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The Role of International Trade Law in the Energy Transition

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Abstract

The key to tackling climate change and other environmental concerns primarily lies in the transition away from fossil fuels. Making this transition happen in a just and timely manner requires rapid and radical changes not only to energy sources and technologies but also to the broader socioeconomic and legal assemblages that are built around energy production and consumption. International trade law is one of the critical legal assemblages that can help accelerate or hinder the energy transition. This article focuses on the multilateral trading system and examines the role of international trade law in the energy transition. It argues that existing international trade rules are more likely to impede than accelerate the energy transition and that urgent reform is necessary to ensure that international trade law plays a constructive role in the transition towards a sustainable energy future.

Keywords

climate change – energy transition – fossil fuels – international trade law – renewable energy – trade and environment – WTO

1 Introduction

The Intergovernmental Panel on Climate Change (IPCC) has long maintained that the key to tackling climate change and other environmental concerns lies

in the shift away from carbon-intensive fossil fuels.¹ Three fossil fuels (i.e. coal, oil and natural gas) account for over 80 per cent of global energy supply and over two-thirds of global greenhouse gas emissions. Shifting away from these energy sources entails leaving most fossil fuel reserves in the ground and transitioning the global energy system to renewable energy sources.² The desire to make this transition happen is now firmly embedded in national and international legal instruments. The Paris Agreement enjoins its parties to strive to limit the global average temperature increase to 1.5°C above pre-industrial levels and make ‘finance flows consistent with a pathway towards low greenhouse gas emissions and climate resilient development’.³ The Glasgow Climate Pact also urges parties to the Paris Agreement to accelerate the energy transition through policies such as phasing down unabated coal power and phasing out inefficient fossil fuel subsidies.⁴ Additionally, several countries have included energy transition measures in their Nationally Determined Contributions (NDCs) to the Paris Agreement or national energy transition laws and policies.⁵ However, despite these aspirations and commitments, the speed of the energy transition remains too slow to avert the catastrophic consequences of climate change.⁶

The wide gap between the rate of climate change and the pace of the energy transition has prompted scholars from various fields to explore factors that could facilitate or impede the energy transition. However, legal scholarship has largely overlooked the role of law in the energy transition. Huhta recently noted that ‘the contribution of law to the energy transition and energy research remains poorly understood both within legal scholarship and beyond

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- 1 See IPCC, ‘Climate Change 2022: Mitigation of Climate Change: Working Group III Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change’ (2022).
 - 2 See Kelly Trout and others, ‘Existing Fossil Fuel Extraction Would Warm the World Beyond 1.5 °C’ (2022) 17 *Environmental Research Letters* 064010; Christophe McGlade and Paul Ekins, ‘The Geographical Distribution of Fossil Fuels Unused When Limiting Global Warming to 2 °C’ (2015) 517 *Nature* 187; Steve Pye and others, ‘An Equitable Redistribution of Unburnable Carbon’ (2020) 11 *Nature Communications* 3968.
 - 3 Paris Agreement to the United Nations Framework Convention on Climate Change (adopted 12 December 2015, entered into force 4 November 2016) FCCC/CP/2015/L.9 (Paris Agreement) art 2.1(a)(c).
 - 4 UNFCCC, ‘Glasgow Climate Pact’ (2021) Decision 1/CMA.3, FCCC/PA/CMA/2021/10/Add.1, para 20.
 - 5 See Christian Elliott, Steven Bernstein and Matthew Hoffmann, ‘Credibility Dilemmas under the Paris Agreement: Explaining Fossil Fuel Subsidy Reform References in INDCs’ (2022) 22 *International Environmental Agreements: Politics, Law and Economics* 1.
 - 6 See IEA, ‘Net Zero by 2050 – A Roadmap for the Global Energy Sector’ (International Energy Agency 2021).

it.⁷ This holds particularly true in the context of international law. The lack of a cohesive and unified legal framework for international energy governance means that there is no comprehensive body of international law specifically addressing the energy transition.⁸ The international rules relevant to the energy transition are spread across the various regimes of international law. Understanding the role of international law in the energy transition, therefore, requires understanding how each of its relevant regimes address energy issues.

International trade law stands out as one of the prominent regimes with significant implications for the energy transition. It comprises a broad range of rules and regulations relevant to the energy transition. As the IPCC recently pointed out, these rules can help accelerate or impede the energy transition.⁹ On the one hand, international trade rules that mandate the adoption of pro-energy transition trade measures or prohibit the adoption of anti-energy transition trade measures can help accelerate the energy transition. On the other hand, trade rules can impede or delay the energy transition to the extent that they discourage the adoption of pro-energy transition trade measures or encourage the adoption of anti-energy transition trade measures. Some of these rules have garnered considerable attention in the trade and environment scholarship ever since the emergence of energy subsidy disputes in the early 2010s.¹⁰ There is now a vast body of literature on the governance of energy subsidies (both to renewables and fossil fuels) in the multilateral trading system and its implications for the energy transition.¹¹ There is also extensive literature on trade rules (or lack thereof) on the liberalization of trade in environmental

7 See Kaisa Huhta, 'The Contribution of Energy Law to the Energy Transition and Energy Research' (2022) 73 *Global Environmental Change* 102454. See also Niko Soininen and others, 'A Brake or an Accelerator? The Role of Law in Sustainability Transitions' (2021) 41 *Environmental Innovation and Societal Transitions* 71.

8 See Jorge Viñuales, *The International Law of Energy* (CUP 2022).

9 See IPCC (n 1) 1499.

10 For a detailed overview of these disputes, see Henok Asmelash, 'The First Ten Years of WTO Jurisprudence on Renewable Energy Support Measures: Has the Dust Settled Yet?' (2022) 21 *WTR* 455.

11 On fossil fuel subsidies, see Cleo Verkuijl and others, 'Tackling Fossil Fuel Subsidies through International Trade Agreements: Taking Stock, Looking Forward' (2019) 58 *Virginia Journal of International Law* 309; Henok Asmelash, 'The Regulation of Environmentally Harmful Fossil Fuel Subsidies: From Obscurity to Prominence in the Multilateral Trading System' (2022) 33 *EJIL* 993. On renewable energy subsidies, see Henok Asmelash, 'Energy Subsidies and WTO Dispute Settlement: Why Only Renewable Energy Subsidies Are Challenged' (2015) 18 *JIEL* 261; Mandy Meng Fang, 'Shades of Green: Mapping the Parameters of the GATT Article III:8(a) Government Procurement Derogation in the Renewable Energy Transition' (2019) 20 *JWIT* 553.

goods such as renewable energy technologies.¹² However, the tendency of the existing scholarship to narrowly focus on specific trade rules or trade-related energy transition measures undermines its ability to paint a full picture of the ways in which and the extent to which international trade rules affect the energy transition. Much of the historical trade and environment debate that informs this scholarship also suffers from silo thinking and treats environmental and other non-trade concerns as external to the international trade regime that should be addressed through exceptions.¹³ This exception-based approach to tackling non-trade concerns relegates other policy objectives to the periphery and erects an artificial wall between trade and non-trade issues. It tends to turn the discussion around the role of trade law in addressing climate change and other environmental concerns into an examination of the consistency or otherwise of trade-related environmental measures with international trade law. Such examinations normally stop at assessing whether the trade-related environmental measure falls under one of the environmental exceptions. The exception-based approach also ignores the fact that the preamble to the Marrakech Agreement establishing the World Trade Organization (WTO) enjoins WTO Members to pursue trade liberalization ‘in accordance with the principles of sustainable development’.¹⁴ These considerations require us to imagine the interaction between trade law and the energy transition beyond the exception-based approach and the compatibility or otherwise of trade-related energy transition measures with trade rules. It is against this backdrop that this article sets out to undertake a comprehensive and structured discussion on how international trade law affects the energy transition. It does so by broadly categorizing trade-related energy transition measures into pro-and anti-energy transition trade measures and critically examining their regulation under the various WTO agreements. Pro-energy transition trade measures contribute to the development and deployment of renewable

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- 12 James Bacchus and Inu Manak, ‘Free Trade in Environmental Goods Will Increase Access to Green Tech’ (2021) 80 *Free Trade Bulletin* 1; Jaime de Melo and Jean-Marc Solleder, ‘Barriers to Trade in Environmental Goods: How Important They Are and What Should Developing Countries Expect from Their Removal’ (2020) 130 *World Development* 104910; Rachel Brewster, Claire Brunel and Anna Maria Mayda, ‘Trade in Environmental Goods: A Review of the WTO Appellate Body’s Ruling in US – Countervailing Measures (China)’ (2016) 15 *WTR* 327; Mark Wu, ‘The WTO Environmental Goods Agreement: From Multilateralism to Plurilateralism’ in Panagiotis Delimatsis (ed), *Research Handbook on Climate Change and Trade Law* (Edward Elgar 2016).
- 13 See Elena Cima, *From Exception to Promotion: Re-Thinking the Relationship Between International Trade and Environmental Law* (Brill 2021).
- 14 Marrakesh Agreement Establishing the World Trade Organization (signed 15 April 1994, entered into force 1 January 1995) 1867 UNTS 154, Preamble.

energy technologies. Such measures may take the form of trade measures that encourage renewable energy production and consumption or discourage fossil fuel production and consumption. In contrast, anti-energy transition trade measures discourage the development and deployment of renewable energy technologies or encourage the production and consumption of fossil fuels.

