

## *Special Issue: Trade & Climate Change*

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|--------------------|--|
| EDITORIALS         | Ali Amerjee & Nakul Nayak, <i>A 'Heated' Debate: The WTO's Climate Question</i><br>Thomas Cottier, <i>Three Core Issues</i>  |
| ARTICLES           | Rafael Leal-Arcas, <i>Trade Proposals for Climate Action</i><br>Kati Kulovesi, <i>Real or Imagined Controversies? A Climate Law Perspective on the Growing Links between the International Trade and Climate Change Regimes</i><br>Mark Wu, <i>Why Developing Countries Won't Negotiate? The Case of the WTO Environmental Goods Agreement</i><br>Sadeq Z. Bigdeli, <i>Clash of Rationalities: Revisiting The Trade and Environment Debate in Light of WTO Disputes over Green Industrial Policy</i> |
| NOTES AND COMMENTS | Mahesh Sugathan, <i>The Case for 'Sui-Generis' Developing Country-led Initiatives on Carbon Footprint Labelling</i>  |

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Rafael Leal-Arcas, *Trade Proposals for Climate Action*

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## TRADE PROPOSALS FOR CLIMATE ACTION

**RAFAEL LEAL-ARCAS\***

*This article examines various mechanisms through which international trade can address climate change mitigation. It proposes the introduction of a regional model for promoting climate change mitigation, technology transfer and sustainable energy for all via the vast, ever-expanding network of preferential trade agreements (PTAs) across the globe. These PTAs present a more efficient vehicle to promote environmental protection than the multilateral trading platform. The article also explores the potential of more cohesive energy governance in promoting sustainable energy and discusses the World Trade Organization's (WTO) role in supporting renewable energy. It discusses the impact of subsidies on different forms of energy and whether feed-in tariffs count as subsidies in the WTO context. The role of emissions trading schemes (ETS) is also examined, with particular focus on the European Union's ETS and its expansion to the aviation sector. Another area where trade can feed into climate change mitigation efforts is eco-labelling. Lastly, the article focuses on the need to invest in innovative solutions and take creative approaches to environmental protection. It emphasizes the need for a flexible approach on the part of both the trade and climate change regimes, and the need to work together more closely.*

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## TABLE OF CONTENTS

- I. INTRODUCTION
- II. USING PTAs TO PROMOTE CLIMATE CHANGE MITIGATION
  - A. THE TRANSATLANTIC TRADE AND INVESTMENT PARTNERSHIP
  - B. THE TRANS-PACIFIC PARTNERSHIP
- III. ENERGIZING THE DISCUSSION
  - A. STRONGER GOVERNANCE OF ENERGY TRADE
  - B. WTO'S TREATMENT OF RENEWABLE ENERGY
    - 1. TRADE POLICY SHAPES GREEN ENERGY GOVERNANCE
    - 2. RENEWABLE SUBSIDIES: CHANGING THE PLAYING FIELD
    - 3. ARE FEED-IN TARIFFS SUBSIDIES?
    - 4. THE CASE OF LOCAL CONTENTS
    - 5. GREEN SUBSIDY FUND
    - 6. FUNDING ENERGY SECURITY THROUGH GHG EMISSIONS CONTROL
    - 7. GENERAL EXCEPTIONS UNDER GATT ARTICLE XX
    - 8. SUMMARIZING THE ARGUMENTS
- IV. OTHER PROPOSALS FOR PROMOTING CLIMATE CHANGE MITIGATION THROUGH TRADE
  - A. EMISSIONS TRADING SCHEME – GOING GLOBAL, INCLUSION OF AVIATION AND SHIPPING
    - 1. TOWARDS A GLOBAL CARBON MARKET?
    - 2. INCLUSION OF AVIATION
    - 3. SHIPPING
  - B. ECO-LABELLING
  - C. INVESTING IN INNOVATION
- IV. CONCLUSION

**I. INTRODUCTION**

The interface between trade and climate change is impossible to ignore. Traditionally, growth in trade, and the increased economic activity it brings about, has been associated with vast consequences for the environment. For instance, trade-induced growth may cause environmental harm through the unsustainable consumption of natural resources and waste production, there are transport externalities resulting from trade, lowering environmental standards gives countries a competitive advantage in trade, reduced biodiversity may lead to greater ecological risk and trade agreements may override environmental regulations.

On the other hand, free trade can also be conceived as pro-environment. It generates resources that can be used toward environmental protection, it encourages the development of climate-friendly technologies and their dissemination, and it fosters the multilateral cooperation needed to address

transboundary environmental problems. In addition, arguably, economic growth and the increased educational levels and awareness that come with it may lead countries to promote better environmental practices.

Whether viewed as friend or foe, the bottom line is that trade and climate change mitigation are inextricably linked and finding areas of cooperation between the two is imperative. Fortunately, the days of mutual distrust between the trade and climate agendas are long gone,<sup>1</sup> and today, numerous areas of symbiosis between the two agendas have been identified, including emissions trading schemes, border carbon measures and labelling schemes, to name but a few.<sup>2</sup>

Moreover, it is indisputable that both the trade and climate regimes are closely linked to sustainable development. According to the World Bank, “climate change is a fundamental threat to sustainable economic development and the fight against poverty.”<sup>3</sup> The World Trade Organization’s (“WTO”) mission statement claims that trade should be “more beneficial for developing countries,” and that it should “protect the environment.”<sup>4</sup> However, whether the two regimes are prioritizing development to the necessary degree remains at question. According to a recent Wuppertal Institute report, “...in the UNFCCC sustainable development has been relegated to the status of a ‘co-benefit’ that is seen as nice to have but not strictly necessary.”<sup>5</sup> The report goes on to state that “the climate regime would...profit from recognising that climate change is far from being the only rationale driving emission reduction policy and from turning the priorities around and framing commitments in a way that puts sustainable development benefits front and centre.”<sup>6</sup>

Given this context, any climate response measures should aim at minimizing trade impacts; response measures that solely factor in climate change mitigation goals without acknowledging trade repercussions, may end up hindering sustainable development on other fronts. In this respect, Article 3.14 of the Kyoto

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<sup>1</sup> RAFAEL LEAL-ARCAS, CLIMATE CHANGE AND INTERNATIONAL TRADE 4 (2013) [hereinafter LEAL-ARCAS].

<sup>2</sup> ICTSD, A RESPONSE TO RESPONSE MEASURES: SOLVING CONFLICTS BETWEEN TRADE AND CLIMATE CHANGE POLICY, 5(4) BRIDGES TRADE BIORES REV. (Nov. 2011), available at <http://ictsd.org/i/news/bioresreview/119732/>.

<sup>3</sup> See *Climate Change Overview*, THE WORLD BANK, <http://www.worldbank.org/en/topic/climatechange/overview>.

<sup>4</sup> See *Understanding the WTO – What we stand for*, WORLD TRADE ORGANIZATION, [http://www.wto.org/english/thewto\\_e/whatis\\_e/what\\_stand\\_for\\_e.htm](http://www.wto.org/english/thewto_e/whatis_e/what_stand_for_e.htm).

<sup>5</sup> Wolfgang Sterk, et al., *Warsaw Groundhog Days—Old Friends, Positions and Impasses Revisited All Over Again at the 2013 Warsaw Climate Conference*, (Wuppertal Institute, 2013), available at [http://wupperinst.org/uploads/tx\\_wupperinst/warsaw-report.pdf](http://wupperinst.org/uploads/tx_wupperinst/warsaw-report.pdf).

<sup>6</sup> *Id.*

Protocol<sup>7</sup> commits its Parties to strive to minimize adverse economic, social and environmental impacts on other Parties, especially developing countries, and in particular those commitments identified in Articles 4.8 and 4.9 of the UN Framework Convention on Climate Change<sup>8</sup> ('UNFCCC') regarding specific needs of developing and least developed countries, respectively, with regard to funding and transfer of technology.

Similarly, "21<sup>st</sup> century" trade agreements, such as the Trans-Pacific Partnership (TPP) proclaims itself to be, have an enormous potential to achieve environmental goals.<sup>9</sup> Such mega trade agreements present important opportunities to include provisions that promote climate change mitigation and address other environmental challenges by, for example, reducing barriers to environmental goods and services, or by promoting green technology.<sup>10</sup> In today's highly interconnected world, capitalizing on trade measures to promote climate change mitigation should not be treated as a possibility worth considering at some point down the line, but as an absolute requirement *ab initio*.

Is the overall impact of current climate response measures trade-restrictive? Or do these measures manage to achieve both environmental and economic goals? How can current governance of climate change and trade be expanded or amended to make climate response measures more trade-friendly, or use trade more effectively towards achieving climate action goals? This article explores these questions, while putting forth several proposals for using trade tools toward climate change mitigation.

Following the introduction, Part II proposes the introduction of a regional model for promoting climate change mitigation by using preferential trade agreements ('PTA') with climate change chapters in order to achieve environmental protection

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<sup>7</sup> Kyoto Protocol to the United Nations Framework Convention on Climate Change art. 3.14, Dec. 11, 1997, 2303 U.N.T.S. 148.

<sup>8</sup> United Nations Framework Convention on Climate Change, art. 4.8, 4.9, May 9, 1992, 1771 U.N.T.S. 107.

<sup>9</sup> On 12 November 2011 leaders of the then nine Trans-Pacific Partnership (TPP) countries announced that they had established "[a] comprehensive, next-generation regional agreement that liberalizes trade and investment and addresses new and traditional trade issues and 21<sup>st</sup>-century challenges." See Press Release, OFFICE OF THE UNITED STATES TRADE REPRESENTATIVE, TRANS-PACIFIC PARTNERSHIP LEADERS STATEMENT, <http://www.ustr.gov/about-us/press-office/press-releases/2011/november/trans-pacific-partnership-leaders-statement>.

