

RENEWABLE ENERGY: THE WTO'S POSITION ON LOCAL CONTENT REQUIREMENTS

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Synopsis: This article discusses the World Trade Organization's (WTO's) stance that Local Content Requirements (LCRs), even if used to further Multilateral Environmental Agreements (MEAs), facially violate international trade law's National Treatment Principle. This principle, under the General Agreement on Trade and Tariffs (GATT) and the Agreement on Trade-Related Investment Measures (TRIMs) is discussed in relation to renewable energy LCRs.

International Trade Law (ITL) and International Environmental Law (IELs) present two parallel tracks where harmony is needed. Even though the WTO supports environmental goals in spirit, free trade is at the core of ITL jurisprudence. The *Shrimp-Turtle* appellate report and *Canada-Renewable* report suggest that the WTO narrowly interprets environmental exceptions. On balance, the WTO tends to focus on trade impacts and seldom factors in environmental goals. While such analysis prevents greenwashing, it may result in self-censorship of member-states' proposed environmental schemes and setbacks for MEAs.

The Subsidies and Countervailing Measures (SCM) Agreement is beyond the scope of this article.

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I. INTRODUCTION

LCRs are government measures that require foreign investors, and occasionally domestic producers, to source a minimum threshold of goods, services, and/or labor locally.[1] LCRs are impactful tools which nurture domestic industry and advance protectionism, particularly in response to financial crises.[2]

LCRs further protectionism when governments create market preference for local goods via legislative or executive action.[3] They tend to hinder international trade and investment by reducing international competitiveness, economic diversification, and innovation.[4] Also, they tend to undermine efficiency gains from international economies of scale.[5] Despite this, and the WTO's comprehensive rules that restrict LCR usage, LCRs are widely adopted and the WTO has done little to regulate their use, as LCRs have been seldom challenged in the WTO.[6] Two LCR disputes directly discuss renewable energy: *Canada-Renewables* and *India-Solar*.[7]

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1. WORLD TRADE ADVISORS, DOMESTIC REQUIREMENTS AND SUPPORT MEASURES IN GREEN SECTORS: ECONOMIC AND ENVIRONMENTAL EFFECTIVENESS AND IMPLICATIONS FOR TRADE (June 13-14, 2013), http://unctad.org/meetings/en/Contribution/DITC_TED_13062013_Study_WTI.pdf?bcsi_scan_4af6d88c1bf98e8a=JUBAVES1gFdKh6OICKOZJ7jxwnkKAAAAIU6BFg==&bcsi_scan_filename=DITC_TED_13062013_Study_WTI.pdf.

2. Pierre Sauve, *Life Beyond Local Content: Exploring Alternative Measures of Industry Support in the Context of WTO Accession*, 01 J. OF INT'L. TRADE, 1 - 28 (2016); Gary Clyde Hufbauer et al., LOCAL CONTENT REQUIREMENTS: A GLOBAL PROBLEM 2 (Peterson Inst. for Int'l Econ., 1st ed. 2013).

3. *See generally The Hidden Persuaders*, THE ECONOMIST, (Oct. 11, 2013), https://www.economist.com/news/special-report/21587381-protectionism-can-take-many-forms-not-all-them-obvious-hidden-persuaders; United Nations Conference Trade and Development, *Local Content Requirement and Green Economy* 8 (2014), http://unctad.org/en/PublicationsLibrary/ditcted2013d7_en.pdf.

4. Susan Stone et al., *Emerging Policy Issues: Localisation Barriers to Trade* 2 (OECD Trade Policy Paper No. 180, 2015).

5. *Id.*

6. Joanna I. Lewis, *The Rise of Renewable Energy Protectionism: Emerging Trade Conflicts and Implications for Low Carbon Development*, 14 GLOBAL ENVTL. POLITICS 4 (2014); Hufbauer et al., LOCAL CONTENT REQUIREMENTS: A GLOBAL PROBLEM, at 3-4, 7 (Peterson Institute for International Economics: Policy Analyses in International Economics, 1st ed., 2013) (Around 100 LCRs were in force around the world as of 2013. LCRs decrease a country's reliance on foreign trade.).

7. Patrice Bougette & Christopher Charlier, *Renewable Energy, Subsidies, and the WTO: Where has the 'Green' Gone?* 51 ENERGY ECON. 1, 3 (2014); World Trade Organization Dispute Settlement 456: India-Certain

Following the 2008 global financial crisis, LCRs have been instrumental in boosting large scale production and trade in components used to generate renewable energy.[8] LCRs for renewable energy and its components increase green jobs and help countries achieve their environmental goals, but also distort international trade, by placing imports at a relative disadvantage.[9]

The increase in incentives for using or generating renewable energy using local contents has highlighted an ongoing inconsistency between the WTO and United Nations Framework Convention on Climate Change (UNFCCC) systems and jurisprudence.[10] On one hand, WTO prohibits protectionist measures that disfavor imports while allowing narrow environmental exceptions.[11] On the other, UNFCCC places emphasis on preventing, mitigating and adapting to climate change and allows member-nations wide berth in achieving these goals; the use of renewable energy and, to a lesser degree, a decreased reliance on coal are popular methods.[12]

This conflicting and over-lapping evolution of environmental jurisprudence with the WTO trend of prohibition of LCRs in clean energy projects, may lead to a chilling effect. States that wish to adopt environmental measures that impact trade may self-censor and self-regulate to avoid WTO sanctions, perhaps at the cost of environmental commitments.

Measures Relating to Solar Cells and Solar Modules (2018), https://www.wto.org/english/tratop_e/dispu_e/cases_e/1pagesum_e/ds456sum_e.pdf [hereinafter WTODS].

8. Stone et al., *supra* note 4, at 5.

9. Jan-Christoph Kuntze & Tom Moerenhout, *Local Content Requirements and the Renewable Energy Industry – A Good Match?*, INT'L CTR. FOR TRADE AND SUSTAINABLE DEV. 7 (2013); *id.* at 4.

10. There is inconsistency between ITL and International environmental law. *See* Robyn Eckersley, *The Big Chill: The WTO and Multilateral Environmental Agreements*, GLOB. ENVTL. POLITICS, May 2004; *see also iTTrade and Climate Change*, WTO-UNEP REPORT (2009), https://www.wto.org/english/res_e/booksp_e/trade_climate_change_e.pdf. The UNFCC advocates Renewable Portfolio standaards and permits renewables LCRs. However, the WTO has found this to run afoul of ITL. Given the ever urgent threat caused by global warming, more so now, based on the new IPCC report, the continuance of the trend of mismatch between environmental and trade law could be disasterous. Further, no disputes on LCRs, as related to environmental law, were raised before the WTO till the *Canada-Renewables consultation. In both India-Solar and Canada- Renewables the WTO adopted an approach against schemes promoting renewable energy.* We believe that if this trend continues, it is a danger to both environmental health and the rift between international environmental law and ITL will grow.

11. *What We Stand For*, WORLD TRADE ORG., https://www.wto.org/english/thewto_e/whatis_e/what_stand_for_e.htm (last visited September 24, 2018); General Agreement on Tariffs and Trade art. 3.2, *opened for signature* Oct. 30, 1947, 55 U.N.T.S. 187 [hereinafter GATT].

12. *Climate: Get the Big Picture*, UNITED NATIONS, https://bigpicture.unfccc.int/ (last visited September 24, 2018).

II. INTERNATIONAL TRADE LAW

A. WTO Dispute Resolution Procedure

The WTO's key function is to ensure free international trade, through trade agreements and dispute resolution.[13] Its dispute settlement measures apply to international trade agreements listed in Article 1.1 of the DSU, including: GATT and TRIMs.[14] WTO's dispute settlement measures involves four stages: (i) consultation, conciliation and good offices; (ii) adjudication and appeal, which is binding; (iii) implementation; and (iv) retaliation.[15]

1. Adjudication & Appeal

On the failure of consultation or "conciliation and good offices," parties may refer the dispute to WTO for adjudication, and the resultant decision would bind the Parties.[16] Once a matter is referred to adjudication, a Panel is formed and its terms of reference fixed.[17] The Panel prepares an interim report and then its final report; the parties are heard before each Report is prepared. The Panel Report is then referred to the Dispute Settlement Body (DSB). If a party disputes the findings of the Panel Report that is referred to the DSB, then the Panel prepares an Appellate Report and refers it to the DSB.[18] The DSB adopts the Panel Report or Appellate Report, as the case may be, either as-is, or with modifications and the losing party must implement said Report, as directed by the DSB.[19]

2. Legal Effect and Implementation

The Panel Report or Appellate Report, as adopted by the DSB, is enforceable against the losing party.[20] The losing party must implement the measures in the adopted report and use "reasonable measures" to comply with WTO obligations within a "reasonable period of time."[21] Any implementation disputes will be referred to the original Panel.[22] Failure to implement the report authorizes the prevailing nation to seek temporary measures, and if parties do not agree on compensation within 20 days, the prevailing Party can seek DSB approval to implement

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13. DSU, Dispute Settlement Rules: Understanding on Rules and Procedures Governing the Settlement of Disputes, art. 1, Marrakesh Agreement Establishing the World Trade Organization, Annex 2, 1869 U.N.T.S. 353 (1994) [hereinafter DSU].

14. *The process – Stages in a typical WTO dispute settlement case*, WORLD TRADE ORG., https://www.wto.org/english/tratop_e/dispu_e/disp_settlement_cbt_e/c6s1p1_e.htm (last visited Sept. 24, 2018).