This article starts by exploring the nature of the interaction between international trade law and the energy transition (Section 2). Section 3 then maps trade measures relevant to the energy transition and critically examines their regulation under various WTO agreements. In doing so, it compares the treatment of pro- and anti-energy transition trade measures under extant international trade rules. Section 4 looks beyond extant international trade law and considers new and ongoing efforts to align international trade law with the energy transition. Section 5 concludes the discussion by making the case for reforming international trade law.

2 The Interplay between International Trade Law and Energy Transition

Before considering whether and how international trade law affects the energy transition it is imperative to identify the nature and possible areas of interaction between the two. International trade law regulates the use of trade measures such as tariffs, quotas, subsidies, etc. While it outrightly prohibits some trade measures such as discrimination and quantitative restrictions, it sets limitations on the use of others. These prohibitions and limitations are geared towards ensuring the free flow of goods and services across borders. The preambles to the General Agreement on Tariffs and Trade (GATT) and the Marrakesh Agreement establishing the WTO direct international trade rules 'to the substantial reduction of tariffs and other barriers to trade and to the elimination of discriminatory treatment in international trade relations'.¹⁵ While international trade rules were initially confined to tariffs and trade in goods, eight successive rounds of multilateral trade negotiations led to the considerable expansion of these rules. Most importantly, the Uruguay Round (1986–94) introduced detailed new trade rules that govern not only trade in goods but also trade in services and intellectual property rights. It also considerably strengthened the dispute settlement system to help with the enforcement of these rules.

15 See General Agreement on Tariffs and Trade (adopted 30 October 1947, entered into force 1 January 1948) 55 UNTS 187 (GATT); Marrakesh Agreement (n 14).

However, energy issues did not feature prominently in any of these trade negotiation rounds. The Uruguay Round, for example, introduced sectoral rules on agriculture, textile, etc., but sectoral rules for energy trade were not even under consideration. This has puzzled commentators given energy products were (and continue to be) one of the most globally traded commodities by value and volume.¹⁶ It also led to a widespread misconception about the applicability of multilateral trade rules to trade in energy. However, there is no multilateral trade agreement which exempts energy trade from the scope of its application. Several GATT/WTO Members also undertook binding tariff commitments on energy products.¹⁷ Moreover, there have been trade disputes involving energy products throughout the history of the multilateral trading system. The *US – Superfund*¹⁸ dispute of the GATT era and the first-ever WTO dispute that reached the Appellate Body (i.e. *US – Gasoline*)¹⁹ are prominent examples that demonstrate the applicability of multilateral trade rules to the energy sector.²⁰ The unsubstantiated claim about the existence of a ‘gentlemen’s agreement’ to exclude energy issues from the multilateral trading system and the absence of the major oil-producing countries from the early years of the multilateral trading system seem to have perpetuated this misconception.²¹ That energy governance was widely considered the prerogative of national governments (embedded in the principle of sovereignty over natural resources) and energy products historically faced little trade barriers while the multilateral trade rules were primarily focused on the removal of import barriers have also made energy issues less prominent within the multilateral trading system.²² The combination of these factors led to the absence of multilateral trade rules and principles tailored to the energy sector. Despite the absence of sectoral rules, the energy sector has always been subject to the general rules

16 See Melaku Geboye Desta, ‘The GATT/WTO System and International Trade in Petroleum: An Overview’ (2003) 21 *Journal of Energy & Natural Resources Law* 385; Susan L Sakmar, ‘Bringing Energy Trade Into the WTO: The Historical Context, Current Status, and Potential Implications for the Middle East Region’ (2008) 18 *Ind Intl & Comp L Rev* 89.

17 Anna-Alexandra Marhold, *Energy in International Trade Law: Concepts, Regulation and Changing Markets* (CUP 2021) 40.

18 See *United States – Taxes on Petroleum And Certain Imported Substances (US – Superfund)*, GATT Panel Report (17 June 1987) L/6175–34S/136).

19 See WTO, *United States – Standards for Reformulated and Conventional Gasoline (US – Gasoline)*, Report of the Appellate Body Report (20 May 1996) WT/DS2/AB/R.

20 For early trade disputes over energy products, see Desta (n 16).

21 Marhold (n 20) 37ff.

22 On the ‘market access bias’ of the multilateral trading system, see Desta (n 16) 394.

governing trade in goods and services.²³ However, it was only the accession of energy-exporting countries such as Saudi Arabia (2007) and Russia (2012) and the recent rise of trade disputes over renewable energy subsidies²⁴ that have drawn considerable attention towards the relevance and implications of these rules to the energy sector.

International trade rules influence the energy transition primarily by determining the type of trade-related energy transition measures governments can and cannot use. As noted above, we can broadly categorize these measures into pro-and anti-energy transition trade measures. Pro-energy transition trade measures may take the form of renewable energy subsidies, fossil fuel subsidy reform, liberalization of trade in renewable energy technologies, restrictions on international trade in fossil fuel products, etc. On the other hand, anti-energy transition trade measures include the broad range of trade measures that may hinder the energy transition from the liberalization of trade in fossil fuel products to the imposition of restrictions on trade in renewable energy technologies such as solar panels, wind turbines, etc. Since both sets of trade measures are subject to extant international trade rules, the impact of these rules on the energy transition is determined based on the extent to which they encourage the adoption of pro-transition trade measures and discourage the adoption of anti-transition trade measures.

3 The Regulation of Trade-Related Energy Transition Measures

The WTO has over 60 agreements and decisions governing trade in goods, services and trade-related aspects of intellectual property.²⁵ Most of these agreements and decisions contain international trade rules that are (directly or indirectly) applicable to trade-related energy transition measures. This section focuses on the fundamental rules contained in the most influential of these agreements and assesses their implications for the energy transition. It is worth noting from the outset that existing international trade rules make no explicit distinction between fossil fuel and renewable energy products. The absence of such a distinction means that both pro-and anti-energy transition trade measures are, in principle, subject to the same international trade rules.

23 See Gabrielle Marceau, 'The WTO in the Emerging Energy Governance Debate' (2010) 5 *Global Trade and Customs Journal* 83.

24 See Asmelash (n 10).

25 See WTO, 'WTO Legal Texts' <www.wto.org/english/docs_e/legal_e/legal_e.htm> accessed 29 September 2023.

The difference, if there is any, primarily lies in the application of these rules to the two sets of trade-related energy transition measures as well as in the existence and adequacy of exceptions for pro-energy transition trade measures.

3.1 *Discriminatory Trade Measures*

Non-discrimination is one of the fundamental principles of the multilateral trading system. It is enshrined in the most favoured nations (MFN) and national treatment (NT) provisions of the GATT and the General Agreement on Trade in Services GATS).²⁶ The MFN provisions prohibit discrimination among like imported products, whereas the NT provisions prohibit discrimination between imported and domestic like products. These provisions may raise an issue in the context of the energy transition to the extent that countries discriminate between renewables and fossil fuels. A pro-energy transition discriminatory trade measure treats renewables more favourably than fossil fuels, while an anti-energy transition discriminatory trade measure treats fossil fuels more favourably than renewables. The provisions on non-discrimination prohibit both the anti-and pro-energy transition discriminatory trade measures to the extent that renewables and fossil fuels are 'like products'. The different environmental implications of the two sets of discriminatory measures plays no role whatsoever in determining their consistency with the non-discrimination principle. However, most fossil fuel and renewable energy products are unlikely to qualify as 'like products' within the meaning of the non-discrimination provisions. With the exception of electricity, internationally traded renewable energy and fossil fuel products are fundamentally different. Most fossil fuels are internationally tradable either in their crude or refined forms, but only the renewable energy generation equipment such as solar panels, wind turbines and wind towers (not the energy sources themselves (i.e. sun, wind, etc.) are internationally tradable. This means that the prohibition on discrimination does not apply to most discriminatory trade measures that treat the importation of renewable energy products (e.g. solar panels) more favourably than the importation of fossil fuel products (e.g. gasoline) or vice versa. This means two things for the energy transition. On the one hand, it means that the non-discrimination principles allow the adoption of pro-energy transition trade measures that treat

26 See General Agreement on Tariffs and Trade 1994 (adopted 15 April 1994, entered into force 1 January 1995) Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1867 UNTS 190 (GATT 1994) arts I and III; General Agreement on Trade in Services, Annex 1B to Agreement Establishing the World Trade Organization (signed 15 April 1994, entered into force 1 January 1995) 1869 UNTS 183 (GATS) arts II and XVII.

renewables more favourably than fossil fuels. On the other hand, it also means that the non-discrimination principle does not prevent the adoption of discriminatory trade measures that treat fossil fuels more favourably than their renewable energy counterparts.