<sup>10</sup> See Joshua Meltzer, *The Trans-Pacific Partnership Agreement, the environment and climate change*, in TRADE LIBERALISATION AND INTERNATIONAL CO-OPERATION: A LEGAL ANALYSIS OF THE TRANS-PACIFIC PARTNERSHIP AGREEMENT (Tania Voon ed., 2014) [hereinafter Joshua Meltzer].

goals. Part III advocates implementing a stronger governance of energy trade and provides an analysis of the WTO's treatment of renewable energy. Part IV examines various other mechanisms through which trade can promote climate change mitigation. These include designing more ambitious emissions trading schemes, the potential for labelling in encouraging greener trade, and the need to invest in innovative solutions. Part V concludes the article.

## II. USING PTAs TO PROMOTE CLIMATE CHANGE MITIGATION

Trade is demonstrably instrumental in achieving environmental goals. For example, the Montreal Protocol on Substances that Deplete the Ozone Layer<sup>11</sup> restricted parties from trading in ozone-depleting substances with non-parties. This not only led to wide participation (the Montreal Protocol now has 197 Parties), but also removed any competitive advantage that a non-party might enjoy (that is, preventing leakage<sup>12</sup> to non-participating jurisdictions).<sup>13</sup> What is more, the Montreal Protocol did not restrict trade.<sup>14</sup> Of course, climate change is a more complex issue, linked to a plethora of other environmental, social, and economic considerations. This interconnectedness of climate change to other considerations makes it a more challenging issue to address through trade policy. It also presents a wide range of opportunities for multidisciplinary cooperation.

“Green industrial policy,” as Aaron Cosbey dubs it,<sup>15</sup> is the crossroad for trade and climate, where we have the opportunity to purposefully shape policies in various sectors in order to promote environmental protection. According to Cosbey, “green industrial policy...is any [such] policy that supports the development of industries that produce ‘green’ goods, or goods that: have better environmental performance in operation than their competitors (e.g., electric vehicles, renewable

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<sup>11</sup> Montreal Protocol on Substances that Deplete the Ozone Layer, Sept. 16, 1987, 1522 U.N.T.S. 3.

<sup>12</sup> According to Patrick Low *et al.*, “carbon leakage may arise where countries implement asymmetric climate policies. When an industry in one country assumes additional costs in order to reduce greenhouse gas (GHG) emissions and those same industries in other countries incur lesser (or zero) costs, this may affect geographical patterns of investment, production and trade.” See Patrick Low *et al.*, *The Interface between the Trade and Climate Change Regimes: Scoping the Issues*, Staff Working Paper ERSD-2011-1, available at [http://www.wto.org/english/res\\_e/reser\\_e/ersd201101\\_e.pdf](http://www.wto.org/english/res_e/reser_e/ersd201101_e.pdf).

<sup>13</sup> LEAL-ARCAS, *supra* note 1 at 93.

<sup>14</sup> Scott Barrett, *Climate Change and International Trade: Lessons on their Linkage from International Environmental Agreements*, 14 (Centre for Trade & Econ. Integration, The Graduate Institute, Geneva, Switzerland, 2010).

<sup>15</sup> See Aaron Cosbey, *Green Industrial Policy and the World Trading System*, ENTWINED (Issue Brief No. 17, 2013), available at [http://www.iisd.org/pdf/2013/entwined\\_brief\\_green\\_industrial.pdf](http://www.iisd.org/pdf/2013/entwined_brief_green_industrial.pdf).

electricity-generating equipment, biofuels); directly address environmental problems (e.g. environmental remediation technologies); are produced in a way that is environmentally preferable to their competitors (e.g. organic agriculture).”<sup>16</sup> Thus trade, the traditional foe of environmental protection, has manifold ways by which to redeem itself. This paper proposes several ways in which trade can promote climate change mitigation.

This article proposes the introduction of a regional model for promoting climate change mitigation, technology transfer and sustainable energy for all, as an alternative to the present structure of the UNFCCC/Kyoto Protocol framework. Given the proliferation of PTAs, especially in the form of bilateral treaties, in the international trading system, this part proposes creating PTAs with climate change chapters, thus embedding climate goals within bilateral/trilateral/plurilateral trade agreements. Involving major GHG emitters through PTAs and economic partnership agreements that include contingent climate mitigation efforts can be an effective avenue towards reducing GHG emissions, and could therefore move both the trade and climate agendas forward harmoniously.

Climate-related chapters could promote, among other things, trade and investment in environmental goods and services and climate-friendly products and technologies. Indeed, given how proactive developing countries are in the conclusion of PTAs, the option of climate-related PTAs would be an effective way towards a future global climate change agreement, especially since the Kyoto Protocol imposes no concrete obligation on developing countries. In this sense, climate-related PTAs can be used as a legal mechanism to further the multilateral climate change agenda while also including major developing countries to be part of the climate change mitigation exercise. An additional option for such “environmentally-conscious” PTAs is to include provisions related to climate change adaptation efforts. These could take the form of knowledge-transfer, capacity-building, infrastructural and agricultural support, *et cetera*. The advantage of such an approach lies not only in providing trade incentives towards GHG emissions reduction, investment in renewable energy, or other climate change mitigation goals, but also in circumventing the currently arduous multilateral trading process to utilize the ever-expanding network of PTAs around the world.

PTAs promoting climate mitigation goals can have strong benefits for economic growth in developing countries thereby delivering both environmental and trade wins. In fact, in a 2007 speech, then WTO Director-General Pascal Lamy stated the benefits of trading with developing countries that are exporters of climate-friendly products, citing the examples of Indonesia, one of the world's top 10 exporters of steam condensers, India, a top exporter of hydraulic turbines; and

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<sup>16</sup>*Id.* at 3.

Malaysia, which is amongst the world's top five exporters of photovoltaic cells.<sup>17</sup> All these cases represent clear examples where the trade and climate agendas can work together.

In apparent recognition of the potential power of PTAs to move the climate agenda forward, trade agreements are going increasingly green. This is certainly a positive step and is an affirmation that the two agendas do not have to be at loggerheads. In this respect, the US, EU, China,<sup>18</sup> Japan, Australia, Canada, New Zealand, South Korea, Norway, Switzerland, Costa Rica, Chinese Taipei, Hong Kong, and Singapore proposed an initiative at the World Economic Forum in Davos, Switzerland, in 2014 over lowering tariffs and other trade barriers on the \$1.4 trillion global annual market in green goods and services.<sup>19</sup> The move builds “on a 2012 commitment by the 21 countries in Apec, the Pacific Rim forum, to cut all tariffs to a maximum of 5 per cent by 2015 for 54 different classes of goods. Those range from solar panels and wind turbines to filters and other parts used in power and sewerage plants and catalytic converters for cars.”<sup>20</sup>

It is hoped that proposed changes will resurrect a deal on green goods, which has thus far been at an impasse during the WTO's Doha Round of multilateral trade negotiations, which started in 2001.<sup>21</sup> According to the International Centre for Trade and Sustainable Development, “these new environmental goods talks, if launched in Davos, would aim to develop a most-favoured-nation (MFN) type of pact, similar to the WTO's Information Technology Agreement. In these types of arrangements, participants take on binding commitments whose benefits are extended to the rest of the WTO membership after reaching a ‘critical mass.’”<sup>22</sup>

Given that the major GHG emitters are large economies, large PTAs such as the Transatlantic Trade and Investment Partnership (TTIP), the TPP, or the Regional

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<sup>17</sup> Pascal Lamy, Former Director-General, World Trade Org., Speech at the Informal Trade Ministers' Dialogue on Climate Change: Doha could deliver double-win for environment and trade (Dec. 9, 2007), *available at* [http://www.wto.org/english/news\\_e/sppl\\_e/sppl83\\_e.htm](http://www.wto.org/english/news_e/sppl_e/sppl83_e.htm) [hereinafter Lamy – Doha].

<sup>18</sup> Shawn Donnan, *China joins Davos drive to cut green trade barriers*, FINANCIAL TIMES, Jan. 24, 2014, <http://www.ft.com/intl/cms/s/0/63a490e0-8401-11e3-b72e-00144feab7de.html#axzz2sq2UWnNL>.

<sup>19</sup> See Shawn Donnan, *Drive at Davos forum to cut green trade barriers*, FINANCIAL TIMES, Jan. 23, 2014.

<sup>20</sup> *Id.*

<sup>21</sup> *Id.*

<sup>22</sup> See ICTSD, *Post-Bali Trade Agenda in Focus as Davos Meetings Begin*, 18(2) BRIDGES WEEKLY TRADE NEWS DIGEST (Jan. 23, 2014), *available at* <http://ictsd.org/i/news/bridgesweekly/182601/>.

Comprehensive Economic Partnership<sup>23</sup> have the potential to be extremely effective when it comes to addressing climate change mitigation. In this context, the paper takes a closer look at two mega PTAs currently under negotiation, the TTIP and the TPP, and their potential for addressing climate change mitigation.

#### *A. The Transatlantic Trade and Investment Partnership*

The Transatlantic Trade and Investment Partnership (“TTIP”) is a trade and investment agreement currently under negotiation between the European Union (EU) and the United States. It is the world’s largest economic relationship, accounting for nearly a third of global trade.<sup>24</sup> It has dominated the world economy since the beginning of the 20<sup>th</sup> century. In fact, major global economic institutions are based upon American and European values and interests. In this context, the TTIP can be a forceful engine towards addressing climate change through trade policy. Thus far, negotiations have addressed the environment and sustainable development in a more general manner but there does not seem to be any substantive effort toward climate change mitigation. Negotiations are still underway though. As expected, this is proving to be a lengthy and highly complex process.