15. *Id*.

16. DSU, *supra* note 13, at 369.

17. *Id*.

18. *Id*. at 353.

19. *Id*. at 363, 365.

20. *Id.* at 363, 365.

21. DSU, *supra* note 13, at 366. Reasonable amount of time fixed by: mutual consent of parties, by the *Compromis* (dispute resolution agreement) between the parties, the decision of the DSB or through arbitration, as the case may be.

22. *Id.*

countermeasures, mainly trade sanctions against the non-complying Party.[23] The losing party may cross-retaliate, usually by imposing counter-sanctions.[24]

Retaliation is the most severe measure and the last resort under the WTO dispute settlement. Recently, retaliation requests were raised by (i) US in *India-Solar*, (ii) Korea in response to US tariffs on washing machines, and (iii) Japan against US steel tariffs. [25]

B. General Principles of International Trade Law:

Article III of the GATT codifies the National Treatment Principle, whereby member states are prohibited from applying discriminatory measures on imports vis-à-vis like domestic products.[26] Article III:4 further sets out that imported products "shall be accorded treatment no less favorable" than that accorded to domestic like products.[27] The treatment is with respect to applicable laws, regulations and requirements facilitating and controlling domestic sale, purchase, transportation, distribution or consumption of the product.[28] Like products are determined on case by case basis but common denominators are consumer preferences, physical properties, and functions they perform.[29]

Article III: 5 of the GATT prohibit member states from enforcing any quantitative regulations (expressed in numeric value) for any mixture or in final product.[30] Its main objective is to discourage quota like policies, whereby members dictate mandatory ingredients of mixtures or condition of sale.[31]

The general rule in Article III can be compared to the US dormant commerce clause: both permit narrow prohibitions on free trade, but differ in application.[32]

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23. *Id*. at 367.

24. *Id*.

25. *See generally* WTODS, *supra* note 7; *see also* World Trade Organization Dispute Settlement 464: US-Washing Machines (2018), https://www.wto.org/english/tratop_e/dispu_e/cases_e/1pagesum_e/ds464sum_e.pdf; *see also* World Trade Organization Dispute Settlement 249: United States — Definitive Safeguard Measures on Imports of Certain Steel Products, https://www.wto.org/english/tratop_e/dispu_e/cases_e/1pagesum_e/ds249sum_e.pdf.

26. GATT, *supra* note 11, at art. III.

27. *Id.*

28. *Id*. at art. 3.1.

29. Robert E. Hudec, *"Like Product": The Differences in Meaning in GATT Articles I and III*, REGULATORY BARRIERS AND THE PRINCIPLE OF NON-DISCRIMINATION IN WORLD TRADE L. 101, 104 (2000).

30. GATT, *supra* note 11, at art. III:5.

31. *Part II, Article III*, NATIONAL TREATMENT ON INTERNAL TAXATION & REGULATION, 183 (2012), https://www.wto.org/english/res_e/booksp_e/gatt_ai_e/art3_e.pdf

32. Both the Dormant Commerce Clause and related market participant exception can be compared to National Treatment and the Government Procurement Exception under ITL. The Market Participant exception allows restrictions when the government's motivation is to act as a market participant and not to regulate. The Government Procurement Exception under ITL allows. Elizabeth Trujillo, *Mission Possible: Reciprocal Deference between Domestic Regulation Structures and the WTO*, 40 CORNELL INTL L. J. 207, 227-28 (2009). For the interpretation of the Dormant Commerce Clause, *see generally* David S Bogen, *The Market Participant Doctrine and the Clear Statement Rule*, 29 SEATTLE UNIV. L.R. 543 (2006).

C. Exceptions to LCR Prohibition Under GATT & TRIMS

Although LCRs are trade distorting they may be allowed under the following GATT exceptions:

1. GATT Article XX Exceptions

GATT Article XX lists general exceptions for which LCRs are permissible, such as for: protecting human, animal and plant life or health; prohibiting prison labor; regulating the trade of gold and silver; protecting archeological heritage; and safeguarding against local short supply.[33] LCRs are not prohibited if they fall under a narrow Article XX exception, and conform to its chapeau: i.e., the measures are not an arbitrary or unjust discrimination of international trade.[34]

Two general exceptions relate to environmental conservation. First, XX(b) permits import measures to "protect human, animal, plant life or health."[35] This exception is used to impose environmental health and safety measures. The second exception, XX(g) relates to "conservation of exhaustible natural resources;" this exception relates to restriction on domestic consumption and exports.[36]

Article XX(j) on general and local short supply is also relevant although it does not relate to environmental law; it was first raised as a defense in *India-Solar* to justify LCRs on imports.[37] A plain reading would suggest that XX(j) would restrict imports to prevent further scarcity.

The narrow exceptions and the qualification in the chapeau prevent greenwashing but also expose environmental measures with market impacts—such as India's National Solar Mission and Los Angeles' Solar Photovoltaic Incentive Program—to WTO disputes.[38]

2. GATT Article III:8 Exception

LCRs usually violate Article III but may be justified by establishing three factors under the Government Procurement exception to Article III:8.[39] *First*, the measures should be law, regulations or requirements governing the procurement

33. GATT, *supra* note 11, at art. XX.

34. *Id*.

35. *Id*. at art. XX(b).

36. *Id*. at art. XX(g).

37. *Id.* at art. 20(f); Panel Report, *India – Certain Measures Relating to Solar Cells and Solar Modules*, WT/DS456/R and Add. 1, adopted 14 October 2016, as modified by Appellate Body Report WT/DS456/AB/R, DSR 2016:IV, ¶ 7.202 [hereinafter *India – Solar Cells Panel Report*].

38. Lewis, *supra* note 6, at 13.

39. GATT, *supra* note 11, at art. III:8(a)-(b)

> 3.8 (a) The provisions of this Article shall not apply to laws, regulations or requirements governing the procurement by governmental agencies of products purchased for governmental purposes and not with a view to commercial resale or with a view to use in the production of goods for commercial sale. (b) The provisions of this Article shall not prevent the payment of subsidies exclusively to domestic producers, including payments to domestic producers derived from the proceeds of internal taxes or charges applied consistently with the provisions of this Article and subsidies effected through governmental purchases of domestic products.

of products purchases, duly enacted and require compulsory compliance.[40] *Second*, government agencies should actually procure the said materials.[41] *Third*, the procurement should be for governmental purposes, not direct or indirect commercial resale, i.e., the government should not be a market participant.[42] If the LCR is on a source or a derivative product, and not directly on the product the government procures, (e.g. an LCR on solar c-si cells and government procurement of electricity), then the government cannot claim the government procurement exception.[43]

D. Canada Renewables: A Brief Overview

Japan challenged Canada's measures relating to its LCR in the Feed-in Tariff program ("FiT Program") which were maintained by Ontario.[44] Japan claimed that FiT violated Article III:4 and III:5 of the GATT along with Article 2.1 of TRIMs.[45] The Panel agreed with Japan and held that LCR measure fall afoul GATT's National Treatment Requirements and are trade related investment measures which violates Article III:4 of the GATT.[46] The Panel also found that Canada couldn't rely on ArticleIII:8 protection as LCRs were implemented for commercial benefits.[47]

The Appellate body agreed with the Panel and held that LCRs violate Articles III:4 and TRIMs.[48] It further observed that LCRs implemented for profit making cannot be protected under Article III:8 protection as government procurement is not profit making but to fulfill public duties.[49] Thus, LCRs cannot be justified in a commercial market.

E. India-Solar: A Brief Overview

The US in *India-Solar* challenged India's LCR measure that it maintained under its National Solar Mission (JNNSM) on solar cells and solar modules.[50] The

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40. *Id.* at art. III:8(a).

41. *Id.*

42. *Id.*

43. *See generally* GATT, *supra* note 11.

44. Appellate Body Reports, *Canada – Certain Measures Affecting the Renewable Energy Generation Sector*, WT/DS412/AB/R,_adopted 24 May 2013, DSR 2013:I, ¶ 1.1 [hereinafter *Canada – Renewable Energy Appellate Report*].

45. *Canada – Certain Measures Affecting the Renewable Energy Generation Sector*, WORLD TRADE ORGANIZATION (Sept. 16, 2010), https://docs.wto.org/dol2fe/Pages/FE_Search/FE_S_S007.aspx?AllTranslationsCompleted=1&Id=101171&PageAnchorPosition=101171&SearchPagePageNumber=10&SearchPageCurrentIndex=0&SearchPageViewStatePageIndex=0&SearchPageStartRowIndex=0&returnedPage=FE_S_S006.aspx&IsNotification=False&LeftTabFieldText=&NumberOfHits=25&DreReference=&Query=(%40Symbol%3d+wt%2fds412%2f*)&Context=FomerScriptedSearch&btsType=&IsEnglishSelected=&IsFrenchSelected=&IsSpanishSelected=&IsAllLanguageSelected=&SearchPage=&SourcePage=&Language=&#.

46. *Canada – Renewable Energy Appellate Report*, *supra* note 44, ¶ 1.12.

47. *Id.*

48. *Id.* ¶ 6.1(b)(v).

49. *Canada – Renewable Energy Appellate Report*, *supra* note 44, ¶ 5.74.

50. *See generally India – Solar Cells Panel Report*, *supra* note 37.