However, the above conclusion applies only to instances where the two products in question are unlike. The issue is far more complicated when it comes to energy transition trade measures that discriminate between two like products. One such instance is discrimination between electricity produced from fossil fuels and renewable energy sources. A pro-energy transition trade measure that treats electricity generated from renewable energy sources more favourably than electricity generated from fossil fuels may constitute a breach of the non-discrimination principle to the extent that the two products are considered 'like' products. The Appellate Body in *Canada – Renewable Energy/FIT* found that the market for renewable electricity is different from the market for fossil fuel electricity.²⁷ This finding implies that renewable electricity is not like fossil fuel electricity. However, the Appellate Body made this finding in determining the existence of a 'benefit' within the meaning of the Agreement on Subsidies and Countervailing Measures (SCM Agreement) – not in determining 'likeness' within the meaning of the GATT provisions on non-discrimination. The finding of the Appellate Body in *Canada – Renewable Energy/FIT* has also been the subject of much criticism for its methodological incoherence.²⁸ Perhaps with the exception of consumer preferences, fossil fuel and renewable electricity meet the other elements of the traditional likeness criteria (i.e. physical characteristics, end-use, and customs classification). However, as the Appellate Body noted in *Japan – Alcoholic Beverages*, likeness is to be determined on a case-by-case basis depending on 'the context and the circumstances that prevail in any given case'.²⁹ There are currently no practical examples of energy transition trade measures that treat the importation/exportation of renewable electricity more favourably than the importation/exportation of fossil fuel electricity. The lack of such measures

27 See WTO, *Canada – Certain Measures Affecting the Renewable Energy Generation Sector (Canada – Renewable Energy)/ Canada – Measures Relating to the Feed-in Tariff Program (Canada – FIT Program)*, Reports of the Appellate Body (24 May 2013) WT/DS412/AB/R, WT/DS426/AB/R.

28 See 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 *JWT* 895.

29 WTO, *Japan – Taxes on Alcoholic Beverages (Japan – Alcoholic Beverages II)*, Report of the Appellate Body (1 November 1996) WT/DS8/R, WT/DS10/R, WT/DS11/R, 114.

is partly due to the current low level of international trade in electricity.³⁰ The rules on discrimination may stand in the way of countries seeking to treat the importation of renewable electricity more favourably than fossil fuel electricity in the future.

Another instance of discriminatory energy transition trade measures is those related to the treatment of domestic renewable energy products more favourably than imported ones. Such measures are subject to GATT Article III, Article 3.1(b) of the SCM Agreement and Article 2.1 of the Agreement on Trade-related Investment Measures (TRIMS Agreement). Much of the renewable energy disputes at the WTO involve local content requirements (LCRs) designed to promote the domestic production of renewable energy generation equipment. WTO Panels and the Appellate Body consistently ruled that such measures are inconsistent with GATT Article III (and thereby TRIMS Article 2.1). In *India – Solar Cells* and in *Canada – Renewable Energy/FIT* various exceptions were invoked to justify their discriminatory measures but the Appellate Body rejected their argument for one or another reason.³¹ While the door for justifying such measures is not completely closed, it is clear from the case law that such measures are inconsistent with existing international trade rules. However, the implication of the law and jurisprudence on LCRs for the energy transition is not entirely clear. It is difficult to characterise renewable energy LCRs as either pro-or anti-energy transition trade measures. On the one hand, such measures play an important political economy role in enabling governments to provide much-needed subsidies for renewable energy development and deployment.³² They may also help countries develop domestic renewable energy equipment manufacturing capacity. On the other hand, empirical evidence from countries such as India and South Africa shows that LCRs are protectionist trade measures that undermine the deployment of renewable energy technologies by making such technologies relatively more expensive in the domestic market. Studies suggest that LCRs may help promote the development and deployment of renewables only under certain conditions.³³ Whether renewable energy LCRs are pro-or anti-energy

30 On trade in electricity, see Thomas Cottier and Ilaria Espa (eds), *International Trade in Sustainable Electricity: Regulatory Challenges in International Economic Law* (CUP 2017).

31 See *Canada – Renewable Energy/FIT* (n 27); WTO, *India – Certain Measures Relating to Solar Cells and Solar Modules (India – Solar Cells)*, Report of the Appellate Body (14 October 2016) WT/DS456/AB/R.

32 See Timothy Meyer, 'How Local Discrimination Can Promote Global Public Goods' (2015) 95 *Boston University Law Review* 1937.

33 See Jan-Christoph Kuntze and Tom Moerenhout, 'Local Content Requirements and the Renewable Energy Industry: A Good Match?' (International Centre for Trade and Sustainable Development 2013).

transition trade measures therefore depends on the circumstances surrounding their design and implementation. Hence, the impact of the prohibition on LCRs on the energy transition can only be assessed on a case-by-case basis.

The non-discrimination principle may also affect the energy transition in relation to measures that discriminate between products based on the energy used in their production. Pro-energy transition trade measures treat renewable energy-based products more favourably than fossil fuel-based products. This would raise the controversial issue of process and production methods (PPMs). While the debate on PPMs is beyond the scope of this article, it is worth noting that the jurisprudence on PPMs suggests that products produced using renewable and fossil fuel energy are likely to be considered like products provided that they meet the likeness criteria.³⁴ Classic cases such as *US – Shrimp* and *EC – Asbestos* indicate that the consistency or otherwise of PPM-based trade measures with the non-discrimination principle ultimately lies in their justifiability under GATT Article XX. However, despite the challenges of justifying discriminatory measures under GATT Article XX, it is clear that the non-discrimination principle stands in the way of countries seeking to accelerate the energy transition through trade measures that discriminate in favour of renewable energy-based products.

3.2 Tariffs

The WTO rules on tariffs are relevant to the energy transition to the extent that countries impose tariffs on the importation/exportation of renewable energy and fossil fuel products. Pro-energy transition tariffs take the form of high tariffs on fossil fuel products to make such products relatively more expensive and hence less competitive. They may also take the form of low or no tariffs on renewable energy products. In contrast, anti-energy transition tariffs may come in the form of high tariffs on renewable energy products and/or low tariffs on fossil fuel products. The WTO requires its Members to negotiate tariff reductions on a reciprocal basis and ‘bind’ tariff duties by including them in their schedules of concessions. Once agreed, WTO Members cannot raise their tariffs above the agreed (bound) levels without compensating adversely affected members.³⁵ The lack of progress or failure of the Doha Round means that much of the bound tariffs on fossil fuel and renewable energy products were negotiated during the Uruguay Round even before the establishment of the WTO. Such tariffs and the rules governing them were therefore negotiated without the energy transition in mind.

34 For an overview of the PPMs debate, see Steve Charnovitz, ‘The Law of Environmental “PPMs” in the WTO: Debunking the Myth of Illegality’ (2002) 27 *Yale J Intl L* 59.

35 GATT 1994 art II.

Most WTO Members made limited tariff commitments on fossil fuels. In theory, this means that countries are free to levy high tariff rates on fossil fuel products without insofar as the tariffs are non-discriminatory. In practice, most countries impose extremely low tariffs on fossil fuels. In 2018, for example, the average tariff for crude petroleum was 1.84%, making it the 1250th lowest tariff using the HS4 product classification.³⁶ In contrast, renewable energy products face relatively higher tariffs and non-tariff barriers. More than twenty years of multilateral and plurilateral negotiations to liberalize trade in environmental goods and services – which includes renewable energy and energy efficiency technologies – have failed to produce any fruit. Renewable energy products such as solar panels and wind turbine components continue to face significant tariff barriers in different countries. These tariffs make renewables relatively more expensive for consumers. Such consideration led to the placement of the liberalization of tariff and non-tariff barriers to environmental goods and services on the Doha Development Agenda (DDA) in 2001.³⁷ However, like most other Doha issues, the negotiations on trade in environmental goods and services have stalled. Efforts to bypass the impasse by confining the scope of the negotiations to environmental goods and turning the multilateral negotiations into plurilateral ones have not worked either. While there are growing efforts to revitalize these negotiations (see Section 4.1) nothing concrete has emerged so far.