In June 2012, both sides of the Atlantic showed an interest to start negotiations for a free-trade agreement (‘FTA’) because both parties have much to gain economically if non-tariff measures were to be removed.<sup>25</sup> EU trade commissioner Karel De Gucht made a statement in June 2012 on the interim report<sup>26</sup> on the transatlantic trade relationship in the following manner:

The announcement of Presidents Barroso and Obama welcoming the publication of the interim report on how to deepen the transatlantic trade relationship is extremely encouraging. We are now entering the last leg of mapping out how we should tackle any eventual negotiation to boost growth and jobs through our trade partnership. I look forward to continue working with my US

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<sup>23</sup> The Regional Comprehensive Economic Partnership is composed of the 10 members of the Association of Southeast Asian Nations plus China, Japan, South Korea, India, New Zealand, and Australia.

<sup>24</sup> See *Trade – United States*, EUR. COMMISSION, <http://ec.europa.eu/trade/policy/countries-and-regions/countries/united-states/>.

<sup>25</sup> Koen G. Berden et al., *Non-Tariff Measures in EU-US Trade and Investment – An Economic Analysis* xiv (2009), available at [http://trade.ec.europa.eu/doclib/docs/2009/december/tradoc\\_145613.pdf](http://trade.ec.europa.eu/doclib/docs/2009/december/tradoc_145613.pdf).

<sup>26</sup> See *Interim Report to Leaders from the Co-Chairs*, (EU-US High Level Working Group on Jobs & Growth, June 19, 2012), available at [http://trade.ec.europa.eu/doclib/docs/2012/june/tradoc\\_149557.pdf](http://trade.ec.europa.eu/doclib/docs/2012/june/tradoc_149557.pdf).

counterpart to complete the final stage allowing us to present both leaders with the final report as quickly as possible.<sup>27</sup>

The official launch of the negotiations was announced by U.S. President Barack Obama, President of the EU Commission, José Manuel Barroso, President of the European Council, Herman Van Rompuy and UK Prime Minister, David Cameron at the G8 Summit in June 2013. Negotiations started in July 2013. After the first round of negotiations, the EU chief negotiator said: “The main objective has been met: we had a substantive round of talks on the full range of topics that we intend to cover in this agreement. This paves the way to for a good second round of negotiations in Brussels in October.”<sup>28</sup> The topics covered were market access for agricultural and industrial goods, government procurement, investment, energy and raw materials, regulatory issues, sanitary and phytosanitary measures, services, intellectual property rights, sustainable development, small- and medium-sized enterprises, dispute settlement, competition, customs/trade facilitation, and state-owned enterprises. The aim of both parties is to set the standard for the rest of the world in the development of global rules for the various issues on the negotiating table, including climate change mitigation.

The second round of TTIP negotiations concluded in November 2013, after a week of discussions. Again, De Gucht’s statement included no specific mention of the TTIP’s plan for addressing climate change and other environmental issues:

“We are making good and steady progress across the broad range of issues we need to tackle to make our transatlantic business environment more efficient and effective whilst preserving the protections and rights already in place for consumers. Let’s keep our eye on the prize: more jobs for people in Europe, more growth for the European economy.”<sup>29</sup>

In terms of environmental issues, the Directorate-General for Trade of the European Commission merely stated that video conferences on sustainable development were being planned for the coming weeks.<sup>30</sup> However, the EU has produced several initial TTIP Position Papers, one of which focuses on trade and

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<sup>27</sup> See *Statement by EU Trade Commissioner Karel De Gucht on the interim report of the EU-US High-Level Working Group on Jobs and Growth*, <http://trade.ec.europa.eu/doclib/press/index.cfm?id=807>.

<sup>28</sup> *EU and US Conclude First Round of TTIP Negotiations in Washington*, EUR. COMMISSION (July 12, 2013), <http://trade.ec.europa.eu/doclib/press/index.cfm?id=941>.

<sup>29</sup> *EU and US Conclude Second Round of TTIP Negotiations in Brussels*, EUR. COMMISSION (Nov. 15 2013), <http://trade.ec.europa.eu/doclib/press/index.cfm?id=988>.

<sup>30</sup> *Id.*

sustainable development. The paper envisages an integrated TTIP chapter, “specifically devoted to aspects of sustainable development of importance in a trade context, more specifically, on labour and environmental, including climate change aspects, as well as their inter-linkages.”<sup>31</sup>

A third round of week-long negotiations took place in December 2013, in which, according to the European Commission, “negotiators made progress on the three core parts of the TTIP – market access, regulatory aspects and rules.”<sup>32</sup> On the environmental front, negotiations related to trade rules included discussions on access to energy and raw materials as well as environmental protection.<sup>33</sup> EU Chief Negotiator Ignacio Garcia Bercero stressed that talks are proceeding smoothly, saying, “...we remain on track to deliver an ambitious trade and investment deal which will boost our economies, deliver growth and, more importantly, create jobs for both Europeans and Americans at a time when they’re most needed.”<sup>34</sup> Still, EU negotiators have expressed concerns about establishing a balance between Europe’s investment interests and upholding governments’ right to regulate in public interest, including on issues related to the environment, and have called for public consultations on the issue. In fact, a group of 14 advisors from various consumer, labour and business groups was created to help the EU Commission frame the discussions for the negotiations on such topics.<sup>35</sup> According to the European Commission, “no other part of the negotiations is affected by this public consultation and the TTIP negotiations will continue as planned.”<sup>36</sup>

From the perspective of climate change, in addition to the typical provisions on trade, investment, government procurement and intellectual property rights, among others, inserting a chapter on climate change mitigation in such an FTA would be a meaningful and effective way to reduce GHG emissions, since the U.S. and the EU are the second and third largest emitters of GHG, respectively. Such a chapter could promote “trade and investment in environmental goods and services

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<sup>31</sup> See Initial EU Position Paper, *EU-US Transatlantic Trade and Investment Partnership — Trade and Sustainable Development*, EUR. COMMISSION (2013), [http://trade.ec.europa.eu/doclib/docs/2013/july/tradoc\\_151626.pdf](http://trade.ec.europa.eu/doclib/docs/2013/july/tradoc_151626.pdf) [hereinafter EU Position Paper – *Sustainable Dev.*].

<sup>32</sup> See EU Chief Negotiator says EU-US trade deal not about deregulation, as third round of talks end in Washington, EUR. COMMISSION (Dec. 20, 2013), <http://trade.ec.europa.eu/doclib/press/index.cfm?id=1007>.

<sup>33</sup> *Id.*

<sup>34</sup> *Id.*

<sup>35</sup> Press Release, *Expert group to advise European Commission on EU-US trade talks*, EUR. COMMISSION (Jan. 27, 2014), [http://europa.eu/rapid/press-release\\_IP-14-79\\_en.htm](http://europa.eu/rapid/press-release_IP-14-79_en.htm).

<sup>36</sup> See *Commission to consult European public on provisions in EU-US trade deal on investment and investor-state dispute settlement*, EUR. COMMISSION (Jan. 21, 2014), <http://trade.ec.europa.eu/doclib/press/index.cfm?id=1015>.

and climate-friendly products and technologies.”<sup>37</sup> However, both the US and the EU may have differing views on the importance of climate change mitigation provisions in the FTA.

According to Sidley’s International Trade Group, “the bilateral free trade agreements with the Republic of Korea that the European Union (entry into force 1 July 2011) and the United States (entry into force 15 March 2012) concluded are likely to serve as the competing models for the initial proposed texts.”<sup>38</sup> When it comes to the environment, the EU-Korea FTA agreement specifically aims to promote sustainable development in Article 13.1, whereas the US-Korea FTA recognizes “the right of each Party to establish its own levels of environmental protection and its own environmental development priorities, and to adopt or modify accordingly its environmental laws and policies,” while striving for “high levels of environmental protection.”

The TTIP presents an important opportunity to go beyond the usual platitudes and include concrete and meaningful text specifically focusing on climate change mitigation. In this regard, the EU’s initial TTIP position paper on trade and sustainable development<sup>39</sup> is on the right track. However, recent media and articles published by NGOs point to the fact that the TTIP could diminish the role of current and future EU legislation on climate change mitigation.<sup>40</sup> It remains to be seen how meaningfully the final agreement deals with climate change.

### *B. The Trans-Pacific Partnership*

The Trans-Pacific Partnership (TPP) is a free trade agreement under negotiation, as of November 2013, amongst 12 countries—Australia, Brunei Darussalam, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, the United States, and Vietnam.<sup>41</sup> China is not yet a party to the TPP, which diminishes the effectiveness and value of a potential large FTA with a strong climate chapter. To make the TPP an effective avenue toward achieving climate mitigation goals, having China on board would be a necessary condition as China is responsible for over 20 per cent of global GHG emissions. It is the aim of the TPP negotiators to

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<sup>37</sup> EU Position Paper – *Sustainable Dev.*, *supra* note 31 at 3.

<sup>38</sup> See *International Trade – Transatlantic Trade and Investment Partnership*, SIDLEY AUSTIN LLP, <http://www.sidley.com/international-trade-transatlantic-trade-and-investment-partnership>.

<sup>39</sup> See EU Position Paper – *Sustainable Dev.*, *supra* note 31.

<sup>40</sup> See Public Citizen, *TAFETA: A Backdoor Plan to Roll Back Clean Energy Policies*, available at <http://www.citizen.org/documents/TAFETA-climate-factsheet.pdf>.

<sup>41</sup> As of November 2013, there has been talk of South Korea entering into preliminary negotiations to join. See *South Korea to have preliminary talks on joining TTP – Yonhap* REUTERS (July 4, 2013), <http://uk.reuters.com/article/2013/11/29/uk-korea-trade-tpp-idUKBRE9AS06F20131129> [hereinafter *South Korea - TPP*].

eventually expand the agreement to include all 21 APEC economies, which includes China. The decision to join the TPP remains up to China.<sup>42</sup> Even without China, the TPP will establish an impressive free-trade bloc, spanning a region that composes nearly 40 percent of the global economy.<sup>43</sup> It thus poses an important opportunity to address concerns related to climate change and sustainable development, and can serve as an important model in this regard for future such mega trade agreements.