LCR required use of local raw materials for entities selling electricity to the government.[51] US challenged said LCR to be in violation of Article III:4, and Article 2.1 of the TRIMs Agreement.[52] India tried to justify the measures under Article III:8(a) and Article XX(j) and (d) of GATT.[53]

The DSB declared India's measure to be an LCR scheme that violates GATT and TRIMs.[54] The Panel found that the measures afforded less than favorable treatment on three counts: first, the ability to use certain types of foreign cells and modules did not negate the less favorable treatment to the other types of foreign cells and modules whose use was prohibited by the local procurement requirements of the c-Si solar module.[55] Second, less favorable treatment is not negated by uniform benefits.[56] Third, the Panel observed that the argument that less favorable treatment can be balanced by the continued existence of other competitive opportunities is baseless and inconsistent with existing jurisprudence.[57]

Thus, on this basis, India's measures were found to be inconsistent with Article III:4 of the GATT, Article 2.1 of the TRIMs Agreement and not covered by derogation in Article III:8(a).[58] They were also not found to be justifiable under Article XX(j) and (d) of the GATT.[59] The Appellate body upheld the Panel's ultimate finding and requested India to bring its measure in compliance with GATT and TRIMs.[60]

India subsequently submitted its compliance report to the DSB, stating that said measures were ceased.[61] However, the United States claimed that India failed to comply and requested the WTO to stop concessions provided to India.[62] India has challenged this claim, and requested establishment of compliance Panel under Article 21.5 of the Rule and Procedures governing settlement of disputes.[63] The United States has challenged establishment of such a panel on the grounds that India has failed to establish prima-facie compliance.[64] The WTO is yet to determine whether a compliance panel will be formed.

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51. *Id.* ¶ 7.2.

52. *Id.* ¶ 1.1.

53. *Id.* ¶ 3.2.

54. *Id.* ¶ 8.2.

55. *India – Solar Cells Panel Report*, *supra* note 37, ¶ 7.94.

56. *Id.* ¶ 7.96.

57. *Id.* ¶ 7.97.

58. *Id.* ¶¶ 7.97-7.99.

59. *Id.* ¶ 7.389.

60. Appellate Body Report, *India – Certain Measures Relating to Solar Cells and Solar Modules*, WT/DS456/AB/R and Add.1, adopted 14 October 2016, DSR 2016:IV, ¶ 6.8 [hereinafter *India – Solar Cells Appellate Report*].

61. Status Report, *India—Certain Measures Relating to Solar Cells and Solar Modules*, WTO Doc. WT/DS456/17 (Dec. 18, 2017).

62. Recourse to Article 22.2 of the DSU by the United States, *India—Certain Measures Relating to Solar Cells and Solar Modules*, WTO Doc. WT/DS456/18 (Dec. 20, 2017).

63. Request for the Establishment of a Panel, *India—Certain Measures Relating to Solar Cells and Solar Modules*, WTO Doc. WT/DS456/20 (Jan. 29, 2018).

64. WTO members consider India's request for compliance panel in dispute over solar cells, *India—Certain Measures Relating to Solar Cells and Solar Modules*, WTO (Feb. 18, 2018), https://www.wto.org/english/news_e/news18_e/dsb_09feb18_e.htm.

III. THEMATIC ANALYSIS

A. GATT Article III:4

GATT Article III:4 requires member states to accord National Treatment to "like" products so that imports that have cleared customs are on equal footing with domestic goods.[65] A law, rule, or regulation violates National Treatment if it affects, directly or indirectly, the trade of the "like" products of national origin in the domestic market.[66] A measure is inconsistent with Article III:4 if: (i) has legal force and modifies internal market competition; (ii) applies to "like" products of national origin; and (iii) results in less favorable treatment of imports.[67]

1. Likeness and WTO Jurisprudence:

"Likeness" is determined with reference to physical properties, raw materials, end-users, consumer perceptions and tariff classifications.[68] All competing goods are considered like products, and the issue becomes whether like goods can be differentiated based on their origin.[69] This question does not arise when identical goods are involved, as they are not "like" (close substitutes) but identical.[70]

2. Likeness and Electricity

Electricity is intangible. Once it is part of the grid, it is difficult to trace either its fuel source or point of origin. Barring industrial uses of electricity, renewable and non-renewable electricity is consumed almost identically, irrespective of

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65. *Id*.

66. *See, e.g.*, Panel Report, *Italian Discrimination Against Imported Agricultural Machinery*, L/833-7S/60 (Jul. 15, 1958).

67. Panel Reports, *Canada – Certain Measures Affecting the Renewable Energy Generation Sector*, WT/DS412/R and Add.1, adopted 24 May 2013, as modified by Appellate Body Reports WT/DS412/AB/R, DSR 2013:I, ¶ VII.73 [hereinafter *Canada – Renewable Energy Panel Report*] (arguing that measures were "requirements" as they were conditions which the FiT generators voluntarily complied for obtaining various advantages under the program.). However, the Appellate Body did not go into the merits in the interest of judicial economy. *See, e.g., Canada – Renewable Energy Appellate Report, supra* note 44, ¶¶ 5.103-5.104. The United States adopted the same line of reasoning in India—Solar. It contended India's measures to be "requirements" as they made solar power developers enter into legally binding contracts (Power Purchase Agreements) which had LCRs. *See also India – Solar Cells Panel Report, supra* note 37, ¶¶ 7.85-7.88 (affirming the reasoning and observing that as the measures create an incentive for use of domestic goods over imported goods, they can be considered to affect the "internal sale, purchase, or use" of such goods).

68. *Canada – Renewable Energy Panel Report, supra* note 67, ¶ VII.73; Panel Report, *Japan – Customs Duties, Taxes and Labelling Practices on Imported Wines and Alcoholic Beverages*, L/6216-34S/83, adopted November 10, 1987, ¶ 5.7 [hereinafter *Japan – Alcoholic Beverages Panel Report*] (finding that Japanese Shocu and imported Vodka are white spirits, "made from similar raw materials," and have virtually identical end uses, and are thus "like" products).

69. *Japan – Alcoholic Beverages Panel* Report, *supra* note 68, ¶ 3.4.

70. Panel Report, *China – Measures Affecting Trading Rights and Distribution Services for Certain Publications and Audiovisual Entertainment Products*, WT/DS363/R and Corr.1, adopted 19 January 2010, as modified by Appellate Body Report WT/DS363/AB/R, DSR 2010:II, ¶¶ VII.1491, .1506, .1558 [hereinafter *China – Publications and Audiovisual Products Panel Report*] (identifying as "like" products: (a) domestic sound recordings having Chinese copyright and other sound recordings; (b) imported and domestic reading materials; and, (c) newspapers and periodicals.).

source.[71] Therefore, this would suggest that electricity from both renewable and non-renewable resources are "like" products that should be given equal footing. In such a case, a domestic policy that promotes renewable energy over non-renewable energy is likely to violate the national treatment principle, as it disfavors imported non-renewable energy.

In *Canada-Renewable*s, the Panel observed and the Appellate Body upheld that though the electricity generated from different sources is identical, it is important to note that as it comes from different sources, it has different generating markets — different technology is used to generate electricity, thus, electricity from different sources should not be considered as like products.[72] This analysis is further supported by discussion under *India-Solar*, where the Panel observed that if the country of origin of generating equipment is the only dissimilar characteristic, then the two products in question are "like" products.[73] The corollary would be that any other genuine distinction, such as technology, would mean that goods are "unlike," but this stance was not taken in *India Solar*.[74]

Since renewable energy and non-renewable energy are distinct and operate in separate markets, the question of likeness and market distortion does not arise.

This analysis can be extended to likeness of electricity generation equipment – since electricity from all sources provides the same utility in the same consumer base, generation equipment, renewable and non-renewable, could be considered "like" products.

Canada-Renewables supports the argument that different technology is unlike.[75] However, in *India Solar*, the Panel and Appellate Body took a divergent approach.[76] The National Solar Mission required the use of only domestic c-Si cells in certain phases of the Scheme but allowed the use of imported solar cells using other forms of technology.[77] The Panel held that solar panels, in general were "like" goods and that the National Solar Mission afforded less than favorable treatment.[78] First, the ability to use other types of foreign cells and modules did not negate the less favorable treatment to imported c-Si modules; the choice was between local c-Si modules under the LCR or other types of solar cells, from any country.[79] The existence of other competitive opportunities, i.e., the ability to purchase foreign modules other than c-Si modules, is no justification.[80] Allowing such a scheme would permit the unjustified ban of certain foreign products.[81]

Even if the DSB later finds that renewable energy and non-renewable energy operate in the same market and thus are "like" goods, this finding can be refuted on three grounds.

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71. *Japan – Alcoholic Beverages Panel* Report, *supra* note 68, ¶ 3.4.
72. *Canada – Renewable Energy Panel Report*, *supra* note 67, ¶ VII.95.
73. *India – Solar Cells Panel Report*, *supra* note 37, ¶ 7.83.
74. *Id.* ¶¶ 7.81-.83.
75. *Canada – Renewable Energy Panel Report*, *supra* note 67, ¶ VII.123.
76. *India – Solar Cells Panel Report*, *supra* note 37, ¶¶ 7.81-7.84.
77. *Id.* ¶¶ 7.8-7.9.
78. *Id.* ¶ 7.95.
79. *Id.* ¶ 7.94.
80. *India – Solar Cells Panel Report*, *supra* note 37, ¶ 7.97.
81. *Id.* ¶ 7.96.