The failure to liberalize trade in renewable energy technologies has created a situation whereby tariffs on renewable energy products are higher than tariffs on fossil fuel products. Moreover, a recent study found that tariffs are overall substantially higher on low-carbon products than on their carbon-intensive counterparts.³⁸ The study attributes the difference primarily to political economy factors. Industries that use carbon-intensive products such as fossil fuels as intermediate inputs are well organized to lobby for high protection on their own outputs but low protection on their inputs.³⁹ Since final consumers are poorly organized, countries end up with greater protection on low-carbon products than on high-carbon products.⁴⁰ It is imperative to reverse the status quo if the international trade rules on tariffs are to facilitate the energy transition. As noted above WTO law is unlikely to stand in the

36 OEC, 'Crude Petroleum' <<https://oec.world/en/profile/hs/crude-petroleum>> accessed 20 September 2023.

37 See WTO, 'Ministerial Declaration' (14 November 2001) WT/MIN(01)/DEC/1 (Doha Declaration) art 31(iii).

38 See Joseph S Shapiro, 'The Environmental Bias of Trade Policy' (2021) 136 Q J Econ 831.

39 *ibid.*

40 *ibid.*

way of countries wishing to impose higher tariffs on fossil fuel products. Some countries (particularly in Europe) already impose internal taxes on fossil fuel consumption.⁴¹ It is important not only to expand the scope and application of such taxes but also to turn them into binding commitments. However, raising tariffs and other barriers to trade in fossil fuel products is not adequate on its own. It is important to complement such measures with the liberalization of trade in renewable energy products to make them economically more competitive and thereby enhance their development and deployment. While raising barriers to trade in fossil fuels may run counter to the trade liberalization agenda of the international trade regime, liberalising trade in renewable energy products offers a win-win outcome for both international trade and the energy transition.

3.3 *Quantitative Restrictions*

GATT Article XI prohibits the use of quantitative restrictions at the border such as quotas and import/export bans. The prohibition of quantitative restrictions has significant implications for the energy transition. Pro-energy transition quantitative restrictions typically limit the importation of fossil fuel products, while anti-energy transition quantitative restrictions limit the importation of renewable energy products. The rules on quantitative restrictions make no distinction between quantitative restrictions based on their underlying objective. This means that they prohibit both pro-and anti-energy transition quantitative restrictions. The prohibition on pro-energy transition quantitative restrictions runs counter to the need to phase out the production and consumption of fossil fuels. The success of the energy transition partly depends on government measures that restrict the production and consumption of fossil fuels.

Some countries have already introduced plans to phase out fossil fuels such as coal (e.g. Germany). The GCP has called for the phasedown of unabated coal power plants. COP26 has also seen the establishment of the intergovernmental Beyond Oil and Gas Alliance. These are important (albeit slow) steps towards the right direction within the climate change regime. Past trade disputes such as *US – Gasoline* have also shown the appetite of countries to impose at least indirect restrictions on the importation of fossil fuel products but there are no practical examples of import restrictions on fossil fuels taken to promote the energy transition. This is mainly because most countries are still heavily reliant on fossil fuels, but the situation is likely to change as the share of renewables in national energy mixes increases. The prohibition on quantitative restrictions contained in GATT Article XI is likely to stand in the way of

41 See Sakmar (n 16) 97.

countries that seek to use quantitative restrictions to limit the importation of fossil fuel products and thereby promote the development and deployment of renewable energy products. Such countries may justify their quantitative restrictions on environmental grounds under GATT Article XX(b) and (d), but their measure remains vulnerable to legal challenges.

3.4 *Subsidies and Countervailing Measures*

Subsidies and countervailing measures represent one of the most controversial areas of the interaction between international trade law and the energy transition. The subsidization of renewables, countervailing measures against subsidized fossil fuels and the removal of fossil fuel subsidies constitute pro-energy transition trade measures, while the subsidization of fossil fuels and countervailing measures against subsidized renewable energy products constitute anti-energy transition trade measures. The WTO rules on subsidies and countervailing measures contained in the SCM Agreement contribute to the energy transition to the extent that they encourage the adoption of pro-energy transition measures and discourage the adoption of anti-energy transition ones. It is worth noting from the outset that the SCM Agreement makes no distinction whatsoever between fossil fuel and renewable energy subsidies.

Subsidies are one of the most popular trade measures in the transition policy toolkit. Almost all countries across the world subsidize the production and consumption of renewable energy sources.⁴² The IPCC has documented that such subsidies have played a key role in the promotion of renewables across many countries.⁴³ The prevalent view within the energy transition literature is that many more such subsidies are required if renewables are to overtake fossil fuels as the primary sources of energy. The justification for renewable energy subsidies rests not only on climate change but also on market failure. Such subsidies are necessary to offset the failure of the market to account for the positive externalities associated with renewable energy production and consumption. The case for the subsidization of renewables also stems from the need to level a global energy playing field tilted towards fossil fuels by decades of fossil fuel subsidies. Despite the strong environmental and political economy case for renewable energy subsidies, renewable energy subsidies currently account only for a fraction of the huge amount of money governments spend on the production and consumption of fossil fuels. The International Energy Agency (IEA) estimated that fossil fuel consumption subsidies in

42 See REN21, 'Renewables 2020 Global Status Report' (REN21 2020).

43 See IPCC, 'Renewable Energy Sources and Climate Change Mitigation: Special Report of the Intergovernmental Panel on Climate Change' (CUP 2012).

selected countries were around USD 440 billion in 2021.⁴⁴ This figure has since surpassed over USD 1 trillion in the aftermath of the recent energy crisis.⁴⁵ Switching these subsidies from fossil fuels to renewables is essential to make the transition happen in time.⁴⁶ The subsidization of fossil fuels runs counter to the numerous intergovernmental commitments to phase out fossil fuel subsidies and Article 2.1(C) of the Paris Agreement that enjoins its parties to make finance flow consistent with a pathway towards low greenhouse gas emissions.⁴⁷ The Glasgow Climate Pact recently reiterated the call for phasing out fossil fuel subsidies.⁴⁸ Despite these calls and commitments, fossil fuel subsidies remain pervasive.

The international trade regime has the only binding international rules applicable to energy subsidies but the adequacy of such rules to discipline environmentally harmful fossil fuel subsidies has been the subject of much academic and policy debate over the last few years. These rules are contained in the SCM Agreement. The SCM Agreement defines subsidies as financial contributions that confer a benefit upon the recipient.⁴⁹ Such subsidies are subject to the SCM Agreement only to the extent that they are also specific.⁵⁰ Specific subsidies are either prohibited or actionable depending on their adverse effect on international trade.⁵¹ The SCM Agreement outright prohibits two types of subsidies – export subsidies and import substitution subsidies – because of their alleged adverse effect on international trade. Other specific subsidies are actionable insofar as they adversely affect the interest of another Member. The SCM Agreement originally contained a third category of specific subsidies – referred to as non-actionable subsidies.⁵² However, this category was provisional and expired in 1999 due to the failure of WTO Members to agree on the terms of its extension.

The expiry of the non-actionable category meant that the SCM Agreement treats subsidies solely based on their effect on international trade. Whether a subsidy is environmentally harmful or beneficial plays no role whatsoever in

44 See IEA, 'World Energy Outlook 2021' (IEA 2021) 80.

45 See IEA, 'Fossil Fuels Consumption Subsidies 2022 – Analysis' <www.iea.org/reports/fossil-fuels-consumption-subsidies-2022> accessed 29 September 2023.

46 See Laura Merrill and others, 'Making the Switch From Fossil Fuel Subsidies to Sustainable Energy' (Nordic Council of Ministers, 2017) 537.

47 See Asmelash, 'The Regulation of Environmentally Harmful Fossil Fuel Subsidies' (n 11).

48 See UNFCCC (n 4).

49 Agreement on Subsidies and Countervailing Measures (signed 15 April 1994, entered into force 1 January 1995) 1869 UNTS 14 (SCM Agreement) art 1.

50 *ibid* arts 1.2 and 2.

51 *ibid* arts 3 and 5.

52 *ibid* art 8.

determining its treatment under the SCM Agreement. The lack of environmental consideration means that the rules on subsidies facilitate the energy transition only to the extent that pro-transition energy subsidies are not trade distortive and anti-transition subsidies are trade distortive and meet the conditions thereof. In practice, however, most pro-energy transition subsidies such as renewable energy subsidies tend to have some trade-distortive effects, while anti-energy transition subsidies such as fossil fuel subsidies tend to have little trade-distortive effects. This has made renewable energy subsidies more vulnerable to legal challenges than fossil fuel subsidies under the current rules on subsidies.⁵³ While renewable energy subsidies have been the subject of several legal challenges, fossil fuel subsidies are yet to face any formal challenge within the multilateral trading system. To be sure, adjudication is not the only means through which the trading system influences domestic trade policy. Indeed, fossil fuel subsidies have been the subject of several informal initiatives within the multilateral trading system over the last few years. However, the continued subsidization of fossil fuels suggests that such initiatives have had limited impact.

Aligning the international trade rules on subsidies with the energy transition requires reforming the current rules to create explicit and specific exemptions for the subsidization of renewables and stricter disciplines that impede the subsidization of fossil fuels. Absent such legal reform, the rules on subsidies will continue to impede than facilitate the energy transition.