A meaningful outcome on environmental issues will ensure that the agreement appropriately addresses the link between trade and climate change, and enhances the mutual supportiveness between these two fields.<sup>44</sup> The TPP countries are in agreement that there should be effective provisions in the TPP on trade-related climate change issues that would help reinforce environmental protection.<sup>45</sup>

Discussions are also taking place to create an effective institutional arrangement to administer the implementation of the TPP and a cooperation framework to address capacity-building needs.<sup>46</sup> Other environment-related issues under discussion are marine fisheries, biodiversity, and environmental goods and

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<sup>42</sup> *Kirk Hopes for TPP Progress by June, Highlights Ultimate Expansion*, INSIDE U.S. TRADE (May 12, 2012).

<sup>43</sup> See *South Korea – TPP*, *supra* note 36.

<sup>44</sup> However, there has been criticism regarding the lack of transparency in TPP negotiations. A group of law professors wrote a letter to USTR Ambassador Kirk in May 2012, in which, among other things, the following was argued:

“[O]ur concerns flow from the now-established observation that “trade” agreements no longer focus exclusively, or perhaps even predominantly, on the regulation of trade. Rather, the agreements increasingly propose international law standards that bind the legislative branch to change, or lock in place, domestic regulatory decisions. Democratic values demand that, at minimum, the promulgation of such restrictions on domestic law making processes afford the full range of participatory inputs as similar initiatives at the domestic level.”

Letter from various Professors of Law to Ambassador Ron Kirk, Office of the United States Trade Representative (May 9, 2012), *available at* <http://infojustice.org/wp-content/uploads/2012/05/Transparencyletter-5-9-pdf.pdf>.

The response to the letter by Ambassador Kirk can be read at <http://infojustice.org/archives/21385>.

<sup>45</sup> See OFFICE OF THE UNITED STATES TRADE REPRESENTATIVE, *OUTLINES OF THE TRANS-PACIFIC AGREEMENT*, *available at* <http://www.ustr.gov/about-us/press-office/factsheets/2011/november/outlines-trans-pacific-partnership-agreement> [hereinafter USTR, *OUTLINES – TPP*]. See also *Climate in Asia and the Pacific: A Synthesis of APN Activities*, (Michael Manton et al., eds., Asia Pacific Network for Global Change Research, 2011).

<sup>46</sup> USTR, *OUTLINES – TPP*, *supra* note 45.

services.<sup>47</sup> Moreover, the United States Trade Representative's (USTR) Office of Environment and Natural Resources has stated that the US government "is seeking a TPP environment chapter that will facilitate increased regional trade while supporting and enhancing environmental protection and conservation efforts in the Asia-Pacific region." A USTR green paper<sup>48</sup> on conservation and the TPP does specify the agreement's goals related to wildlife, marine fisheries and timber, however, there is no mention of climate change.

On the whole, therefore, it seems matters related to climate change are not yet a priority in the TPP negotiations,<sup>49</sup> on the grounds that other political issues on the agenda are more pressing for countries such as the U.S.<sup>50</sup> Nevertheless, leaders of APEC agreed in September 2012 to liberalize over 50 environmental goods by 2015, including solar panels and wind turbines.<sup>51</sup> The agreement was that applied tariff rates would be cut to five per cent or less by 2015.

### III. ENERGIZING THE DISCUSSION

No discussion of climate change and sustainable development can fail to address energy, which plays a crucial role both in climate change mitigation as well as in achieving sustainable development goals. In this context, our world faces two major challenges relating to energy. First, almost one person in five on the planet still lacks access to electricity,<sup>52</sup> and almost three billion people still use wood, coal, charcoal or animal waste, none of which are "clean" fuels, for cooking and heating.<sup>53</sup> Not only are such traditional energy sources inefficient and unreliable, they also have serious consequences for people's health. Combined with the fact

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<sup>47</sup> *Id.* See also Policy Brief, *Opening Markets for Environmental Goods and Services*, ORG. FOR ECO. COOP & DEV. (Sept. 2005).

<sup>48</sup> See OFFICE OF THE UNITED STATES TRADE REPRESENTATIVE, USTR GREEN PAPER ON CONSERVATION AND THE TRANS-PACIFIC PARTNERSHIP, <http://www.ustr.gov/about-us/press-office/fact-sheets/2011/ustr-green-paper-conservation-and-trans-pacific-partnership>

<sup>49</sup> *TPP Countries Aim to Close Multiple Chapters, but May Leave Key Issues*, INSIDE U.S. TRADE (July 6, 2012).

<sup>50</sup> *U.S., TPP Partners Not Likely to Tackle Tough Issues Prior to U.S. Elections*, INSIDE U.S. TRADE (July 6, 2012).

<sup>51</sup> For a list of the environmental goods, see *Annex C – APEC List of Environmental Goods*, ASIA-PACIFIC ECONOMIC COOPERATION, (Sept. 8-9, 2012), [http://www.apec.org/Meeting-Papers/Leaders-Declarations/2012/2012\\_aelm/2012\\_aelm\\_annexC.aspx](http://www.apec.org/Meeting-Papers/Leaders-Declarations/2012/2012_aelm/2012_aelm_annexC.aspx).

<sup>52</sup> See *Universal Energy Access*, SUSTAINABLE ENERGY FOR ALL, <http://www.se4all.org/our-vision/our-objectives/universal-energy/>.

<sup>53</sup> See *Indoor air pollution and health*, WORLD HEALTH ORG. (Sept. 2011), <http://www.who.int/mediacentre/factsheets/fs292/en/> [hereinafter *Indoor air pollution*].

that they mainly use three-stone fires and traditional mud stoves with no functioning chimneys, the resulting pollution levels are dangerous.

According to the World Energy Outlook, “As a consequence of the pollutants emitted by these devices, pollution levels inside households cooking with biomass are often many times higher than typical outdoor levels, even those in highly polluted cities.”<sup>54</sup> The World Health Organization estimates that “nearly 2 million people die prematurely from illness attributable to indoor air pollution from household solid fuel use; Nearly 50% of pneumonia deaths among children under five are due to particulate matter inhaled from indoor air pollution; more than 1 million people a year die from chronic obstructive respiratory disease (COPD) that develop[sic] due to exposure to such indoor air pollution.”<sup>55</sup> In fact, the number of premature deaths from household air pollution is greater than the number of premature deaths from malaria or tuberculosis.<sup>56</sup> With such serious repercussions for human health and the environment, it is no wonder that the lack of modern energy services poses a major obstacle to sustainable development, and, according to the United Nations (UN), it “is a major barrier to eradicating poverty and building shared prosperity.”<sup>57</sup>

The other main global energy challenge is that, in places with access to modern energy services, the lion’s share of energy usage stems from fossil fuels. In fact, the latest available data compiled by the International Energy Agency (IEA) indicate that conventional energy sources (fossil fuels such as oil, natural gas, and coal) made up 81.1% of the mix, while renewable energy sources made up only 13.2% of the global energy supply mix in 2010.<sup>58</sup> Burning fossil fuels, of course, results in emissions of GHGs such as carbon dioxide, and this contributes to global warming. Exploring alternative energy options, energy that is clean and efficient, is crucial.

In this sense, the two major energy challenges in the world today are closely tied, and the only way forward is to increase access to energy for all, but energy that is clean, efficient, and renewable. Continuing in the current vein is not an option.

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<sup>54</sup> See *World Energy Outlook – Energy Poverty & Health (WHO Collaboration)*, INT’L ENERGY AGENCY, [www.worldenergyoutlook.org/resources/energydevelopment/energypoverthyhealthwhocollaboration](http://www.worldenergyoutlook.org/resources/energydevelopment/energypoverthyhealthwhocollaboration) [hereinafter *World Energy Outlook*].

<sup>55</sup> See *Indoor air pollution*, *supra* note 53.

<sup>56</sup> See *World Energy Outlook*, *supra* note 54.

<sup>57</sup> See *Our Vision*, SUSTAINABLE ENERGY FOR ALL, <http://www.se4all.org/our-vision/>.

<sup>58</sup> Figures calculated based on data as these appear in International Energy Agency, *2012 Key World Energy Statistics*, 6 OECD/IEA, 2012. During 2010, the global primary energy supply was 12,717 Million tons of oil equivalent (Mtoe). During 1973, it stood at 6,107 Mtoe.

The UN is calling for *sustainable energy for all*, a vision based on three interlinked objectives:

1. Ensure universal access to modern energy services.
2. Double the global rate of improvement in energy efficiency.
3. Double the share of renewable energy in the global energy mix.<sup>59</sup>

This part examines two trade-related mechanisms for achieving these energy goals: (i) better governance of global energy trade—governance that promotes equitable access to resources and streamlined, efficient processes in the energy trading system and (ii) strong trade support for green energy options such as renewable energy. This part examines the potential of both avenues for moving the climate mitigation agenda forward overall.

#### *A. Stronger governance of energy trade*

The nexus between energy and climate change encompasses a range of trade issues such as clean energy subsidies, carbon taxes, and border adjustment for carbon emissions. Thus far, the overall approach towards addressing the role of energy in climate change mitigation has involved finding incentives to reduce fossil fuel emissions. However, a more holistic approach towards achieving greener energy may prove more effective in the long run. In other words, arguably, we need more cohesive energy trade governance. International trade in energy spans a number of key policy areas, including trade, investment, economic development, and environmental protection, and currently, the international community does not provide cohesive governance over it.<sup>60</sup>

On the contrary, governance of energy trade arises by default, rather than design, through the *ad hoc* interplay of different aspects of the international economic system. This fragmented and multi-layered trade in energy governance regime for energy trade is perhaps not conducive to global energy security. Moreover, a more cohesive global governance system for energy trade would facilitate energy flows, avoid unnecessary legal disputes and provide predictability. This will require a thorough assessment of the elements, workings, and evolution of the current global energy trade governance regime.