First, the carbon footprint of renewable and non-renewable fuels, and of renewable and non-renewable electricity generated therefrom, is unlike.[82] Second, there is some dissimilarity in purchase use and consumption: thermal energy usually forms the baseload, particularly in utility scale and industrial applications, whereas a renewable energy grid that relies on one fuel source alone (e.g. a solar-only grid or a wind-only grid) would require heavy battery storage.[83] Third, non-renewable energy is largely centralized or at least part of a larger grid, but dedicated generation plants may exist for large industries or campuses.[84] In contrast, most renewable energy can be generated on or off the grid, and centrally or in a decentralized manner. Thus, the WTO ought to include environmental impact and carbon footprint based on generation, fuel sources, and spent fuel in their analysis of "likeness" of renewable and non-renewable sources. If renewable and non-renewable energy requirements are "like," then electricity importers with an energy mix law that requires a specific percentage of electricity to be sourced from renewable energy resources. These energy mix laws are likely to be LCRs if they are mandatory and have the force of law because they displace the use of one import (thermal power) with another (renewable power) and thus are inconsistent with GATT. While the Feed-in-Tariff was challenged in *Canada Renewables*, there is no direct WTO analysis on this point.[85]

B. GATT Article III:5

Article III:5 of the GATT when read with GATT Ad Article to Annexure I treats a requirement to source domestically a portion of product which will be used in mixture with other components, in processing or by itself, as a "quantitative regulation", i.e., a numeric cap on domestic use or of a particular imported product, based on country of origin or alternatively an LCR. [86] WTO prohibits members from maintaining quantitative regulations as they hamper the competitive process in the market.[87]

Article III:5 is directly relevant to LCRs as it deals with quantitative regulation.[88] An LCR requires that all (100%) or another specified percent of raw components be sourced domestically and thus can be considered a quantitative regulation.[89]

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82. INTERNATIONAL CENTRE FOR TRADE AND SUSTAINABLE DEV., *Nairobi Climate Meeting Focuses on Future Climate Action, Adaptation Needs*, 10 BRIDGES 39 (Nov. 22, 2006), https://www.ictsd.org/bridges-news/bridges/news/nairobi-climate-meeting-focuses-on-future-climate-action-adaptation-needs.

83. *Id.*

84. *Id*.

85. *Canada – Renewable Energy Panel Report*, *supra* note 67, ¶ I.1.

86. Holger P. Hestermeyer & Laura Nielsen, *The Legality of Local Content Requirement under WTO Law*, 48 Journal of World Trade, 573 (2014). Ad Article to Annexure 1 of the GATT provides guidance note for interpreting text of GATT articles.

87. GATT, *supra* note 11, at art. VI:1.

88. *Id*.

89. Panel Reports, *China – Measures Affecting Imports of Automobile Parts*, WT/DS339/R, Add.1 and Add.2 / WT/DS340/R, Add.1 and Add.2 / WT/DS342/R, Add.1 and Add.2, adopted 12 January 2009, upheld (WT/DS339/R) and as modified (WT/DS340/R / WT/DS342/R) by Appellate Body Reports WT/DS339/AB/R / WT/DS340/AB/R / WT/DS342/AB/R, DSR 2009:I, ¶ 4.475 [hereinafter *China – Auto Parts Panel Report*].

Article III:5 was discussed extensively in *China-Autoparts*, where the European Commission and others challenged China's charges on imported automobile parts used in cars manufactured in China for domestic sale.[90] If more than 60% of components were imported, China levied a charge on the completed vehicle.[91] The higher the imported content, the higher this levy. Thus, local manufactures had an advantage if they used local automobile parts.[92]

The Panel observed that China's measures were inconsistent with, *inter alia*, Article III:5, because they were burdensome and raised the price of finished goods.[93] Further, by imposing internal charges and reporting requirements based on specified quantities imported, the policy was a quantitative regulation that attracts the prohibition in Article III:5."[94]

The Appellate Body affirmed and found that Article III:5 is violated when a measure is (1) an internal regulation; (2) expressed in quantitative manner; relating to the mixture, processing or use of products in specified amounts; and (3) requires, directly or indirectly, the use of those products from domestic sources.[95]

The challenged measures were "internal regulations" as they were legally binding and regulated the number of imported automobile parts purchased, sold or used in China.[96] These measures, therefore "related" to the use of auto parts in specified amounts and required domestic sourcing for at least the specified quota or would impose charges on manufacturers, and ultimately increasing the duties on imports.[97]

Philippines — Motor Vehicles, is a similar consultation where the US challenged Philippines' preferential tariff to motor vehicle manufacturers who used domestically produced components under GATT Article III:5.[98] It is still under consultation and the Panel is yet to be composed.

Similarly, Argentina filed a complaint against Spain for its discriminatory policy against foreign biodiesel as certain benefits were extended only for biodiesel produced entirely in plants located on the territory of Spain or any other EU Member state.[99]

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90. *Id*. ¶¶ 3.1(e), 3.4(d), 3.7(c).

91. *Id*. ¶ 4.475.

92. Appellate Body Reports, *China – Measures Affecting Imports of Automobile Parts*, WT/DS339/AB/R / WT/DS340/AB/R / WT/DS342/AB/R, adopted 12 January 2009, DSR 2009:I, ¶ 121 [hereinafter *China – Auto Parts Appellate Report*].

93. *China – Auto Parts Panel Report*, *supra* note 89, ¶ 4.69.

94. *Id*.

95. *China – Auto Parts Appellate Report*, *supra* note 92, ¶ 4.112.

96. *China – Auto Parts Panel Report*, *supra* note 89, ¶ 4.113.

97. *Id*. ¶ 4.114.

98. Communication from the Philippines, *Philippines — Measures Affecting Trade and Investment in the Motor Vehicle Sector*, WTO Doc. WT/DS195/4 (Nov. 7, 2000).

99. Request for the Establishment of a Panel by Argentina, *European Union and A Member State — Certain Measure Concerning the Importation of Biodiesels*, WTO Doc. WT/DS443/5 (Dec. 7, 2012).

C. GATT Article III:5 v/s GATT III:4

LCR complaints may invoke both Article III:5, which directly reference LCRs, and Article III:4 which discusses the effects of an LCR.[100] It is for the adjudicating body to decide which provision to consider first. For the sake of judicial economy, the Panel seldom analyses both paragraphs and tends to begin and end with Article III:4.[101] However, Article III:5, is on point and fulfils all factors an LCR would trigger. It is yet to be seen how panels would interpret renewable energy subsidies under Part III:5. Despite limited GATT jurisprudence, Panels ought to prefer Paragraph 5 over 4 as it is more comprehensive and related more directly to LCRs.

D. Article III: 8

The government procurement exception to the prohibition on LCRs is narrow and can be established if (i) a law, regulation or requirement mandates government procurement, (ii) government agencies procure the materials, and (iii) for governmental purposes, not direct or indirect commercial resale.[102] Only *Canada—Renewables* and *India—Solar* have analyzed the scope of Article III:8 with reference to LCRs before the DSB.[103]

1. Law, Regulation or Requirement Governing Procurement

Government procurement may be exempt if established by law, regulation or requirement that controls, regulates, or determines the procurement of the target product.[104] Such measures should be binding, and require procurement. They should not be mere guidelines, or contain directory language.[105]

2. Procurement by Governmental Agency

The product on which an LCR is imposed should be procured by governmental agency only.[106] This led to questions about the interpretation of both "procurement" and "governmental agency."[107] The jurisprudence relating to "government" is straightforward: it includes the government, governmental agencies and parastatals.[108]

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100. *China – Auto Parts Panel Report*, *supra* note 89, ¶¶ 4.20-4.22, 4.26-4.27.

101. Appellate Body Report, *United States – Measures Affecting the Production and Sale of Clove Cigarettes*, WT/DS406/AB/R, adopted 24 April 2012, DSR 2012:XI, ¶ 54.

102. GATT, *supra* note 11, at art. III ¶ 213.

103. Steve Charnovitz & Carolyn Fischer, *Canada-Renewable Energy: Implications for WTO Law on Green and Not-So-Green Subsidies*, 15 WORLD TRADE REVIEW, 197 (2015). Availability of Article III's procurement derogation was the central feature of the TRIMS and GATT analysis. This question was nearly a *tabula rasa* for the WTO dispute system, as no previous WTO jurisprudence on GATT Article III:8(a) had occurred.

104. GATT, *supra* note 11, at art. III ¶ 8(a).

105. *India – Solar Cells Panel Report*, *supra* note 37, ¶ 7.142.

106. GATT, *supra* note 11, at art. III ¶ 215.

107. *Id*.

108. *Id*.

Article III:8 exempts "procurement by governmental agencies of products purchased for governmental purposes" from being prohibited LCRs.[109] In *Canada-Renewables*, Japan argued that procuring and purchasing are two distinct actions.[110] In contrast, EU and Canada suggested that both "procurement" and "purchased" mean the same.[111]

Canada-Renewables and *India Solar* assigned "purchase" and "procurement" the same meaning for Article III:8.[112] Thus, there is procurement under Article III:8 when a government obtains goods in exchange for payment in any form.

3. LCRs to relate to products procured:

The product procured and the product hit by the LCR must be the same. Otherwise, the Article III:8 exception does not apply, and the LCR violates international trade law. This analysis followed in *Canada Renewables*, where LCRs were levied on several grid components.[113] It was reiterated in *India-Solar* where the government purchased electricity through Power Purchase Agreements and imposed an LCR over solar cells and modules.[114]

The Panel Report on *India Solar* stated that the product procured (electricity) is not in a "competitive relationship" with the product discriminated against (solar cells and modules), and thus, India's National Solar Scheme was not covered by Article III:8(a).[115] The Appellate Report did not displace the "competitive relationship test."[116]

India challenged this analysis because solar modules are inherent to and have no purpose other than to generate solar power, and the government's purchase of electricity was essentially a purchase of the solar cells and modules themselves.[117] India argued that any other interpretation would put "*an unnecessary intrusion into the nature and exercise of the government actions relating to procurement of solar power, and this could not have been the intent of the drafts.*"[118]

The US, EU, and Canada countered as this would permit India to discriminate against imports by proxy.[119] This would result in a dangerous global trend where

109. *Id*. at art. III ¶ 8(a).