3.5 *Dumping and Antidumping Measures*

Dumping and antidumping measures are one of the trade measures with increasing relevance to the energy transition. Dumping involves exporting products at a price below their fair market value, while antidumping concerns measures (taken by the importing country) taken to remove the injury to domestic industries producing like products. The WTO rules on antidumping contained in GATT Article VI and the Agreement on Antidumping (ADA) do not regulate the private practice of dumping. Instead, they regulate the measures WTO Members take in response to dumping (i.e. antidumping measures).⁵⁴ Antidumping measures typically take the form of additional import duties on the dumped products. The rules on antidumping do not prohibit the use of antidumping measures but set substantive and procedural

53 See Asmelash, 'Energy Subsidies and WTO Dispute Settlement' (n 11).

54 See Agreement on Implementation of Article VI of GATT 1994, Annex 1A to Agreement Establishing the World Trade Organization (signed 15 April 1994, entered into force 1 January 1995) 1868 UNTS 201 (Antidumping Agreement).

requirements for their imposition. The extant antidumping rules may adversely affect the energy transition to the extent that they discourage the adoption of pro-energy transition antidumping measures and encourage the adoption of anti-energy transition antidumping measures.

Since fossil fuels are typically exported at higher prices than domestic market prices (mainly due to price controls in fossil fuel exporting countries) fossil fuel dumping is not an issue as such. This is further reinforced by the fact that most fossil fuel importing countries do not have domestic fossil fuel industries that require protection from dumped fossil fuel imports. This might change in the future. For example, fossil fuel exporting countries (e.g. the United States) may introduce higher environmental standards that result in higher domestic fuel prices than export prices. In such cases, importing countries may wish to use antidumping measures to discourage the importation of fossil fuels and/or protect their domestic renewable energy industry. The extant rules on antidumping allow such measures to the extent that the importing country meets the substantive and procedural requirements thereof. The importing country must establish (through an investigation carried out in accordance with the procedural rules set out in the ADA) the existence of dumping, material injury to the domestic industry producing the like product and a causal link between the two. There are two problems with these requirements from an energy transition perspective. First, they do not allow to take into account the environmental impacts of the dumping. Second, they make antidumping measures available only to countries that produce like products. This significantly limits the prospects of non-fossil fuel-producing countries imposing antidumping measures against dumped fossil fuel imports unless fossil fuel and renewable energy products are considered like products.

Dumping and antidumping measures are currently more pronounced in the renewable energy sector. The competition to seize the growing global market for renewable energy equipment has led to the use of unfair trade practices such as dumping. Governments are increasingly relying on antidumping measures to remove the adverse effects of dumping on their domestic industry. This has turned renewable energy antidumping measures a prominent part of what has been referred to as ‘the next generation of trade and environment disputes’.⁵⁵ In 2014, UCTAD identified 26 antidumping cases involving renewable energy products.⁵⁶ Dumping normally lowers the price of renewable energy

55 See Mark Wu and James Salzman, ‘The Next Generation of Trade and Environmental Conflicts: The Rise of Green Industrial Policy’ (2014) 108 *Northwestern University Law Review* 401.

56 See UNCTAD, *Trade Remedies: Targeting the Renewable Energy Sector* (UN 2014) 4.

technologies in the importing country and thereby promotes their deployment. As such, antidumping measures can be considered as anti-energy transition trade measures. The rules on antidumping may facilitate the energy transition to the extent that they restrict the resort to antidumping measures against renewables.

However, there are two considerations that undermine the above conclusion. The first is the very rationale for antidumping measures – the concern about the predatory nature of dumping.⁵⁷ It is argued that businesses engage in dumping with the intent to drive out competitors from the market. The proponents of antidumping measures argue that since such businesses ultimately increase their prices, it is important to provide temporary protection to offset the potential injury to the domestic industries. From this perspective, dumping benefits consumers in the short term but poses a risk in the long term. The management of this risk requires or justifies the use of antidumping measures. The second consideration relates to the fact that antidumping measures are also part of the green industrial policy toolkit that countries may rely on to develop their renewable energy equipment manufacturing capacity. From the perspective of developing countries, the inaccessibility of antidumping measures is yet another challenge to their aspiration to promote domestic renewable energy generation equipment manufacturing. These two considerations call for a more nuanced approach to the regulation of antidumping measures. The current antidumping rules are primarily focused on trade distortion and have no in-built mechanisms to consider the environmental and social implications of dumping.

3.6 *Standards and Technical Regulations*

Standards and technical regulations are considered ‘among the most effective tools to promote low-carbon methods of production and consumption’.⁵⁸ They can facilitate the energy transition by forcing reliance on renewable and energy-efficient technologies.

However, regulatory divergence across countries may form an obstacle to international trade in such technologies by creating additional costs for foreign products. Such measures may also impede international trade when they are discriminatory or more trade-restrictive than necessary. Such considerations underpin the WTO Agreement on Technical Barriers to Trade (TBT

57 See Brian Kelly, ‘The Law and Economics of Simultaneous Countervailing Duty and Anti-Dumping Duty Proceedings’ (2008) 3 *Global Trade and Customs Journal* 41.

58 See Peter Cameron, ‘The Energy Charter Treaty Provisions on Low Carbon Investment’ (Final Report, Energy Charter Secretariat, 2013) 33.

Agreement).⁵⁹ The provisions of the TBT Agreement set legal conditions for the adoption of standards (voluntary), technical regulations (mandatory) and conformity assessment procedures. These provisions do not impose any prohibition but seek to tackle regulatory divergence and ensure that standards and technical regulations do not discriminate and form unnecessary obstacles to international trade. They do so by encouraging reliance on international standards as a basis for national standards and technical regulations.⁶⁰ Harmonization of standards and technical regulations around international standards helps reduce transaction costs and the risk of lobbying by domestic industries for trade-restrictive national standards and technical regulations.⁶¹ Such measures therefore undermine the transition when different national standards exist (regulatory divergence) or when the national standards are more stringent than existing international standards. From this perspective, international trade law can help reduce impediments to trade in renewable energy products by promoting standardization in such products. One of the international standard-setting bodies – the International Organization for Standardization (ISO) – has already developed over 200 renewable and energy efficiency standards. In principle, the TBT Agreement encourages countries to harmonize their standards and technical regulations around these standards and thereby facilitate the transition towards a sustainable energy future. However, in practice, renewable energy products still face divergent national standards across the world. Wind energy products and biofuels are particularly subject to divergent national standards.⁶² The development of further international renewable energy standards and the effective enforcement of the TBT Agreement is therefore essential to the promotion of renewables. It is also important that international standards are set high enough to discourage the use of fossil fuels.

The TBT Agreement recognizes that standards and technical regulations serve legitimate public policy goals. It also authorizes departure from existing international standards when ‘such international standards or relevant parts would be an ineffective or inappropriate means for the fulfilment of

59 See Agreement on Technical Barriers to Trade, Annex 1A to Agreement Establishing the World Trade Organization (signed 15 April 1994, entered into force 1 January 1995) 1868 UNTS 120 (TBT Agreement).

60 *ibid* art 2.4.

61 See Timo Gerres and others, ‘To Ban or Not to Ban Carbon-Intensive Materials: A Legal and Administrative Assessment of Product Carbon Requirements’ (2021) 30 *Review of European, Comparative & International Environmental Law* 249, 261.

62 See OECD, *Overcoming Barriers to International Investment in Clean Energy* (OECD 2015) 104–07.

the legitimate objectives pursued'.⁶³ However, its primary focus remains on preventing trade distortion. The environmental implications of standards and technical regulations are only secondary to their trade implications. This approach discourages countries from applying trade-distorting environmental standards for energy products.

3.7 *Public Procurement*

Public procurement is another popular policy instrument through which governments have been trying to enhance the share of renewables in their national energy mix. In what is commonly referred to as 'green public procurement', governments purchase renewable energy to meet their energy demand. Such measures are subject to the plurilateral Agreement on Government Procurement (GPA). The GPA is applicable only to its 21 parties (counting the EU and its 27 Member States as one). The rules contained therein primarily prohibit discriminatory practices in government purchases.⁶⁴ They also enjoin the parties from preparing, adopting or applying technical specifications 'with a view to, or with the effect of, creating unnecessary obstacles to international trade'.⁶⁵ The fact that only a limited number of WTO Members are parties to the GPA lessens the potential impact of its rules on the energy transition. At the same time, the relevance of public procurement to the promotion of renewables suggests that any restriction on the ability of governments to procure renewables over fossil fuels carries a potential threat to the energy transition. Non-parties to the GPA can discriminate between domestic and imported products in government procurement provided that they meet the condition set out in GATT Article III:8. In *Canada – Renewable Energy/FIT* and *India – Solar Cells*, Canada and India unsuccessfully tried to justify their renewable energy local content requirements (LCRs) under this provision.⁶⁶ The Appellate Body in both cases held that the derogation from the national treatment principle of GATT Article III applies only to the extent that the discriminated and procured products are the same. Canada and India discriminated against renewable energy generation equipment (e.g. solar cells, wind turbines, etc.) while procuring renewable electricity. The limitation of the government procurement derogation suggests that there is a need to strengthen the rules on public procurement in such a way that they afford enough

63 TBT Agreement art 2.4.

64 Agreement on Government Procurement (signed 15 April, entered into force 1 January 1995) (GPA) art III.

65 *ibid* art VI.