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<sup>59</sup> See *Sustainable Energy for All: An Overview*, SUSTAINABLE ENERGY FOR ALL, <http://www.un.org/millenniumgoals/pdf/SEFA.pdf>.

<sup>60</sup> See generally Rafael Leal-Arcas & Andrew Filis, *The Fragmented Governance of the Global Energy Economy: A Legal-Institutional Analysis*, 6(4) J. WORLD ENERGY L. & BUS. 1, (2013) [hereinafter Leal-Arcas & Filis].

At the international level, there is a patchwork of institutions that may have implications for cross-border energy trade, for example, the WTO, which provides governance over trade within its scope, including energy trade. The WTO does not handle energy commodities any differently from other tradable commodities within its scope. In that sense, it provides energy trade governance by default. Another example is the EU. While the EU lacks the powers of a sovereign actor to diplomatically pursue its energy security in the manner that, say, China or the US may do, it does possess a comprehensive energy policy that is multifaceted and that makes good use of the powers that lie within its competences. Another such institution is the Energy Charter Treaty (ECT),<sup>61</sup> whose principal concerns surround the investment protection and trade aspects of energy between contracting States.<sup>62</sup> Many other institutions exist that provide degrees of governance over aspects of trade in energy at the inter-State level. This patchwork of institutions and regimes amounts to a sort of “accidental” energy trade governance, and presents some areas of overlap. For instance, both the WTO and the ECT have rules that apply to the trade, investment, and environmental-protection aspects of energy. These overlaps, however, in no way amount to cohesive governance of energy trade.

One explanation for the current fragmentation of the global energy trade regime, perhaps, is that it is developing progressively. For instance, in 1947, a number of sovereign actors came together to lay down arrangements for the General Agreement on Tariffs and Trade to provide multilateral trade governance. Some decades later, others came together to adopt the ECT to provide multilateral disciplines mainly for energy investments and, to a lesser extent, for energy trade.

Furthermore, sovereign states engage with one another to the extent that it is in their national interest to do so. Efforts within the EU, for example, to promote its collective energy security may be undermined by disparate energy realities between its members and also by exogenous factors such as global energy market conditions and competition by other global actors. In other words, a number of international institutions and global actors affect the global energy economies. There is an obvious diversity of interests, including conflicts of interests, at both national and international levels, and this plurality of actors and the diversity of energy interests illustrate the complexity present in energy trade governance.

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<sup>61</sup> Energy Charter Treaty, Dec. 17, 1994, 2080 U.N.T.S. 95.

<sup>62</sup> See generally REGULATION OF ENERGY IN INTERNATIONAL TRADE LAW: WTO, NAFTA, AND ENERGY CHARTER (Yulia Selivanova ed., 2011); THE ENERGY CHARTER TREATY: AN EAST-WEST GATEWAY FOR INVESTMENT AND TRADE (Thomas Wälde ed., 1996) [hereinafter Thomas Wälde].

The role of trade in promoting energy efficiency and raising the share of renewable energy in the global energy mix cannot be overestimated. For example, there is potential to incorporate energy-efficient provisions within regional and multilateral trade agreements, there are trade incentives to better manage competition and invest in technologies such as up-to-date energy grids and possibilities for importing/exporting cutting-edge technologies through trade and bilateral cooperation agreements.

In this context, numerous bilateral arrangements on energy and climate exist. In fact, since the faltering of a global climate treaty, bilateral agreements aiming at reducing GHG emissions have increased exponentially. Examples of such agreements are the US-Mexico Bilateral Framework on Clean Energy and Climate Change or the Australia-EU Partnership Framework. These bilateral arrangements promote trade relations between parties while incorporating approaches to clean energy promotion and climate change mitigation. The negotiations of the TTIP are significant in this regard. An initial EU position paper on raw materials and energy acknowledges that the multilateral trade system would “benefit from a stronger set of rules in the area of energy and raw materials,” and suggests that the TTIP could make an important contribution to the development of this process. Areas where specific raw material and energy provisions could be developed include transparency, market access and non-discrimination, trade in sustainable energy, competitiveness, as well as energy security.<sup>63</sup>

It is worth determining to what extent such bilateral arrangements, as well as current energy trade rules (at WTO, Energy Charter Treaty, and UNFCCC levels, for example), enhance sustainable energy, and therefore climate change mitigation goals. If the TTIP or TPP prove successful in enhancing trade relations while promoting sustainable energy, could their provisions be applied to a multilateral agreement on energy trade? Might an overarching General Agreement on Trade in Energy, or a Sustainable Energy Trade Agreement, be the next logical step?<sup>64</sup> Any such agreement would need to have a strong “environmental voice” so as to avoid merely facilitating energy flows without factoring in environmental impacts and promotion of more efficient and renewable energy. In other words, to quote Pascal Lamy, “trade regulations are not, and cannot be, a substitute for environmental

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<sup>63</sup> Initial EU Position Paper, *EU-US Transatlantic Trade and Investment Partnership — Raw Materials and Energy*, EUR. COMMISSION (EU Directorate-General for Trade, 2013), [http://trade.ec.europa.eu/doclib/docs/2013/july/tradoc\\_151624.pdf](http://trade.ec.europa.eu/doclib/docs/2013/july/tradoc_151624.pdf).

<sup>64</sup> For more information on proposals regarding a Sustainable Energy Trade Agreement and Sustainable Energy Trade Initiatives, see *Fostering Low Carbon Growth: The Case for a Sustainable Energy Trade Agreement*, (ICTSD Global Platform on Climate Change, Trade & Sustainable Energy, Nov. 2011), <http://ictsd.org/downloads/2011/12/fostering-low-carbon-growth-the-case-for-a-sustainable-energy-trade-agreement.pdf>.

regulations”.<sup>65</sup> Any global energy trade agreement aiming at enhancing energy security along with environmental protection would need strong input from a major environmental forum such as the UNFCCC.

*B. WTO’s treatment of renewable energy*<sup>66</sup>

As mentioned earlier, the majority of our world’s energy consumption is derived from fossil fuels. Diversifying the global energy supply mix in order to make greater use of renewable sources could have far-reaching geo-economic and geo-strategic implications,<sup>67</sup> including: the containment of GHG emissions to levels that could prevent more costly future damage; the conservation of our planet’s ecosystems and protecting the welfare of the human, animal, and plant populations they sustain; greater energy security for those States and groups of States that are net energy importers and foreign relations that are less influenced by energy considerations. Trade can play a crucial role in this context, given that trade policy can be designed to promote and support renewable technology. However, such policies have also caused an increasing number of disputes at the WTO. Arguably, therefore, there is a need to examine WTO rules and work towards removing any systemic “obstacles” to the scale-up and take-up of renewable energy.

Certain measures, such as feed-in tariff schemes for renewable energy, have been the subject of dispute at the WTO, with their consistency with the Subsidies and Countervailing Measures Agreement<sup>68</sup>, as well as national treatment obligations under the General Agreement on Tariffs and Trade<sup>69</sup> and the Agreement on

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<sup>65</sup> Lamy – Doha, *supra* note 17.

<sup>66</sup> This part draws from Rafael Leal-Arcas & Andrew Filis, *Certain Legal Aspects of the Multilateral Trade System and the Promotion of Renewable Energy*, in INTERNATIONAL ECONOMIC LAW AFTER THE CRISIS: *A Tale of Fragmented Disciplines* (Chin Leng Lim & Bryan Mercurio, eds., forthcoming).

<sup>67</sup> See Summary for Policymakers, in IPCC Special Report on Renewable Energy Sources and Climate Change Mitigation 4-26 (IPCC, Ottmar Edenhofer, et al., eds., 2011) for an exposition of the potential benefits of increasing the proportion of renewables in the global supply energy mix. See also Anurabha Ghosh & Himani Gangania, *Governing Clean Energy Subsidies: What, Why and How Legal?* 11-18 (ICTSD Global Platform on Climate Change, Trade & Sustainable Energy, 2012) for an exposition of the various arguments for the promotion of renewable energy [hereinafter Ghosh & Gangania].

<sup>68</sup> Agreement on Subsidies and Countervailing Measures, Marrakesh Agreement Establishing the World Trade Organization, Apr. 15, 1994, Annex 1A, in WTO SECRETARIAT, THE LEGAL TEXTS: THE RESULTS OF THE URUGUAY ROUND OF MULTILATERAL TRADE NEGOTIATIONS 231 (1999) [hereinafter SCM Agreement].

<sup>69</sup> General Agreement on Tariffs and Trade 1994, Marrakesh Agreement Establishing the World Trade Organization, Apr. 15, 1994, Annex 1A, in WTO SECRETARIAT, THE LEGAL TEXTS: THE RESULTS OF THE URUGUAY ROUND OF MULTILATERAL TRADE NEGOTIATIONS 17 (1999), 1867 U.N.T.S. 187.

Trade-Related Investment Measures<sup>70</sup> being called into question. With the share of renewable energy ('renewables') close to 20 per cent of global final consumption,<sup>71</sup> investment and innovation in the renewables sector are only set to increase. Is the WTO's "nature as a body focused on negotiated outcomes"<sup>72</sup> a plausible or effective mechanism for addressing disputes that are likely to arise with increasing frequency?