110. *Canada – Renewable Energy Panel Report*, *supra* note 67, ¶ 7.75; *see also* Panel Report, *United States – Procurement of a Sonar Mapping System*, GPR.DSI/R, adopted April 23, 1992, ¶ 5.1 (where a contract between two private companies for acquiring a sonar mapping system did constitute government procurement under the Tokyo Rounds Agreement on Government Procurement). *Contra*, *Canada – Renewable Energy Panel Report*, *supra* note 67 (where Article III:8 of GATT and the Tokyo agreement were distinguished because the Panel observed that the wording and structure of Article I:1(a) of the Tokyo Round Agreement on Government Procurements was not similar to Article III:8(a)).

111. *Canada – Renewable Energy Panel Report*, *supra* note 67, ¶ 7.130.

112. *Id*. at ¶ 7.131; *India – Solar Cells Panel Report*, *supra* note 37, ¶ 7.107.

113. *India – Solar Cells Panel Report*, *supra* note 37, ¶ 7.114

114. *Id*.

115. *Id*. ¶ 7.102.

116. *Canada – Renewable Energy Appellate Report*, *supra* note 44, ¶ 5.13.

117. *India – Solar Cells Panel Report*, *supra* note 37, ¶ 7.109.

118. *Id*. ¶ 7.130.

119. *Id*. ¶ 7.131.

states would breach their National Treatment obligations and discriminate across the supply chain and manufacturing process by showing that a government procurement is connected, even remotely, to a favored domestic product.[120] This was upheld by the Panel and Appellate Body in India Solar.[121]

4. Governmental v/s Commercial Purpose:

Both *Canada-Renewables* and *India*-Solar deliberate 'governmental purpose' which permits LCRs and 'commercial purpose' which violates international trade law, at length.[122] In *Canada-Renewables,* three interpretations emerged.[123] Canada's wide interpretation was that anything purchased by the government is for a "governmental purpose", so long as it does not involve commercial resale.[124] In contrast, Japan's narrow interpretation restricts "governmental purpose" to purchase, use and consumption by or for the 'benefit' of the government.[125] The EU's intermediate interpretation of "governmental purpose" means anything for provision of public services.[126] The Panel held that the requirement of governmental purpose should be further narrowed down by commercial resale.[127]

The Appellate Body observed that a "government purpose" exists if: (i) the government consumes or supplies the product to discharge its public function and (ii) a "rational relationship" exists between the product and the governmental function discharged.[128] Canada asserted that commercial resale should mean selling for profit but Japan asserted that any introduction of the product to commerce, trade or market regardless of profit would amount to commercial resale.[129] Panel concluded that the service of distributing electricity to end-users is inseparable from the sale of electricity as a commodity; as the sale of electricity is competitive and generates profit, the transaction is commercial.[130] Panel then disregarded Canada's interpretation of commercial resale and held that even loss making sales can be considered as ordinary commercial activity, and arm's length resale of electricity is commercial.[131]

India asserted ecologically sustainable growth, energy security and removing energy poverty are public functions, and thus governmental purposes.[132] The US

120. *Id*.

121. *Id*.

122. *India – Solar Cells Panel Report, supra* note 37, ¶ 7.163; *Canada – Renewable Energy Appellate Report, supra* note 44, ¶ 2.68.

123. *Canada – Renewable Energy Appellate Report, supra* note 44, ¶ 5.65.

124. *Id*. ¶ 2.3; *Canada – Renewable Energy Panel Report, supra* note 67, ¶ 6.63.

125. *Canada – Renewable Energy Panel Report, supra* note 67, ¶ 6.63.

126. *Id*. ¶ 7.84.

127. *Id*. ¶ 7.139.

128. *Canada – Renewable Energy Appellate Report, supra* note 44, ¶¶ 5.64, 5.68.

129. *Canada – Renewable Energy Panel Report, supra* note 67, ¶ 7.139.

130. *Id*. ¶ 7.146.

131. *Id*. ¶ 7.150.

132. *India – Solar Cells Panel Report, supra* note 37, ¶ 7.153.

argued that such goals were not a legitimate Governmental Purpose as the government did not control downstream usage of solar power electricity.[133] Further, Japan argued that India used energy affordability as a front to eliminate reliance on imported cells and modules.[134] India argued that it acted as a welfare state in regulating electricity prices to ensure affordable energy through its LCR scheme, not as a proprietor.[135] The Panel, in its "limited analysis and review, [did] not consider it necessary to decide on" the issue of commercial resale as there was no competitive relationship between the products.[136] Therefore, as the Panel and the Appellate Body did not determine the accuracy of the fact as to whether ensuring affordable access to product or the other governmental purposes and functions as identified can constitute a 'governmental purpose' or public function within the meaning of paragraph 8 and with respect to Commercial Resale. [137]

Although the analysis was not extended due to judicial economy, the Panel's decision leaves a gap in what amounts to legitimate government purpose and an opening to argue that purchase for regulated resale, that falls under welfare state functions, fall within the scope of paragraph 8 (assuming products were also found in competitive relationship).[138] It now remains open for future panels to close this gap.

IV. LEGAL FRAMEWORK UNDER TRIMS

Government subsidies contingent upon compliance with LCR measures condition investments on local purchase or manufacture.[139] This results in differentiated treatment of domestic and imported raw materials (such as renewable energy generation equipment products), which both TRIMs and the GATT prohibit.[140]

Article 2.1 of TRIMs prohibits members from applying any TRIM *"inconsistent with the provision of Article III or Article XI of GATT 1994*."[141] Article 2.2 of TRIMs references an illustrative list of violations in an Annex.[142] The Panel in *Canada-Renewables* had to consider whether derogation under III:8 would offer immunity against TRIMs sanctions, and vice versa.[143] Further, the panel had to determine whether a GATT violation of national treatment was a pre-requisite to

133. *Id*. ¶ 7.154.

134. *Id.* ¶ 7.155.

135. *Id.* ¶ 7.181.

136. *Id.* ¶ 7.186.

137. *India – Solar Cells Panel Report*, *supra* note 37, ¶ 7.163.

138. *Id.* ¶ 8.2.

139. Committee on Trade – Related Investment Measure, *Certain Local Content Requirement in Some of the Renewable Energy Sector Programs*, WTO Doc. No. G/TRIMS/W/117 (Apr. 17, 2013).

140. Agreement on Trade-Related Investment Measures, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, THE LEGAL TEXTS: THE RESULTS OF THE URUGUAY ROUND OF MULTILATERAL TRADE NEGOTIATIONS 143 (1999), 1868 U.N.T.S. 186 [*hereinafter* TRIMS Agreement]. Article 2.1 incorporates national treatment principle for foreign investments.

141. *Id.*

142. *Id.*

143. *Canada – Renewable Energy Appellate Report*, *supra* note 44, ¶ 5.56.

establish a TRIMs violation of national treatment or whether the reverse was true.[144]

The Panel observed that since TRIMs prohibition under Article 2.1 applied to violations of GATT Article III, and Article III provided exemptions in Article III:8, measures that received Article III:8 derogation were immune from TRIMs sanctions.[145]

The EU appealed, stating that the illustrative list conclusively establishes that enlisted measures violate Article III:4, and thus Article 2.2.[146] The question of appeal became whether GATT Article III:8 derogation was applicable to exempt measures within the scope of Article 2.2 and "illustrative list annexed thereto."[147]

The Appellate Body concluded that since both the TRIMs and III: 8(a) refer to *discriminatory treatment of products*, they should be harmoniously construed, and the derogation must exist within both rules.[148] Thus, Article 2.2's illustrative list is suggestive and must be construed harmoniously with Article III:8.[149]

Similarly, the US challenged India's LCRs measures for solar equipment as inconsistent with Article 2.1 of the TRIMS and Article III: 4 of the GATT, 1994.[150] The Panel agreed with US' interpretation that once it has been established that a measure falls under the illustrative list, it automatically becomes inconsistent with Article III:4.[151] The Panel further divided the analysis into three different but inter-connected heads:

> (a) whether the LCRs are 'TRIMs' within the meaning of Article 1 of the TRIMs Agreement; (b) whether LCRs 'require the purchase or use of products by an enterprise of products of domestic origin' within the meaning of paragraph 1(a) of the Illustrative list; and (c) whether LCRs are TRIMs that 'are mandatory or enforceable under domestic law or administrative rulings, or compliance with which is necessary to obtain an advantage' within the meaning of the chapeau of the Illustrative list.[152]

The *India Solar* Panel held in the affirmative.[153] The LCR measures, which promoted infant industries with explicit reference to investment implications, were held to be TRIMs because they encourage production of solar cells and modules domestically.[154]

Both disputes provide a wide array of interpretations for TRIMS Agreement. As observed, TRIMs lack a substantive discipline independent of the GATT; the

144. *Id*. ¶ 5.35.
145. *India – Solar Cells Panel Report*, *supra* note 37, ¶ 7.53.
146. *Canada – Renewable Energy Appellate Report*, *supra* note 44, ¶ 5.28.
147. *Id*. ¶ 5.1.5 & Heading 5.2.3.
148. *Id*. ¶ 5.63.
149. *Id*. ¶ 5.33.
150. *India – Solar Cells Panel Report*, *supra* note 37, ¶ 7.39.
151. *Id*. ¶ 7.53.
152. *Id*. ¶ 7.57.
153. *Id*. ¶ 7.73.
154. *Id*. ¶¶ 7.62-7.64.

evidence of the violation of GATT Article III or XI is necessary to show a violation of TRIMS Article 2.[155] GATT and TRIMS have related but distinct objectives: to ensure equal treatment for imported and domestic products, and to maintain a competitive relationship between products, respectively.[156] LCRs are distinct from other forms of non-tariff barriers in the sense that they focus on projects/firms/industries and not on tariff lines. This distinction calls for a separate policy space for LCRs under TRIMS agreement, independent of GATT analysis.