66 See *Canada – Renewable Energy/FIT* (n 27); *India – Solar Cells* (n 31).

flexibility for governments to experiment different policy instruments.⁶⁷ Ideally, such reforms could also include the introduction of new rules, for example, that prohibit governments from purchasing fossil fuel products when renewable alternatives are available. However, given the reluctance of the WTO membership to join the GPA and undertake binding commitments in public procurement such radical pro-energy transition reforms are perhaps infeasible – especially under the current political climate in the multilateral trading system.

3.8 *Intellectual Property Rights*

Technology is critical to the energy transition. The speed and scale of the transition rely on the rapid diffusion of existing low-carbon energy technologies and the development of new energy technologies such as mass battery storage. The legal regimes for the protection of intellectual property rights (IPRs) accordingly play a central role in the realization of the energy transition. Such regimes normally attempt to strike a balance between granting exclusive rights to stimulate innovation and preserving a robust public domain to facilitate wider public access to innovation.⁶⁸ However, there is considerable debate as to where the balance should lie. The proponents of strong IPRs (mostly developed countries and their multinational corporations) present strong IPRs as catalysts for the development and dissemination of low-carbon energy technologies. Their claim rests on the assumption that strong IPRs stimulate innovation and encourage the diffusion of technologies. The opponents (mostly developing countries) view strong IPRs as impediments to the transfer and dissemination of low-carbon energy technologies. The gist of their argument is that IPRs make it more difficult for developing countries to access such technologies at favourable terms by enabling IPRs owners to keep prices unreasonably high.⁶⁹ The international climate change regime and the multilateral trading system (since the adoption of the Trade-Related Intellectual Property Rights (TRIPS) Agreement) have been the primary fora for this debate. The global health pandemic and issues around access to vaccines have given fresh impetus and urgency to this debate. The TRIPS Agreement contains provisions that, in principle, allow governments to pursue public policy objectives, but

67 See Mandy Meng Fang, 'Shades of Green: Mapping the Parameters of the GATT Article III:8(a) Government Procurement Derogation in the Renewable Energy Transition' (2019) 20 JWIT 553.

68 Marceau (n 23) 91.

69 David G Ockwell and others, 'Intellectual Property Rights and Low Carbon Technology Transfer: Conflicting Discourses of Diffusion and Development' (2010) 20 Global Environmental Change 729, 730.

the vaccine controversy has shown the limitations of these provisions. The lack of adequate flexibility within the TRIPS Agreement undermines the transfer and dissemination of low-carbon energy technologies to developing countries.

Lying at the heart of the IPRs debate is the concentration of IP ownership in developed countries. Most renewable energy-related patents, for example, are concentrated in OECD countries and China.⁷⁰ Developed countries seek to maintain their competitiveness through IPRs protection regimes such as the TRIPS Agreement, while developing countries aspire to develop domestic expertise in such technologies. As noted earlier, the development of domestic capacity is of paramount importance to the justness of the energy transition. Access to renewable energy technologies has a far-reaching impact that goes beyond access to renewable energy. As Goldthau et al. aptly put it, 'as climate policies progress and become a determinant also in global trade, a low-carbon footprint ensures a country's products stay competitive in the global market'.⁷¹ The question is therefore not merely that of energy access but fairness, equity and justice. This is even more pronounced when one considers the fact that most fossil fuel reserves are currently in developing countries. Without effective mechanisms to ensure the development of indigenous capacity in developing countries, the energy transition will serve as yet another mechanism for the transfer of wealth from developing to developed countries. Under the existing legal framework, the energy transition entails developing countries abandoning their primary source of income and livelihood and relying on developed countries and their multinationals. There are mechanisms to ensure the transfer of technology to developing countries and thereby overcome these challenges. These include compulsory licensing and parallel importation that are already embodied in the TRIPS. However, these mechanisms have proved practically difficult to pursue. Recent years have also seen the emergence of public-private partnerships led by international organizations to overcome the IPRs' limitations, but their practical impact in ensuring the transfer of technology remains unclear. These considerations suggest that the multilateral trade rules on IPRs contained in the TRIPS and their interpretation and application have a significant role to play in the energy transition.

70 Andreas Goldthau, Laima Eicke and Silvia Weko, 'The Global Energy Transition and the Global South' in Manfred Hafner and Simone Tagliapietra (eds), *The Geopolitics of the Global Energy Transition* (Springer International 2020) 319.

71 *ibid* 322.

3.9 *Safeguard Measures*

Safeguard measures have emerged as the latest tools countries deploy to promote and protect their domestic renewable energy equipment manufacturing industry over the last few years.⁷² The US and India are the pioneers in introducing safeguard measures (in the form of tariffs and quotas) to offset the adverse impacts of a sudden surge in imports on their domestic renewable energy equipment industries. The use of safeguard measures is subject to the Agreement on Safeguards and GATT Article IX. The two agreements set out the conditions under which WTO Members may impose safeguard measures, which in principle are contrary to GATT Articles II and/or XI. The Panel in *US – Safeguard Measure on PV Products* found that the US safeguard measures on solar panels were consistent with its obligations under the Agreement on Safeguards and the GATT.⁷³ I argued elsewhere that this may open the floodgates in renewable energy safeguards given that the WTO jurisprudence has made it almost impossible to employ green industrial policies such as LCRs.⁷⁴ However, it is worth noting that the conditions for the WTO consistency of safeguards do not take into account the environmental effects of safeguard measures. As protectionist tools, safeguards make renewable energy generation equipment relatively more expensive and hence undermine the deployment of renewables in the short term. At the same time, such policy tools are essential in the development of domestic renewable energy equipment manufacturing capacity especially in developing countries. It is therefore essential to find the right balance and introduce environmental considerations into the international rules governing safeguard measures.

3.10 *Investment Measures*

The rise in global investment in renewables has been one of the major developments in the energy sector over the last few decades. The IEA estimated global energy investment to reach around USD 2.8 trillion in 2023 – over 60% (USD 1.7 trillion) of which going to renewables.⁷⁵ However, both the scale

72 See Henok Asmelash, 'The Turn to Safeguard Measures in the Solar Trade War' (2022) 56 *Journal of World Trade* 803; Mandy Meng Fang, 'Old Wine in a New Bottle? Green Industrial Policy and the Use of Safeguards in the Solar Sector' (2021) 55 *JWT* 573.

73 See WTO, *United States – Definitive Safeguard Measures on Imports of Certain Steel Products (US – Steel Safeguards)* Reports of the Appellate Body (10 December 2003) WT/DS248/AB/R, WT/DS249/AB/R, WT/DS251/AB/R, WT/DS252/AB/R, WT/DS253/AB/R, WT/DS254/AB/R, WT/DS258/AB/R, WT/DS259/AB/R.

74 See Asmelash (n 72).

75 See IEA, 'World Energy Investment 2023' (IEA, 2023) 12.

and pattern of energy investment raise concerns from the energy transition perspective. The world needs to invest over USD 4 trillion each year to achieve net zero emissions by 2050 and limit global warming to below 1.5°C.⁷⁶ However, a significant portion of global energy investment still flows towards fossil fuels (USD 1 trillion in 2023). Such investment locks the world into an unsustainable energy future for decades to come and thereby delays the transition. It also runs directly counter to the goal of the Paris Agreement to make finance flow consistent with a pathway towards low greenhouse gas emissions. The second concern relates to the significant difference in the distribution of global capital allocation.⁷⁷ Much of global investment in renewables is concentrated in three jurisdictions: the EU, the US and China. According to the IEA, 'more than 90% of the increase in clean energy investment since 2021 has taken place in advanced economies and China'.⁷⁸ The limited renewable energy investment flow towards developing countries risks perpetuating the energy access problems that characterized the fossil fuel era and undermines the justness of the current energy transition.