In spite of the associated controversy, in recent years, there has been an increase in subsidies aimed at promoting renewable energy. The global figures for subsidies in the renewable energy sector increased from USD 39 billion in 2007 to USD 66 billion by 2010.<sup>73</sup> While this increase is a positive sign, the figures are eclipsed by the enormity of fossil-fuel-related subsidies that stood at USD 409 billion in 2010.<sup>74</sup> The IEA projects that by 2035, under its various policy scenarios, should renewables subsidies rise to USD 250 billion, a variety of positive developments could take place, such as onshore wind becoming competitive by 2020 in the EU and by 2030 in China,<sup>75</sup> and the containment of up to 3.4 gigatons, that is, 3.4 billion tons of energy-related carbon dioxide when compared with the current total energy supply fuel mix.<sup>76</sup>

In the fragmented world of renewable energy governance, the WTO has an important role to play, as complying with WTO policies can be a game changer in promoting a shift to renewables. The WTO is also one of the few truly effective multilateral institutions when it comes to the enforcement of its legal mandate, thanks to an efficient dispute resolution system. Further, energy is not comparable to merely any tradable commodity; it is acutely needed and a source of great geopolitical tension and insecurity. The dynamics within which the WTO operates helps it to address this crucial political issue to a great extent. While trade is one of the many cards in global energy governance, the incentive it creates across the board has broad implications for global energy security and governance.

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<sup>70</sup> Agreement on Trade-Related Investment Measures, Marrakesh Agreement Establishing the World Trade Organization, Apr. 15, 1994, Annex 1A, in WTO SECRETARIAT, THE LEGAL TEXTS: THE RESULTS OF THE URUGUAY ROUND OF MULTILATERAL TRADE NEGOTIATIONS 143 (1999), 1868 U.N.T.S. 186.

<sup>71</sup> *Renewable Energy—Trends, Challenges and Opportunities*, (United Nations Env't Programme, 2013), available at [www.unep.org/greeneconomy/Portals/88/GETReport/pdf/Chapitre%206%20Renewable%20Energy.pdf](http://www.unep.org/greeneconomy/Portals/88/GETReport/pdf/Chapitre%206%20Renewable%20Energy.pdf).

<sup>72</sup> Marie Wilke, *Feed-in Tariffs for Renewable Energy and WTO Subsidy Rules*, (ICTSD Trade & Env't Papers, Issue Paper No. 4, Nov. 2011) [hereinafter Marie Wilke]

<sup>73</sup> *World Energy Outlook factsheet 6* (Int'l Energy Agency, 2012).

<sup>74</sup> *Id.*

<sup>75</sup> *Id.*

<sup>76</sup> *Id.*

Trade in renewable energy entails both production and transmission aspects and therefore involves the regulation of both goods and services.<sup>77</sup> The technology demands of the energy sector also make intellectual property issues vital, which are a component of the WTO system under the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS). Therefore, the institutional mechanism of the WTO has a great role to play in securing global green energy governance. Moreover, WTO members could get together to remove barriers to trade in renewable energy technologies.

### 1. Trade Policy shapes Green Energy Governance

Energy demands have rapidly increased since the time the General Agreement on Tariffs and Trade (GATT) was concluded in 1947 and the same is true for energy prices. For example, a barrel of crude oil was as cheap as US\$20 at present prices.<sup>78</sup> In spite of this, there continues to be an absence of a trade agreement specific to the energy sector.<sup>79</sup> However, while the WTO's role in conventional energy security<sup>80</sup> is considered 'incidental, though not inconsiderable,'<sup>81</sup> it has a substantial role to play in the context of renewable energy. Considered against the background of an established framework (for example, most energy distribution systems are catered to conventional energy sources such as gas and oil) and a well-supported framework (for instance, through subsidies) within which conventional energies

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<sup>77</sup> While energy-containing resources such as coal, wind, *et cetera*, can be classified as goods, the treatment of 'energy' is debatable. For example, Gabrielle Marceau states that "[w]e define energy as the action (product and process) through which energy-containing natural resources are transformed and consumed in response to a series of societal and individual human requirements for heat and power." See Gabrielle Marceau, *The World Trade Organization in the emerging energy governance debate*, in World Trade Organization, *World Trade Report 2010*, available at [http://www.wto.org/english/res\\_e/publications\\_e/wtr10\\_forum\\_e/wtr10\\_marceau\\_e.htm](http://www.wto.org/english/res_e/publications_e/wtr10_forum_e/wtr10_marceau_e.htm). However, energy can exist in various forms such as electricity or nuclear power. Electricity, for example, is classified as a good under the Harmonised System Nomenclature [Thomas Cottier et al., *Energy in WTO law and policy*, (World Trade Org., Individual Project No. 6) available at [http://www.wto.org/english/res\\_e/publications\\_e/wtr10\\_forum\\_e/wtr10\\_7may10\\_e.pdf](http://www.wto.org/english/res_e/publications_e/wtr10_forum_e/wtr10_7may10_e.pdf)] and so is the generation of electricity [CHRISTINA VOIGT, SUSTAINABLE DEVELOPMENT AS A PRINCIPLE OF INTERNATIONAL LAW: RESOLVING CONFLICTS BETWEEN CLIMATE MEASURES AND WTO LAW, 218 (2009)].

<sup>78</sup> Pascal Lamy, Former Director-General, World Trade Org., Speech at the 20<sup>th</sup> World Energy Congress, Rome, Italy: Doha Round Will Benefit Energy Trade, (Nov. 15, 2007), available at [http://www.wto.org/english/news\\_e/sppl\\_e/sppl80\\_e.htm](http://www.wto.org/english/news_e/sppl_e/sppl80_e.htm).

<sup>79</sup> Pascal Lamy has emphasized the need for considering energy a separate sector. See *id.*

<sup>80</sup> Conventional energy refers to all forms of fossil fuel based energy, as opposed to renewable sources of energy.

<sup>81</sup> Leal-Arcas & Filis, *supra* note 60.

operate, shifting to renewable energy requires high incentives, which can be provided by WTO-compatible policies for renewables.<sup>82</sup>

The need to shift focus from fossil-based fuels and divert attention to green and sustainable forms of energy has been in vogue for some time.<sup>83</sup> The United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol established the requirement of reducing greenhouse gas (GHG) emissions for sustainable environmental protection “in accordance with [...] common but differentiated responsibilities.”<sup>84</sup> The policy tools to achieve this include enhancing energy efficiency; the promotion of renewable energy, carbon sequestration and green technology; and promoting sectoral reforms to encourage GHG emissions reduction.<sup>85</sup> At the national level, countries have set in place various mechanisms to achieve these objectives and move towards renewable energies.<sup>86</sup>

Two common initiatives undertaken at the national level to fulfill GHG emission responsibilities are the internalization of carbon emission costs and the introduction of green energy production support policies. However, as Peter Mandelson points out, a key imperative behind the Kyoto Protocol is the creation of an open global market and greater investment in green technologies,<sup>87</sup> which

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<sup>82</sup> According to Yvo de Boer, if one takes into account the broader environmental costs of using energy from fossil fuels, generating energy from renewables is actually cheaper in the long run. Information gathered from Yvo de Boer, *Can the international climate policy impasse be broken?* (University College London Institute for Sustainable Resources Public Lecture, London, Dec. 2, 2013).

<sup>83</sup> Joe Leahy, *Brazil: Wind gathers force in mix of renewable sources*, FINANCIAL TIMES, May 15, 2013, <http://www.ft.com/cms/s/0/e1cd2bf0-b0d6-11e2-9f24-00144feabdc0.html#axzz2mjExW3q>.

<sup>84</sup> United Nations Framework Convention on Climate Change art. 3.1, May 9, 1992, 1771 U.N.T.S. 107.

<sup>85</sup> Kyoto Protocol to the United Nations Framework Convention on Climate Change art. 2.1(a), Dec. 11, 1997, 2303 U.N.T.S. 148.

<sup>86</sup> Nelson Hübner, *Brazil's Wind Power Auction Spurs More Clean Energy Development*, RENEWABLE ENERGY WORLD (Dec. 29, 2009), <http://www.renewableenergyworld.com/rea/news/article/2009/12/brazils-wind-power-auction-spurs-more-clean-energy-development>; *See also Government applauded over £40bn renewable energy support plans*, CLICKGREEN.ORG (Dec. 4, 2013), <http://www.clickgreen.org.uk/news/national-news/124070-government-supported-over-40bn-renewable-energy-support-plans.html>.

<sup>87</sup> Peter Mandelson, Eur. Trade Commissioner, Speech at the Conference organized by Confederation of Norwegian Enterprise and EC Delegation: *Energy security and climate change – What role for trade policy?* (Feb. 9, 2007), [http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=3&cad=rja&ved=0CEUQFjAC&url=http%3A%2F%2Feuropa.eu%2Frapid%2Fpress-release\\_SPEECH-07-](http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=3&cad=rja&ved=0CEUQFjAC&url=http%3A%2F%2Feuropa.eu%2Frapid%2Fpress-release_SPEECH-07-)

cannot happen in isolation. This has also been highlighted in the Rio+20 outcome document, “The Future We Want,” which highlights “the role of foreign direct investment, international trade and international cooperation in the transfer of environmentally sound technologies.”<sup>88</sup>

A clear set of rules in energy trade at the multilateral level (and also, realistically, at a bilateral level) will help energy-producing countries to find newer markets and help energy-consuming countries to find cross-border resources, thus creating greater energy efficiency, interdependence and stability. Implementing such measures within the WTO, therefore, is important firstly to promote national energy security and, more importantly, to create a uniform approach towards achieving global green energy security.