V. TRADE AND ENVIRONMENTAL LAW

Since the first "trade and environment" debate in the 1920s during the *travaux preparatoires* for the Convention for the Abolition of Import and Export Prohibitions and Restrictions, the interaction between trade and the environment has progressed.[157] The preamble of the Agreement Establishing WTO acknowledged the importance of sustainable development to the multilateral trade system.[158] GATT Article XX(b) allows for divergence from general market access norms for protection of "human, animal and plant life or health."[159] Additionally, the Marrakesh Agreement of 1994, international trade law outwardly acknowledged the need for harmony of trade law with environmental law.[160]

Still, distinct trade and environmental regulatory regimes have underlying issues of compatibility based on goals, structure, and implementation.[161] For instance, the UNFCCC and allied accords aim at mitigating and managing climate

155. Panel Report, *Indonesia – Certain Measures Affecting the Automobile Industry*, WT/DS54/R, WT/DS55/R, WT/DS59/R, WT/DS64/R, Corr.1 and Corr.2, adopted 23 July 1998, and Corr.3 and Corr.4, DSR 1998:VI, ¶ 6.102-6.103.

156. Matthew D'Orsi, *Heated Skirmishes in the Solar Sector: Do Solar PV Feed-In Tariffs Constitute Trade-Related Investment Measures and Subsidies Prohibited under the WTO Regime?*, 29 AM. U. INT'L L. REV. 673, 693 (2014).

157. *See generally*, INTERNATIONAL CONFERENCE FOR THE ABOLITION OF IMPORT AND EXPORT PROHIBITIONS AND RESTRICTIONS, 2ND, GENEVA (Jan. 30, 1928), http://www.loc.gov/law/help/us-treaties/bevans/m-ust000002-0651.pdf.

158. Preamble, Marrakesh Agreement Establishing the World Trade Organization, Apr. 15, 1994, 1867 U.N.T.S.154 [hereinafter Marrakesh Agreement].

159. GATT, *supra* note 11, at art. XX(b).

160. Marrakesh Agreement, *supra* note 158, at art. 1.1 (The preamble to the Marrakesh Agreement aims at "allowing for the optimal use of the world's resources in accordance with the objective of sustainable development, seeking both to protect and preserve the environment.*"*); *see also* Ministerial Declaration, *Doha WTO Ministerial 2001*, WTO Doc. No. WT/MIN(01)/DEC/1, https://www.wto.org/english/thewto_e/minist_e/min01_e/mindecl_e.htm.

> Paragraph 06: we strongly reaffirm our commitment to the objective of sustainable development, as stated in the Preamble to the Marrakesh Agreement. We are convinced that the aims of upholding and safeguarding an open and non-discriminatory multilateral trading system, and acting for the protection of the environment and the promotion of sustainable development can and must be mutually supportive.

For a detailed analysis of the WTO and sustainable development, *see generally* Gary P. Sampson, *The WTO and Sustainable Development* (United Nations University Press 2005).

161. Daniel Bodansky & Jessica C. Lawrence, *Trade and Environment*, THE OXFORD HANDBOOK OF INT'L TRADE L. 508 (Daniel Bethlehem ed. et al., 2009); Eric Neumayer, *The WTO and the Environment: Its Past Record is Better than Critics Believe, but the Future Outlook is Bleak*, GLOBAL ENVT'L POLITICS (2004), http://www.lse.ac.uk/geographyAndEnvironment/whosWho/profiles/neumayer/pdf/WTOandEnvironment.pdf.

change and its impacts through a variety of measures, including Nationally Determined Contributions (NDCs), whereas the WTO and ITL has the primary focus of removing all barriers to trade and ensuring free trade through the WTO dispute mechanism.[162] This tension is visible when trade barriers are adopted for environmental goals.[163] WTO found that non- treaty trade barriers are inconsistent with the GATT/WTO regime.[164] This does not automatically make measures taken under multilateral environmental treaties inconsistent with WTO. However, the WTO has rarely upheld trade sanctions that further environmental goals.[165] The WTO has made little progress in lifting trade barriers on fisheries, agriculture and coal, that are injurious to the environment.[166]

The *US-Shrimp-Turtle* case deals with a conflict between the US Endangered Species Act, and international trade of shrimp caught by trawlers.[167] In that case, the US banned the import of shrimp caught by trawlers, unless Turtle Excluder Devices were used, as Turtles were protected under the Act.[168] The measure, which banned shrimp imported from the Caribbean, was held to be a violation by the Court of International Trade.[169]

Subsequently, the law prohibited all imports that did not have Turtle Excluder Devices.[170] The Appellate Body recognized the right to protect the environment and observed that turtle protection was a legitimate measure that capable of protection under GATT Article XX.[171] It was recognized that member states had the right to protect the environment and did not need WTO permission to do so.[172] The chapeau of Article XX says that any environmental measure is void if it is a guise to distort a market. The Appellate Body upheld the scheme to ban shrimp caught without turtle excluder devices, but found the scheme discriminatory in practice, as the US provided technical and financial assistance only to the members

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162. Neumayer, *supra* note 161.

163. *Id*.

164. Shinya Murase, *Unilateral Measures and the WTO Dispute Settlement*, ASIAN DRAGONS AND GREEN TRADE: ENV'T, ECON. & INT'L TRADE 137-44 (Simon S.C. Tay & Daniel C. Esty ed., 1996).

165. *See generally* Appellate Body Report, *United States – Import Prohibition of Certain Shrimp and Shrimp Products*, WT/DS58/AB/R, adopted 6 November 1998, DSR 1998:VII [hereinafter *United States – Shrimp Appellate* Report] (where the WTO observed that the trade regime seeks to maintain a sustainable economy and this can be interpreted to either include or exclude environmental sustainability); *Canada – Renewable Energy Appellate Report*, *supra* note 44, ¶ 5.28; *India – Solar Cells Panel Report*, *supra* note 37, ¶ 7.39 (showing that international trade law took precedence).

166. *See generally* UNEP, FISHERIES SUBSIDIES, SUSTAINABLE DEVELOPMENT AND THE WTO (2010) (there is a universally recognized link between fisheries subsidies and overfishing and the need for fisheries subsidies reform. Overfishing – driven by overcapacity and an increased demand for fish products – is a key factor for the global fisheries crisis and leads to a significant loss of potential economic benefits).

167. Panel Report, *United States – Import Prohibition of Certain Shrimp and Shrimp Products*, WT/DS58/R and Corr.1, adopted 6 November 1998, as modified by Appellate Body Report WT/DS58/AB/R, DSR 1998:VII, ¶ 5.33 [hereinafter *United States – Shrimp Panel Report*]; *United States – Shrimp Appellate Report*, *supra* note 165, ¶ 2.

168. *United States – Shrimp Appellate Report*, *supra* note 165, ¶ 2.

169. *Id.* ¶ 5.

170. *Id.* ¶ 3

171. *Id.* ¶ 186.

172. *United States – Shrimp Appellate Report*, *supra* note 165, ¶¶ 185-86.

who raised this challenge and not to others.[173] However, the implementation of the import ban was modified in the Arbitrator's solution.[174]

Domestic energy policy has always been a cornerstone in achieving multilateral environmental targets. This has become more relevant since the Paris Agreement, where the Conference of Parties adopted a bottom-up approach, and several nations committed to reducing climate change through disputes.

"Multilateral Environmental Agreements (MEAs), and international environmental law generally, provide a more fragmented form of governance that lacks the coherence, reach, financial backing and organizational structure of the WTO."[175] In addition to the aforementioned, conflicts between GATT and MEA could manifest in various forms.[176] Until 2009, WTO disputes did not involve the interpretation of MEAs.[177] However, inconsistencies in the diverging regimes of international trade and environmental law have been illustrated in WTO disputes raised over domestic renewable energy schemes. In resolving these disputes, the WTO has heard arguments on theories of trade and environmental law. However, the grounds for the decisions are usually rooted in trade effects. In doing so, the WTO has sparingly used the environmental exceptions. This impacts the ecology and exposes domestic efforts to protect the environment and achieve goals under MEAs, like the Paris Agreement, to WTO challenge. The risk of challenge and economic sanction under the WTO mechanism is likely to have a chilling effect on domestic environmental schemes and local action taken under an MEA. ITL is considered to be a mix of hard and soft law, whereas the environmental law regime is soft law.[178] Hard law, particularly trade sanctions, are considered one of the strongest mechanisms for enforcing international law.[179] Trade sanctions are an active part of the WTO enforcement process; that if a country enforces a trade sanction to further its environmental goals, or to sanction a nation that has violated environmental law, the sanctioning nation may face a dispute or measures under ITL.[180]

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173. Eckersley, *supra* note 10, at 24, 35.

