regional supply chains, and punish other Members' subsidies, a trend that potentially leads to a *CVD war*.

In an atmosphere of green subsidy and CVD wars, Members that ignore allocating enough budget for green transition should be shrewd. Initially, these days of the green nationalism trend will probably disappear in a decade after certain countries successfully complete their green transition and create their own green supply chains. Then, those successful countries reseek greater market access for their green products, reconsider neoliberal ideas, and potentially advocate for trade *reliberalization*. In other words, once a comparative advantage is obtained in clean, carbon neutral production, these countries will prevalently use CBAM-like policies to admonish the green-transition-failed Members under economic and environmental grounds.[172] The latter would have no choice but to initially purchase green energy goods to produce climate-neutral products from the former should they desire to avoid CBAM-minded costs, thusly market access.

[171] See 'Overview of Developments in the International Trading Environment, WT/TPR/OV/27' (n 154) 20 and 31.

[172] Asmelash, 'The WTO Dispute Settlement System as a Forum for Climate Litigation?' (n 17) 329–30.

There is no use in closing a stable door after the horse has bolted. Members failing to prioritize the green transition should immediately act to find appropriate means to create first and then protect their own green domestic industries before it is too late. Otherwise, Members that face challenges—particularly from the Global South due to difficulties in securing timely investments—may encounter market-access restrictions, while the successful ones may be less likely to be reminded that their green transition was facilitated in part by practices that raised concerns under international trade law.

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