## 2. Renewable Subsidies: Changing the Playing Field

Renewable energy forms a small component of the global energy mix. However, considering the environmental repercussions of using energy derived from fossil fuels, as well as the volatility of the conventional energy market, it makes sense to reduce the consumption of fossil fuels and redirect efforts towards deriving energy from renewable sources. Current high production costs, however, are an impediment and in the absence of support mechanisms, renewable energy production is unprofitable, such as the case of solar panels. Further, fossil fuels enjoy more than one sixth the level of renewable energy subsidies,<sup>89</sup> which makes a robust subsidy system for renewables increasingly important, especially when we are confronted with a situation where, without subsidies, a country/industry cannot compete.

In an effort to address these challenges, governments across the world have introduced renewable energy feed-in tariffs/feed-in tariffs (FITs) to improve green energy efficiency, increase production, and advance research and development in green technologies. Further, by supporting and promoting renewable energy technology, new markets are created, along with new and sustainable jobs.

This begs the question: what are FITs? In a sense, they can be explained as a premium, generally above the market rate, provided to green energy generators,

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<sup>88</sup> G.A. Res. 66/288, ¶ 271, U.N. Doc. A/RES/66/288 (July 27, 2012).

<sup>89</sup> *World Energy Outlook 2012*, INT’L ENERGY AGENCY (Nov. 12, 2013), *available at* <http://www.worldenergyoutlook.org/resources/energysubsidies/>.

with an assurance to purchase electricity.<sup>90</sup> They are essentially a purchase guarantee agreement between the government and the energy producers. Therefore, FITs may be deemed as a government subsidy under Article 1 of the Agreement on Subsidies and Countervailing Measures (SCM) due to their providing a ‘financial contribution.’ However, the issue of subsidies under the SCM Agreement is not that simple and requires the fulfillment of complex conditions set out in the SCM Agreement.

### 3. Are Feed-in Tariffs Subsidies?

To classify as a subsidy, first the scheme must be a ‘financial contribution’ under Article 1.1(a)(1) of the SCM Agreement. Willkie has identified three ways in which FITs qualify as subsidies under Article 1 of the SCM Agreement.<sup>91</sup> When the ‘financial contribution’ is in the form of public funds directed to execute the FIT, it is a subsidy under Article 1.1(a)(1)(iii) of the SCM Agreement, where a program is financed by government but executed by a private body, it classifies as a subsidy under Article 1.1(a)(1)(iv), first clause of the SCM Agreement and where the private body executes the FIT and the government raises resources through reallocation of different costs, it is a subsidy under Article 1.1(a)(1)(iv) second clause of the SCM Agreement.<sup>92</sup>

Further, a subsidy under the SCM Agreement can be provided by either a public body or a private body performing functions ‘normally...vested in the government’ and implementing ‘practices normally followed by governments.’<sup>93</sup> As the Appellate Body in the *US – Anti-Dumping and Countervailing Duties* case<sup>94</sup> clarifies, it is not just ‘control,’ but exercise of ‘relevant authority and responsibility’<sup>95</sup> that determines whether a body is public.<sup>96</sup> Therefore, private bodies deemed public are limited to the ones empowered to direct and entrust in similar capacity as the government, subject to functions which the government would perform under ‘normal’ conditions.<sup>97</sup> This differentiation becomes

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<sup>90</sup> *Feed-in tariff*, INVESTOPEDIA.COM, <http://www.investopedia.com/terms/f/feed-in-tariff.asp>.

<sup>91</sup> Marie Wilke, *supra* note 72.

<sup>92</sup> *Id.*

<sup>93</sup> SCM Agreement, *supra* note 71, art. 1.1(a)(1)(iv).

<sup>94</sup> Appellate Body Report, *United States - Definitive Anti-Dumping and Countervailing Duties on Certain Products from China*, WT/DS379/AB/R (Mar. 11, 2011).

<sup>95</sup> *Id.* ¶ 294.

<sup>96</sup> *Id.*

<sup>97</sup> Robert Howse argues that this ‘normal’ function is not a delegation of governmental power, but a regulation of market behavior and transactions. See Robert Howse, *Climate Mitigation Subsidies and the WTO Legal Framework: A Policy Analysis*, (Int’l Institute for Sustainable Dev., May 2010),

important when one considers, for example, the *Canada - Renewables* cases.<sup>98</sup> In these jointly decided cases, the Ontario Power Authority (OPA), acting under the mandate of the Ontario Ministry of Energy and Infrastructure,<sup>99</sup> was entrusted with the responsibility of administering the FIT program through a standard set of rules, standard contracts and standard pricing.<sup>100</sup> However, it did not have the power to structure the program or direct private bodies. Moreover, OPA was neither a crown corporation, nor a part of the Ministry of Energy or a public body as per the Ontario Ministry of the Environment,<sup>101</sup> even though most of the public regards OPA as a public body.<sup>102</sup> Therefore, in spite of retaining the control feature associated with earlier definitions of public bodies, the crucial element of authority was missing. Although OPA was considered a public body in this case, it creates a potentially dicey situation for the future.

The second requirement for considering a measure a subsidy is the occurrence of a 'benefit,'<sup>103</sup> which implies any treatment that is more favorable than would be offered under normal conditions.<sup>104</sup> FIT's guarantee electricity purchase with prices above market standards and unnaturally long contractual durations. Both of these guarantees go beyond normal market conditions and therefore account as benefits. However, it is worth bearing in mind that the market may already be distorted in the industry where the subsidy is offered. Fossil-fuel markets traditionally have been highly subsidized, so, in a sense, renewable-energy subsidies offset these existing market distortions.<sup>105</sup> Additionally, the advantage of conventional electricity is that the electricity grid is modelled to its nature and integrating

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[http://www.iisd.org/pdf/2009/bali\\_2\\_copenhagen\\_subsidies\\_legal.pdf](http://www.iisd.org/pdf/2009/bali_2_copenhagen_subsidies_legal.pdf) [hereinafter Howse – *Climate Mitigation Subsidies*].

<sup>98</sup> Appellate Body Report, *Canada – Certain Measures Affecting The Renewable Energy Generation Sector*, WT/DS412/AB/R and *Canada – Measures Relating to the Feed-in Tariff Program*, WT/DS426/AB/R (May 6, 2013) [hereinafter *Canada – Renewable Energy & Feed-in-Tariff*]. The Appellate Body report contains both cases *in tandem*.

<sup>99</sup> Ontario Ministry of Energy and Infrastructure FIT Directive, Sept. 14, 2009, [http://www.powerauthority.on.ca/sites/default/files/page/15420\\_FIT\\_Directive\\_Sept\\_24\\_09.pdf](http://www.powerauthority.on.ca/sites/default/files/page/15420_FIT_Directive_Sept_24_09.pdf).

<sup>100</sup> *Canada – Renewable Energy & Feed-in-Tariff*, *supra* note 91, ¶ 7.67.

<sup>101</sup> Annual Report of the Environmental Commissioner of Ontario, *Reconciling Our Priorities*, 148 (2006-7), available at [http://www.eco.on.ca/uploads/Reports%20-%20Annual/2006\\_07/2007su.pdf](http://www.eco.on.ca/uploads/Reports%20-%20Annual/2006_07/2007su.pdf).

<sup>102</sup> *Id.*

<sup>103</sup> SCM Agreement, *supra* note 68, art 1.1(b).

<sup>104</sup> SCM Agreement, *supra* note 68, art 14.

<sup>105</sup> See for instance Alan Sykes, *The questionable case for subsidies regulation: A comparative perspective* 24 (Stanford Law and Economics Olin Working Paper No. 380).

renewables into the existing electricity grid is a challenge in terms of cost and technological updates.<sup>106</sup>

The *Canada — Renewables* cases also provide an interesting pointer in this regard. The Appellate Body (AB) emphasized the need for a market benchmark in determining a ‘benefit.’ The AB stated that both the demand and supply sides had to be considered for determining the relevant market against which such benefit benchmark is to be decided.<sup>107</sup> Pointing to the specific case, the AB stated that the governmental action led to the creation of a renewable market and thus the governmental action was not a subsidy as, without such intervention, the renewable-energy market would not exist in the first place.<sup>108</sup> The AB acknowledged the sovereign right to create an energy mix in reflection of long-term energy security policies.<sup>109</sup> While this decision potentially acknowledges energy security as an acceptable policy consideration, it simultaneously opens other trapdoors. Considering the demand side, if renewable and conventional energies are considered substitutable products, this may create new demands for subsidizing harmful conventional forms of energy other than oil and gas (e.g., shale gas) that may be deemed to require governmental support due to the high initial operational costs. This situation would be detrimental to renewable energy security in the long run as the introduction of environmentally harmful subsidies for conventional, polluting forms of energy over subsidies for clean energy would reduce the level of renewables in the energy mix. A better outcome would have been to introduce cleaner energy targets and thus be in line with the sustainable development objective found in the preamble of the Marrakesh Agreement.

Under the SCM Agreement, three forms of subsidies exist: prohibited,<sup>110</sup> actionable,<sup>111</sup> and non-actionable.<sup>112</sup> Subsidies are prohibited if they fall with any of the two conditions provided under Article 3 of the SCM Agreement. According to Article 5 of the SCM Agreement, actionable subsidies are subsidies which are not prohibited, but cause adverse effects to the interests of other WTO members. Further, Article 8 of the SCM Agreement considers the case of non-actionable subsidies.<sup>113</sup> While prohibited subsidies are automatically ‘specific’ as they contain a

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<sup>106</sup> *Renewable Energy and Electricity*, WORLD NUCLEAR ASSOCIATION, available at <http://www.world-nuclear.org/info/Energy-and-Environment/Renewable-Energy-and-Electricity/>.

<sup>107</sup> *Canada — Renewable Energy & Feed-in-Tariff*, *supra* note 98, ¶ 5.185.

<sup>108</sup> *Id.* ¶ 5.188.

<sup>109</sup> *Id.* ¶ 5.175.