174. *Id*.

175. *Id.* at 24.

176. Shinya Murase, *Trade and The Environment: With Particular Reference to Climate Change Issues*, *in Agreeing and Implementing the Doha Round of the WTO* 391, 397 (Harald Hohmann ed., 2008).

177. Neumayer, *supra* note 161, at 4.

178. For the proposition that WTO is hard law, and environmental treaties are soft law, *see generally* Greg Shaffer and Mark Pollack, *The Interaction of Hard and Soft Law in International Governance*, OPINIOJURIS (May 5, 2010), http://opiniojuris.org/2010/01/05/the-interaction-of-hard-and-soft-law-in-international-governance/. For the proposition that Hard law is generally more coercive than soft law, *see generally* Master's Thesis, Carlton University Department of Law, Jiali Gou, *The Role of Hard Law in the WTO and Chine in Regulating Economic Transactions* (January 2009), https://curve.carleton.ca/system/files/etd/57262c26-43fd-44db-bfa1-635a298d141d/etd_pdf/6f8c49440089622a4c0bfbbcb5b77099/guo-theroleofhardlawinthewtoandchinainregulating.pdf.

179. Carlos Manuel Vazquez, *Trade Sanctions and Human Rights - Past, present, and Future*, 6 J. INT'L ECON. L. 797, 807 (2003). For a discussion of international investment laws, *see generally* Satwik Shekhar, *'Regulatory Chill': Taking Right to Regulate for a Spin* (Centre for WTO Studies, Working Paper No. CWS/WP/200/27), http://wtocentre.iift.ac.in/workingpaper/%27REGULATORY%20CHILL'%20TAKING%20RIGHT%20TO%20REGULATE%20FOR%20A%20SPIN%20(September%202016).pdf.

180. Ekersley, *supra* note 10 (while environmental measures are likely to attract challenge or economic sanction unless they are compatible with the WTO or fall under narrow exceptions, there is no similar right of

Members may therefore pre-emptively self-censor and limit their international environmental efforts to avoid WTO disputes.[181]

It has been argued that the Obama administration indefinitely delayed the implementation of reporting and monitoring rules to increase the sustainability of sea food supply chains and prevent human trafficking.[182] Similar arguments were advanced by the European Union to either delay or not implement various welfare legislations such as the Leghold Traps Regulation of 1991 to prohibit use of capturing animals by jaws and Cosmetics Regulation of 2009 for product safety, animal testing and proof of claims standards.[183]

The self-censorship may also extend to environmental measures taken under MEAs. This is even though there have been no formal legal challenges in the WTO against an MEA directly. WTO jurisprudence seldom adopts an ecologically inclined interpretation of the environmental exemptions in the WTO rules.[184]

Further, even though both international environmental law and WTO law reference "sustainable development", they adopt a divergent approach in their focus.[185] International environmental law should aim to actively incorporate the legitimate interests of free trade and prevent its passive obstruction. The trade regime should try accommodating the legitimate concerns for environmental protection and differentiate developmental measures that are undertaken to benefit the environment from purely competitive measures.[186] This would create a mutually supportive system.[187]

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parties to challenge a trade rule before a MEA body for being inconsistent with the requirements of MEAs. There are no corresponding set of punitive remedies under MEAs that are comparable with trade retaliation).

181. *Id.* at 47; *see generally* Robert Falkner & Nico Jaspers, *Environmental Protection, International Trade and the WTO*, THE ASHGATE RESEARCH COMPANION TO INT'L TRADE POLICY Ch. 13 (Kenneth Heydon & Stephen Woolcock ed., (2012), http://static1.squarespace.com/static/538a0f32e4b0e9ab915750a1/t/538db556e4b038f0a6eff7c4/1401795926548/Falkner_Jaspers_2012_Environment_Trade_WTO_final_ms.pdf (last visited July 7, 2018).

182. Int'l Corp. Accountability Roundtable, *Challenging the Corporate Influence over Trade and Investment Dispute Settlement Mechanisms* (Nov. 20, 2017), https://www.icar.ngo/news/2017/11/20/challenging-the-corporate-influence-over-trade-and-investment-dispute-settlement-mechanisms (last visited July 7, 2018); *see generally* U.S. DEP'T OF STATE, TRAFFICKING IN PERSONS REPORT (June 2018), https://www.state.gov/j/tip/rls/tiprpt/2018/ (last visited July 7, 2018).

183. Iyan Offor, *Chilling Effect of Trade on Animal Welfare*, EUROGROUP FOR ANIMALS, Aug. 23, 2017, http://www.eurogroupforanimals.org/chilling-effect-trade-animal-welfare (last visited July 7, 2018).

184. B. S. Chimni, *WTO and Environment: Shrimp-Turtle and EC-Hormones Cases*, 35 ECON. & POLITICAL WEEKLY 1752, 1760 (2000), https://www.jstor.org/stable/4409297.

185. *Id.*; *see also* Preambles of both the WTO and the UNFCCC acknowledge sustainable development and free trade. However, the interpretation on sustainable development differs; it is thought that sustainable development under ITL favours economic sustainability, and the UNFCCC favours environmental sustainability. Kang, Sungjin, Carbon Border Tax Adjustment from WTO Point of View (June 22, 2010). Society of International Economic Law (SIEL), Second Biennial Global Conference, University of Barcelona (July 8-10, 2010), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1628718 (there is some inconsistency between border carbon adjustments and international trade law); Vyoma Jha, *Political Economy of Climate, Trade and Solar Energy in India*, 9(2) TRADE L. & DEV. 138, 141 (2017) (the ITL frowns on sanctions against/ subsidies on environmentally friendly and environmentally harmful products, for example renewable energy and fossil fuel).

186. Trujillo, *supra* note *32*.

187. *Id.* at 7. Additionally, the WTO has conducted negotiations on mutual supportiveness of trade with the environment. *WTO Negotiations on Environmental Goods and Services: A Potential Contribution to the Millennium Development*, UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT (2009),

A. Energy security and international trade law

Article XX (j) was discussed for the first time ever in *India—Solar*, when India argued that it mandated LCRs to ensure a continuous and affordable supply of solar cells and modules, and thereby public welfare and energy security.[188]

Both limit imports, and therefore price increase is likely to follow.[189] However, US steel is a total ban of imports, whereas India solar does not completely ban import of solar cells. In the United States, the local steel industry stands to benefit directly from the total ban of steel imports, but this manufacturers further along the manufacturing chain, such as canners and automobile manufacturers, are likely to suffer. In contrast, LCRs are not a ban, and there is no scarcity of solar panels in India, where prices have continued to sharply fall in the last few years.[190]

Measures that intend to secure compliance with laws and regulations are immune under Article XX (d).[191] India cited various international and domestic obligations compliance of which is necessary to mitigate climate change and sustainable development.[192] Article XX (j) protects measures that are essential to acquire or distribute products in short supply.[193] India asserted that solar cells and modules are in short supply due to lack of domestic capacity and the LCR is the only way to increase domestic manufacturing capacity, provide energy security, and ensure affordable energy.[194]

There are two essentials to save LCR measures through Article XX (d): (1) the LCR measure should be required to secure compliance with laws or regulations that are not themselves inconsistent with provisions of GATT; and (2) such measures should be necessary to secure compliance. India cited various international and domestic legal instruments that necessitate mitigating climate change and ensure sustainable development.[195] The Panel observed that it is important to incorporate international instruments into domestic legal framework.[196] As India has not incorporated them by itself and they are not automatically incorporated, they do not by form part of domestic law and thus, cannot be used to defend the

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https://unctad.org/en/Docs/ditcted20084_en.pdf. Since the MEAs and the ITL have contradictions, there is a need to harmonize them. With the current divergence, following the MEAs is likely to breach the ITL and following the ITL may delay the fulfilment of environmental goals, particularly where LCRs for clean technology are challenged under the ITL.

188. *India – Solar Cells Panel Report*, *supra* note 37, ¶ 7.202.

189. Lucy Woods, *Solar Cell Price Rises 'Putting Indian Domestic Content Project at Risk*, PV TECH (Mar. 28, 2014), https://www.pv-tech.org/news/nsefi_indian_domestic_content_developers_debating_ppa_signing.

190. Zachary Shahan, *Solar Panel Prices Continue Falling Quicker Than Expected*, CLEAN TECHNICA (Feb. 11, 2018), https://cleantechnica.com/2018/02/11/solar-panel-prices-continue-falling-quicker-expected-cleantechnica-exclusive/.

191. *India – Solar Cells Panel Report*, *supra* note 37, ¶ 7.266.

192. *Id*. ¶¶ 7.269, 7.275.

193. *Id*. ¶ 7.198.

194. *Id*. ¶¶ 7.189, 7.220.

195. *India – Solar Cells Panel Report*, *supra* note 37, ¶ 7.267. India cited four International Instruments: Preamble of WTO Agreement, UNFCC, Rio Declaration & RIO + 20 and four domestic instruments: The Electricity Act of 2003, National Electricity Policy, National Electricity Plan & National Action Plan on Climate Change. *Id*. ¶¶ 7.269, 7.275.

196. *Id*. ¶ 7.298.