Such considerations put the spotlight on the international investment regime. It is beyond the scope of this article to examine whether and to what extent the international investment regime is part of the problem or solution to these problems.⁷⁹ While the WTO lack a comprehensive legal framework for investment relations, the Agreement on Trade-Related Investment Measures (TRIMs) contains provisions relevant to certain investment measures. The EU and Japan in *Canada – Renewable Energy/FIT*, the United States in *India – Solar Cells* and India in *US – Renewable Energy* already invoked these provisions to challenge renewable energy LCRs. As I noted earlier in this section the difficulty of clearly characterizing renewable energy LCRs as pro-or anti-energy transition trade measures, but the fact that the TRIMs Agreement does not take into account the environmental impacts of investment measures raises concern from the energy transition perspective. First, the lack of environmental considerations makes pro-energy transition measures vulnerable to legal challenges under the TRIMs Agreement. To be sure, TRIMs Article 3 extends the application of all GATT exceptions (including GATT Article XX) to the TRIMs Agreement but we have already discussed the limitation of those exceptions. Second, anti-energy transition investment measures can easily

76 IEA (n 6).

77 Goldthau, Eicke and Weko (n 70) 320.

78 IEA (n 75) 16.

79 See Kyla Tienhaara and others, 'Investor-State Disputes Threaten the Global Green Energy Transition' (2022) 376 *Science* 701.

escape scrutiny under the TRIMS Agreement insofar as they have no adverse effect on international trade/investment.

4 Aligning International Trade Law and the Energy Transition

The preceding section has shown how extant international trade rules are not fully equipped to deal with the peculiarities of the energy transition. This is unsurprising given that they were designed for the fossil fuel economy with inadequate environmental considerations. In fact, environmental issues were not on the initial agenda of the Uruguay Round negotiations that brought about most of the current rules. The word ‘environment’ appears three times in the *Punta del Este* Declaration that launched the Uruguay Round, but with a reference to ‘competitive environment’ ‘economic environment’ and ‘trading environment’.⁸⁰ The negotiators paid attention to environmental issues only ‘in the waning days of the Uruguay Round’ due to developments in the international climate change regime and the backlash against the controversial GATT panel reports in the *Tuna/Dolphin* disputes.⁸¹ The negotiators responded by adding a preambular statement on sustainable development and including environmental exceptions to some of the newly concluded Uruguay Round Agreements (e.g. Article 8 of the SCM Agreement). More importantly, they promised to ensure the mutual supportiveness of trade and environment in the future by establishing the Committee on Trade and Environment (CTE) with a broad mandate to identify areas of conflict and synergy between trade and environment.⁸² The CTE identified several areas, but only fisheries subsidies and environmental goods and services made it to the environmental package of the Doha Development Agenda in 2001.⁸³ The negotiations on environmental goods and services have failed (see below) and the fisheries subsidies negotiations took more than two decades to conclude. There is a widespread understanding in academic and policy circles that the multilateral trading system has so far failed to deliver on its environmental promise.

While the legislative front remained inactive, the judiciary has been active over the last two decades in addressing trade and environmental issues. The Appellate Body has been credited for making important jurisprudential moves that preserved or created policy space for countries to pursue environmental

80 See Ministerial Declaration on the Uruguay Round (20 September 1986) (MIN DEC).

81 See Steve Charnovitz, ‘The WTO’s Environmental Progress’ (2007) 10 JIEL 685, 686.

82 See WTO Decision on Trade and Environment (15 April 1994) MTN/TNC/45(MIN).

83 Doha Declaration (n 37) paras 31–33.

objectives.⁸⁴ Decisions in classic trade and environment disputes such as *US – Shrimp*, *US – Gasoline* and *Brazil – Retreaded Tyres* have shown the willingness of the WTO adjudicators to interpret and apply international trade rules in an environmentally friendly manner. However, the judiciary can only do as much. Decisions in recent trade and environment disputes such as *Canada – Renewable Energy/FIT* have shown the limitations of adjudication to fill the huge legislative gap on its own.⁸⁵ More importantly, the judiciary itself is now undergoing an existential crisis with a dysfunctional Appellate Body. It remains unclear whether and in what form the Appellate Body will return but the criticisms that brought its demise (e.g. judicial activism) suggest that it is unlikely for it to return with the same appetite and mandate to perform ‘legal acrobatics’ to safeguard trade restrictive environmental protection measures in the absence of legal reform.⁸⁶ The crisis undoubtedly undermined the potential of adjudication to align international trade rules with environmental policy goals.

The paralysis in the formal trade lawmaking process and the recent adjudicatory crisis are leading countries towards alternative ways of tackling climate change and environmental concerns in the multilateral trading system. The two most prominent alternative pathways are informal regulation and plurilateral trade agreements. In the following two subsections, we will consider the legitimacy and effectiveness of these two alternative pathways in aligning international trade rules with the sustainable energy transition.

4.1 *Plurilateral Initiatives and Their Legitimacy Crisis*

One of the major developments in international trade governance over the last two decades has been the rise of preferential and plurilateral trade arrangements. The deadlock in multilateral trade negotiations has led countries to resort to alternative trading arrangements with a limited number of participants. While preferential trade agreements (PTAs) operate outside the auspices of the WTO, plurilaterals are trade agreements among a subset of WTO Members negotiated and administered within the legal and institutional architecture of the WTO.⁸⁷ Such initiatives are not new to the multilateral

84 See Robert Howse, ‘The World Trade Organization 20 Years On: Global Governance by Judiciary’ (2016) 27 EJIL 9.

85 See Henok Asmelash, ‘The First Ten Years of WTO Jurisprudence on Renewable Energy Support Measures: Has the Dust Settled Yet?’ (2023) WTR (forthcoming).

86 See Aaron Cosbey and Petros Mavroidis, ‘A Turquoise Mess: Green Subsidies, Blue Industrial Policy and Renewable Energy: The Case for Redrafting the Subsidies Agreement of the WTO’ (2014) 17 JIEL 11, 12.

87 For a comparison between preferential and plurilateral trading arrangements, see Bernard M Hoekman and Petros C Mavroidis, ‘WTO “à La Carte” or “Menu Du Jour”? Assessing the Case for More Plurilateral Agreements’ (2015) 26 EJIL 319.

trading system. The Kyoto Codes of the GATT era and the GPA are typical examples of plurilateral trade agreements within the multilateral trading system. However, the number and coverage of plurilateral trade arrangements have increased exponentially over the last decade. The 2017 Buenos Aires WTO Ministerial saw the launch of several plurilaterals rebranded as joint statement initiatives (JSI).⁸⁸ These initiatives cover a wide range of trade issues from investment facilitation and services domestic regulation to e-commerce and trade and environmental sustainability. These are issues areas in which multilateral trade negotiations struggled to progress. The logic behind these initiatives is to introduce flexibility and variable geometry into the multilateral trading system by allowing some willing countries ‘to go ahead while others are unready or reluctant’.⁸⁹ The proponents of plurilaterals in academia and practice praise such initiatives as effective and flexible routes out of the paralysis in multilateral trade negotiations.

Recent years have seen a growing resort to plurilaterals to address trade and environment issues in the multilateral trading system. First, the Doha Round negotiations on environmental goods and services were turned into a plurilateral initiative confined to trade in environmental goods in 2015 in a bid to accelerate the negotiations. Second, an informal grouping of six advanced economies launched negotiations towards an Agreement on Climate Change and Trade Sustainability (ACCTS) in September 2019.⁹⁰ Third, a group of WTO members launched a joint initiative on trade and environmental sustainability ‘to collaborate, prioritize and advance discussions on trade and environmental sustainability’ in November 2020.⁹¹ These initiatives show a growing resort to plurilaterals to address trade and environmental issues that are of paramount importance to the energy transition. The plurilateral negotiations on environmental goods agreement (EGA) involve the liberalization of trade in renewable energy generation equipment.

More specifically, the liberalization of trade in environmental goods and services and the elimination of harmful fossil fuel subsidies are central to the ACCTS. These are important steps towards putting international trade law to the service of the energy transition. However, they all suffer from an

88 See Peter Ungphakorn, ‘Explainer: The 17 WTO Plurilaterals and “Joint-Statement Initiatives”’ (*Trade β Blog*, 3 January 2022) <<https://tradebetablog.wordpress.com/2022/01/03/17-wto-plurilaterals-joint-statement/>> accessed 29 September 2023.

89 *ibid.*

90 See ‘Joint Leaders’ Statement on the Launch of the “Agreement on Climate Change, Trade and Sustainability” Initiative’ (2019) <www.beehive.govt.nz/sites/default/files/2019-09/ACCTS%20joint%20leaders%20statement.pdf> accessed 19 September 2023.

91 WTO, ‘Communication on Trade and Environmental Sustainability’ (2020) WT/CTE/W/249, para 2.

important limitation that raises questions about their legitimacy. India and South Africa recently contested the legality and legitimacy of negotiating plurilaterals within the multilayering system.⁹² It is beyond the scope of this article to provide a detailed analysis of these issues, but it is important to note that these negotiations are taking place without the involvement of some of the key stakeholders in the global energy transition. The escape route that plurilaterals offer from the deadlock in multilateral trade negotiations appears to be an exclusive one. One of the advantages of the multilateral trading system over preferential trade arrangements is the potential to set multilateral rules applicable to a wide range of countries. Plurilaterals create fragmentation by creating trade rules applicable to a self-selected subset of WTO Members. They also perpetuate the historical exclusive lawmaking in the multilateral trading system. The fact that developed countries were the main architects of the multilateral trade rules has led to the creation of multilateral trade rules that cater to the needs of developed countries. Efforts to rectify this through the Doha Round negotiations have failed to bear any meaningful fruit.