LCR measures.[197] Additionally, domestic instruments should not be mere policy documents but should be having binding effect in form of law or regulation.[198] The Panel observed that India's Electricity Act 2003, which required a national electricity plan was a law. However, there was no nexus between § 3 of the Electricity Act, 2003, which required the government to prepare a National Electricity policy, and the LCRs that were purportedly in compliance with that law. [199] The government procurement exemption under GATT Article III:8 applies only where the government procurement was "to secure compliance with law or regulation." The Panel held that 'to secure compliance with law or regulation' means to enforce obligations under laws or regulations and not to enforce its objectives.[200] Therefore, the Electricity Act, 2003 did not enforce any obligation or provide any penalties for the violation of the LCR requirement and was not legally enforceable.[201]

Additionally, the Appellate Body held that mere actions by the executive branch of the government in pursuance of international instruments do not make them eligible to fall under rules or regulations and to be directly effective domestically.[202]

However, the Panel found that §3 of the Electricity Act, 2003 was a "law" or "regulation" under GATT III:8; but found no nexus between LCR measures and the statutory provision, which calls for preparing of national electricity plan and national electricity policy.

XX(j) will protect LCR measures only if the product is in "general or local short supply"and the Products are in general or local short supply if demand in the relevant geographical area exceeds supply.[203] India argued that short supply stems from a lack of production or manufacturing capacity while US argued that local short supply exists only if domestic production plus imports, minus exports does not meet domestic demand.[204] The Panel held that short supply is neutral between domestic production and imports and did not exist when solar cells and modules were available for import.[205] Additionally, short supply does not cover preventive

197. *Id*.

198. *India – Solar Cells Panel Report, supra* note 37, ¶ 7.304 (referencing *Mexico – Taxes on Soft Drinks*, WTO Doc. No. WT/DS308/AB/R, adopted March 6, 2006).

199. *India – Solar Cells Panel Report, supra* note 37, ¶ 7.329.

200. *Id*. ¶ 7.330.

201. *Id.* ¶¶ 7.310, 7.315. However, the Appellate Body disagreed with the Panel on this observation. The Appellate Body held that the scope of laws or regulations is not just limited to legally enforceable rules of conduct under the domestic legal system because there may be other ways to demonstrate that an instrument operates with a sufficient degree of normativity. *India – Solar Cells Appellate Report, supra* note 60, ¶ 5.121.

202. *Id.* ¶ 5.148*; India – Solar Cells Panel Report, supra* note 37, ¶ 7.298.

203. *Id.* ¶ 7.206. The Appellate Body agreed with the Panel's observation, and also held that general or local short supply for the purposes of Article XX (j) should be sufficiently established if existence of short supply within member's domestic territory is proved. However, the scope of potential source of supply should not be limited to be domestic supply chain. *India – Solar Cells Appellate Report, supra* note 60, ¶¶ 5.67-5.68; *India – Solar Cells Panel Report, supra* note 37, ¶¶ 7.207, 7.218-7.219.

204. *India – Solar Cells Panel Report, supra* note 37, ¶¶ 7.220-7.223.

205. *Id*. ¶ 7.224.

or anticipatory measures for products that may fall in risk of short supply in future.[206]

The DSB's interpretation of Article XX reflects WTO's rigidness in assigning normative priority to business goals over environmental. The incorporation of International Environmental Law into WTO framework will require treatment of substantive norms as abstract entities, ideally separate from procedural requirements.[207] Other international structures have been successful at incorporating environmental concerns parallel to business concerns, such as the United Nations Convention on Law of Seas (*hereinafter* "UNCLOS").[208] The UNCLOS has harmoniously integrated multi-layered and multidisciplinary regulations and enforcements through its regulatory bodies and inclusive membership of nations, local governments, businesses and individuals alike.[209] Further, the UNCLOS allows its members autonomy in creating informal arrangements, which are often better suited and less bureaucratic than multilateral agreements.[210] The UNCLOS has been successful in incorporating the principles of International Environmental Law, unlike WTO, which treats instruments beyond its scope as immaterial for the purpose of adjudication.[211] The UNCLOS recognize that its tribunal "*shall apply . . . other rules of international law not incompatible with this Convention*."[212] Following the UNCLOS's model that harmonizes international trade with International Environmental Law, WTO may reconcile business and environmental concerns by providing broad interpretations for its rules. Canada Renewables and India Solar have examined and developed WTO jurisprudence on environmental-leaning LCRs. In September 2016, India raised a request for consultation under GATT Article III:4, TRIMs, and the SCM Agreement, against LCR measures for renewables in *US Renewables*, such as state Renewable Energy Credits (RECs) and Renewable Portfolio Standards (RPS) programs.[213] A dispute, which is now before the DSB, will determine the validity of US state-based renewable energy

206. *Id*. ¶ 7.240, 7.250, 7.256. The Appellate Body also observed such products as "essential" for acquisition or distribution. It asserted that essentiality should be reflective of societal interest, values, acceptable degree of trade restrictiveness and due consideration of alternatives available. *India – Solar Cells Appellate Report*, *supra* note 60, ¶ 5.63.

207. For more on substantive norms as abstract entities, *see generally* Gunnar Nordén, *The Structure of Norms and Legal Uncertainty: A Framework for the Functional Analysis of Law as Transformed in Multi-Member Decision Mechanisms*, YALE LAW SCHOOL DISSERTATIONS (2006), https://digitalcommons.law.yale.edu/ylsd/2/.

208. Convention on the Law of the Sea, 1833 UNTS 3; 21 ILM 1261 (1982) [hereinafter UNCLOS].

209. *Id.*

210. Mitchell et al., *Ruling the Sea: Institutionalization and Privatization of the Global Ocean Commons*, IOWA RESEARCH ONLINE (2008), http://ir.uiowa.edu/cgi/viewcontent.cgi?article=1003&context=polisci_pubs.

211. Though the WTO has begun to treat Sustainable Development as one of its core principles, it still hasn't evolved to incorporate IEL's instrument in the adjudication of its disputes. Additionally, Article 3.2 of the DSB Agreement says that WTO has to take into account customary rules of international law. Article 11 guides DSB to make an objective assessment. For more, *see generally* JOOST PAUWELYN, CONFLICT OF NORMS IN PUBLIC INTERNATIONAL LAW: HOW WTO LAW RELATES TO OTHER RULES OF INTERNATIONAL LAW (CUP 2003); for more on Article 3.2, *see generally* Lakshman D. Guruswamy, *Should UNCLOS or GATT/WTO Decide Trade and Environment Disputes?*, 7 MINN. J. OF GLOBAL TRADE 319 (1998).

212. *See generally* UNCLOS, *supra* note 208.

213. *See generally India – Solar Cells Panel Report*, *supra* note 37.

programs (*US-Renewables*).[214] *US- Renewables* is an opportunity for the WTO to incorporate environmental concerns into its mandate; striking a balance between LCR motivations and fair trade practices under the WTO framework.

The jurisprudence of the DSB evidences a greater willingness to adopt environmental values, and environmental regimes have become more restrained in their use of trade measures for environmental purposes. Nonetheless, despite these signs of reconciliation, how far the environmental regulations can go in restricting trade, and how far the trade regime can go in restricting environmental measures remain to be specifically ascertained.

VI. CONCLUSION

There is a need to harmonize international trade and environmental law. Whether a domestic measure to protect the environment, such as renewable energy policy, is consistent with International Trade Law will depend, first, on the analysis of likeness under GATT. Renewable Portfolio Standard laws are effective in achieving environmental goals but may also disfavor imports of certain other forms of energy. The analysis of *Japan-Spirits* and *India-Solar* would suggest that the imported non-renewable energy will be disadvantaged by Renewable Portfolio Standards. However, this will not distort the market, as there is no one market for electricity. Electricity from renewable and non-renewable sources operate in different markets; their fuel source, method of generation and physical characteristics: particularly their environmental impacts differ. Therefore, electricity from renewable and non-renewable sources should not be equated as substitutes or like products. This will enable member states to legislate more bona-fide schemes that displace fossil fuels with renewable energy without fear of violating the prohibition on LCRs under ITL.

There are strong arguments both for and against LCRs. Whether an LCR promotes a protectionist interest through greenwashing or protects an environmental interest will depend on the peculiar facts and circumstances of the case. This classification becomes harder because an environmental measure will have ancillary trade impacts and vice versa.

In *India Solar,* the Panel and Appellate Body did not go into the question of whether energy security, environmental protection and affordable energy are relevant governmental functions that would protect LCRs under the Article III:8 exception.[215] This analysis is particularly relevant in states where there are government owned distribution companies that regulate the energy mix and supply electricity to consumers. This analysis of the exemptions by the Panel and Appellate Body in India Solar, and the scope of "likeness" may impact the ability of a public electricity distribution company from following an energy mix mandated by law, if it imports electricity.

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214. WTO members consider India's request for compliance panel in dispute over solar cells, *India—Certain Measures Relating to Solar Cells and Solar Modules*, WTO (Feb. 18, 2018), https://www.wto.org/english/news_e/news18_e/dsb_09feb18_e.htm.

215. *See generally India – Solar Cells Panel Report*, *supra* note 37; *see also India – Solar Cells Appellate Report*, *supra* note 60.

US-Renewables, a dispute before the Panel, is a new opportunity for the WTO to harmonize international law and domestic Renewable Energy Policy on one hand, with international environmental law on the other.

Since the Intergovernmental Panel on Climate Change (IPCC) has prescribed "net zero" emissions by 2050, there is an urgent need for environmental measures to be recognized and promoted by the WTO and under ITL. [216]

216. *Global warming report, an 'ear-splitting wake-up call' warns UN chief*, UN NEWS (Oct. 8, 2018), https://news.un.org/en/story/2018/10/1022492.