The resort to plurilateralism will have significant implications from a just transition perspective. The plurilateral rules negotiated in the absence of most developing and least developed countries are unlikely to reflect the needs and interests of such countries. Given the importance and impact of the transition on such countries, their absence from the negotiating table would undermine the inclusivity and effectiveness of the attendant rules. The proponents of plurilaterals argue that the open nature of plurilaterals allows non-participants to benefit from the resultant rules without undertaking the obligations therein. They also insist that non-participants have the opportunity to join the initiatives whenever they are ready. This open plurilateral approach is being presented as a WTO-consistent and win-win approach that benefits both participants and non-participants alike. However, what such claims notably miss is the fact that the privilege plurilaterals give the initial participants to design the rules in line with their needs and interests. Open plurilaterals also allow the initial participants to determine the terms of accession that non-participants must meet to join the initiatives in the future. All these suggest that plurilaterals on issues of wider interest such as trade and environment will only serve as exclusive escape routes from the current paralysis in multilateral trade negotiations. I have argued elsewhere in the context of fossil fuel subsidies that the proponents of plurilateral initiatives such as ACCTSA need to ensure the

92 See WTO, 'The Legal Status of "Joint Statements Initiatives" and Their Negotiated Outcomes' (Communication from India and South Africa, 2021) WT/GC/W/819.

inclusivity of their initiatives.⁹³ This does not necessarily mean abandoning plurilateral initiatives altogether but at least providing plenty of opportunities and support for all countries to participate in these negotiations from the outset regardless of their intention to ultimately join the initiatives. It is highly important that the views and perspectives of communities from across the world are actively sought and incorporated into these negotiations. One way of doing so is opening the plurilateral trade negotiations for non-governmental stakeholders that represent the voices of marginalized communities.

4.2 *Informal Initiatives and Their Effectiveness*

Another development in efforts to tackle environmental issues in the multilateral trading system is the increasing resort towards informal regulation or lawmaking. Informal international lawmaking has been defined as cross-border cooperation between public authorities that involves non-traditional forums for negotiation (process informality), and/or non-traditional diplomatic actors (actor informality) and/or non-formal sources of international law (output informality).⁹⁴ Recent efforts to tackle environmental issues in the multilateral trading system contain strong process and output informality. They depart from the traditional approach of international trade governance through formally binding rules (outcome informality) and dispute settlement system (process informality). Spearheading the informal regulation of trade and environment issues in the multilateral trading system has been the informal grouping of countries. There are currently three informal groups with overlapping memberships – the Friends of Fossil Fuel Subsidy Reform (FFFSR), the Friends of Sustainable Trade (FAST) and the TESSD. These three groups have overlapping mandates on issues relevant to the energy transition such as fossil fuel subsidy reform. The FFSR comprises seven WTO Members and Ethiopia and was established to advance intergovernmental actions against environmentally harmful fossil fuel subsidies. New Zealand and Costa Rica frequently speak on behalf of FFSR calling for action against fossil fuel subsidies within the multilateral trading system. While some of the FFSR Members are part of the ACCTS initiative to introduce binding rules on fossil fuel subsidies, their focus has been on raising awareness and facilitating discussions on fossil fuel subsidies. They have successfully brought fossil fuel subsidies to the CTE agenda. They were behind the first-ever WTO Ministerial Statements on

93 See Asmelash, 'The Regulation of Environmentally Harmful Fossil Fuel Subsidies' (n 11).

94 See Joost Pauwelyn, Ramses A Wessel and Jan Wouters, 'An Introduction to Informal International Lawmaking' in Joost Pauwelyn, Ramses A Wessel and Jan Wouters (eds), *Informal International Lawmaking* (1st edn, OUP 2012) 22.

Fossil Fuel Subsidies issued in 2017.⁹⁵ They have also organized public conferences and workshops by inviting experts from outside to facilitate discussions within the multilateral trading system. Most importantly, they have used the Trade Policy Review Mechanism (TPRM) to challenge the subsidization of fossil fuels. These informal approaches have brought much awareness around the environmental impacts of fossil fuel subsidies and the need to tackle such subsidies within the WTO. This is evident in the fact that fossil fuel subsidies have emerged from obscurity to prominence in the trade and environment debate. Fossil fuel subsidy reform is now one of the first items on the CTE agenda.⁹⁶ The TESSD aims to revitalize the WTO's trade and environment agenda. The first on the TESSD agenda is to reactivate the negotiations on trade in environmental goods and services. The liberalization of trade in environmental goods and services is widely considered as the low-hanging fruit of the trade and environment interaction. Over two years of discussion failed to bear fruits partly because of disagreement over the definition of environmental goods and services.

However, it is not yet clear how much informal regulations are effective in addressing the thorny issue of the relationship between trade and environment. For example, the ACCTS initiative clearly shows that the FFFSR still views formally binding rules are necessary to effectively tackle fossil fuel subsidies. The role of informal regulation is perhaps in terms of sensitizing the membership and branding light on critical issues. In doing so it lays the ground for formal regulation but may not be sufficient on its own. One of the reasons for tackling non-trade issues in the multilateral trading system is its alleged benefit of enforcement. Unlike the environmental regime which is devoid of effective enforcement mechanisms, the trading regime carries the threat of trade sanctions. Informal regulation takes that aspect away. There is also a limit on what can be achieved through informal regulation in a trading system that is not designed with the environment and energy transition in mind. This requires reimagining the logic of international trade regulation not fixing the cracks through informal lawmaking. This is not to say that there is no place for informal regulation. To the contrary there is plenty, but it is important to recognize the limitation. One of the main challenges to tackling harmful energy subsidies is the lack of sufficient and reliable data on the subject. The WTO together with the IMF, World Bank and OECD recently published a joint report where they outlined the huge transparency deficit in global subsidy governance. Informal initiatives have a huge role in filling this deficit and they

95 See WTO, 'Fossil Fuel Subsidies Ministerial Statement' (2017) WT/MIN(17)/54.

96 See Asmelash, 'The Regulation of Environmentally Harmful Fossil Fuel Subsidies' (n 11).

have already played an important role. However, we should not miss the forest for the trees. The big picture is that international trade law was designed for the fossil fuel economy and needs urgent and radical reform to meet the needs of the green economy.

5 Conclusion

Professor Ruhl and Salzman's observation that 'climate change will impose radical changes on society and that the law will ... need to adapt in similarly radical ways' fully applies to energy transition and international trade law.⁹⁷ Much of the extant international trade law was negotiated and designed for the fossil fuel era with little consideration for its environmental implications. This article has examined the ways in which extant international trade law influences the energy transition through the regulation of pro-transition and anti-transition trade measures. It found that the international trade regime is ill-equipped to promote the energy transition. The status quo is more likely to impede than accelerate the transition. The energy transition calls into question the exception-based approach through which the multilateral trading system traditionally addressed climate change and other environmental concerns. Exceptions to international trade rules that allow the pursuance of environmental objectives through trade-restrictive measures are only one of the ways in which the international trade regime can and should contribute to the transition towards a sustainable energy future. As Doorey pointed out 'only a legal field that organizes law around the unifying concept of climate change will be responsive enough to deal with the complexity of a warming world'.⁹⁸ The complexity of the energy transition and the urgency of climate change make it essential that the energy transition features as a central theme guiding the design and application of international trade rules relevant to the energy transition. It is equally important that international trade rules recognize that the energy transition will have an adverse socioeconomic impact on countries and communities across the world. The international trading system has already failed to factor in a theory of justice and provide clear mechanisms to mitigate the adverse effects of trade liberalization beyond the much-criticised system of special and differential treatment. That failure

97 JB Ruhl and James E Salzman, 'Climate Change Meets the Law of the Horse' (2013) 62 *Duke L J* 975, 981.

98 See David J Doorey, 'A Law of Just Transitions? Putting Labor Law to Work on Climate Change' (2016) *Osgoode Legal Studies Research Paper Series No 164*, 11.

has perpetuated global inequality. The energy transition offers another opportunity for the international trade regime to redeem itself by establishing mechanisms that protect the poor and most vulnerable from suffering from climate change as well as from the adverse consequences of energy transition policies. This article has shown that none of the ongoing plurilateral and informal trade and environment initiatives have the capacity to bring about fundamental changes within the trading system. Aligning international trade law with the transition towards a just and sustainable energy future requires re-imagining its underlying assumptions and overcoming the fragmented and exception-based approach to tackling non-trade issues in the multilateral trade regime.