<sup>110</sup> SCM Agreement, *supra* note 68, Part II.

<sup>111</sup> SCM Agreement, *supra* note 68, Part III.

<sup>112</sup> SCM Agreement, *supra* note 68, Part IV.

<sup>113</sup> Although the SCM Agreement, as originally entered into force, had non-actionable subsidies as one of three categories of subsidies, this category was provisional for five years

local content requirement or export requirement, for a measure to qualify as an actionable subsidy under the SCM Agreement it has to be specifically targeted to particular enterprises or industries and cannot be based on objective criteria.<sup>114</sup> In a plethora of recent cases, protectionist FITs with local content requirements have been prohibited under Article 3 of the SCM Agreement.<sup>115</sup> However, the question remains whether FIT programs without local content can still be classified as subsidies; the AB has not clarified the situation, which creates problems for a transition to a greener energy economy under the WTO, as will be explained later.

Regarding specificity under Article 2 of the SCM Agreement, the language of the FITs assumes importance. Where the FIT scheme is extended to ‘all’ electricity producers who use green energy (even when used in smaller quantities compared to fossil fuels), it would not be a subsidy as, in this case, it would be extended without differentiating between two sectors: one releasing more GHG emissions due to the use of fossil fuels, and the other being the renewable sector, where emissions are negligent or low. This is opposed to the schemes benefit being extended to ‘only’ green source users. Therefore, inclusionary or exclusionary language would play a vital role in determining a ‘subsidy.’ However, the *US - Softwood Lumber IV* case<sup>116</sup> assumes importance in this context. In this case, the Panel noted that “the availability of a subsidy which is limited by the inherent characteristics of the good cannot be considered to have been limited by “objective” criteria in the sense of footnote 2 to Article 2.1 (b) SCM Agreement [...]”<sup>117</sup> While the amount and type of GHG emissions from ‘traditional’ and ‘renewable’ energy may be different, it is not clear whether this suffices for their

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until December 1999, with the possibility of extending its application for a further period (See SCM Agreement, *supra* note 68, art 31). As of 31 December 1999, no consensus had been reached in the WTO’s SCM Committee for such an extension, which means that non-actionable subsidies have phased out. For further explanation of the SCM Agreement, see *Agreement on Subsidies and Countervailing Measures: An Overview*, WORLD TRADE ORGANIZATION, [http://www.wto.org/english/tratop\\_e/scm\\_e/subs\\_e.htm](http://www.wto.org/english/tratop_e/scm_e/subs_e.htm).

<sup>114</sup> The word ‘objective’ has a special connotation under the SCM Agreement. Article 2.1(b), footnote 2 reads: ‘Objective criteria or conditions, as used herein, mean criteria or conditions which are neutral, which do not favour certain enterprises over others, and which are economic in nature and horizontal in application, such as number of employees or size of enterprise.’

<sup>115</sup> See also *EU and Certain Member States – Importation and Marketing of Biodiesel and Measures Supporting the Biodiesel Industry*, WT/DS459; *India — Certain Measures Relating to Solar Cells and Solar Modules*, WT/DS456; *EU and Certain Member States – Renewable Energy Measures*, WT/DS452; *China — Measures concerning wind power equipment*, WT/DS419 (being other recent WTO cases that have dealt with Article 3 of the SCM Agreement).

<sup>116</sup> Panel Report, *United States - Final Countervailing Duty Determination with Respect to Certain Softwood Lumber from Canada*, WT/DS257/R (Aug. 29, 2003) [hereinafter *US-Softwood Lumber*].

<sup>117</sup> *US -Softwood Lumber*, *supra* note 116, ¶ 7.116, footnote 179.

being treated as different industries under WTO jurisprudence. Indeed, in the *Canada — Renewables* cases, the Appellate Body concluded that, in the retail electricity market, conventional and renewable energies are substitutable products.<sup>118</sup> However, considering not only the product itself, but also ancillary concerns like distribution networks, which are distinct for each of these forms of energy, a different conclusion could easily be drawn by another Panel or the Appellate Body. Marie Wilke draws on the decision of the panel in the *US -Upland Cotton* case to state that the determination of specificity is case-specific, which leaves uncertainty in the debate.<sup>119</sup>

In case of actionable subsidies, an adverse effect of the subsidies must finally be demonstrated. Where the complaint is a traditional energy supplier, an adverse effect on the industry would have to be proven. Ironically, the fossil-fuel market is highly distorted, making it a difficult task to demonstrate an adverse effect on prices based on the operation of the FIT program. A detailed factual data analysis is required under Article 6.3 of the SCM Agreement for a reasoned conclusion where a serious prejudice is claimed.<sup>120</sup> In this sense, the FIT is saved by the very evil that it fights.

Therefore, the answer to the question of whether FITs qualify as subsidies under Article 1 of the SCM Agreement is not straightforward and largely dependent on the structure of the FIT in question, unless, of course, the benefits under it are subject to a local content requirement or export restrictions requirement. However, some clarity as to whether they indeed qualify as subsidies may be helpful for policy considerations. If they are subsidies, it may be possible to negotiate a different treatment for sustainable energy subsidies as opposed to environmentally harmful subsidies. Or if indeed they are not subsidies, increasing renewable energy within the global energy mix can bring the goals of the Kyoto Protocol and the WTO to a greater alignment.

#### 4. The Case of Local Contents

It is interesting to note that recent disputes before the WTO involve the requirement of local contents in FIT schemes. The first WTO decision on the matter, the *Canada — Renewables* cases,<sup>121</sup> did not rule on whether the FIT program was a subsidy. Instead, it decided that the local content requirement was

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<sup>118</sup> *Canada – Renewable Energy & Feed-in-Tariff*, *supra* note 98, ¶ 4.3.

<sup>119</sup> Panel Report, *United States - Subsidies on Upland Cotton*, ¶ 7.1142, WT/DS267/R (Sept. 8, 2004).

<sup>120</sup> Appellate Body Report, *United States—Subsidies on Upland Cotton*, WT/DS267AB/R (Mar. 3, 2005).

<sup>121</sup> *Canada – Renewable Energy & Feed-in-Tariff*, *supra* note 98.

discriminatory against imports. Following on its heels, the US initiated a consultation with India.<sup>122</sup> India prescribed domestic origin requirements in its Jawaharlal Nehru National Solar Mission program in order for producers to qualify for benefits of long-term tariff rates.<sup>123</sup> The US consultation provoked retaliation from India, which questioned the local content requirement in at least five of the US's state legislations.<sup>124</sup>

These disputes followed US action against Chinese wind power equipment in 2011, in which the US initiated consultation with China for requiring the use of local equipment in order to be eligible for benefits under its FIT.<sup>125</sup> While the measure in question was rolled back, the US brought anti-dumping charges against Chinese solar and wind products benefiting from domestic subsidies.<sup>126</sup> Political and governmental concerns over the development of domestic markets have played a larger role than genuine environmental considerations and the promotion of global energy security. However, it can be argued that local content does build local energy security and attracts wide public support based on perceived nationalistic policies and job creation. These aspects are crucial if we consider how FIT schemes can hit a snag where consumers are the final bill payers of renewable energy costs. For example, Germany announced proposals to reduce energy subsidies, prompting fears of loss of competitiveness due to the shale gas industry boom in the US.<sup>127</sup> Germany's energy bills are among the highest in the world.<sup>128</sup>

In developing countries, where the common man has to make ends meet, a lack of social incentives can make it very difficult for a government to push the case for

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<sup>122</sup>Request for Consultations by the United States, *India - Certain Measures Relating to Solar Cells and Solar Modules*, WT/DS456/1 (Feb. 1, 2013).

<sup>123</sup> For further details about the case, see *India – Certain Measures Relating to Solar Cells and Solar Modules*, WORLD TRADE ORGANIZATION, [http://www.wto.org/english/tratop\\_e/dispu\\_e/cases\\_e/ds456\\_e.htm](http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds456_e.htm).

<sup>124</sup>Tom Miles, *India Questions U.S. Green Energy Incentives at WTO*, REUTERS Apr. 17, 2013, <http://uk.reuters.com/article/2013/04/17/us-india-usa-trade-idUKBRE93G11U20130417>.

<sup>125</sup>Request for Consultations by the United States, *China – Measures Concerning Wind Power Equipment*, WT/DS419/1 (Jan. 6, 2011).

<sup>126</sup> *Crystalline Silicon Photovoltaic Cells and Modules from China: Investigation Nos. 701-TA-481 & 731-TA-1190 (Final)*, U.S. INT'L TRADE COMM'N (Nov. 2012), [http://www.usitc.gov/publications/701\\_731/pub4360.pdf](http://www.usitc.gov/publications/701_731/pub4360.pdf); and *Utility Scale Wind Towers from China and Vietnam: Investigation Nos. 701-TA-486 & 731-TA-1195-1196 (Final)*, U.S. INT'L TRADE COMM'N (Feb. 2013), [http://www.usitc.gov/publications/701\\_731/pub4372.pdf](http://www.usitc.gov/publications/701_731/pub4372.pdf).

<sup>127</sup> Jan Hromadko & Andreas Kissler, *Germany Plans to Cap Renewable Subsidies*, WALL ST. J., Jan. 29, 2013, *available at* <http://online.wsj.com/news/articles/SB10001424127887323375204578269934082438240>.

<sup>128</sup>*Id.*

renewables. Regarding China's case in its dispute with the U.S, it has been argued that, considering China's alarming air quality and its huge energy demands, it is imperative that China develop a strong domestic industry in renewable goods.<sup>129</sup> This, however, is a fact-specific case, as only a few other major emerging economies (such as the so-called BRICs, namely Brazil, Russia, India, and China) will have potential for such surging economic growth or indeed meet their annual economic growth targets with such fortitude. Indeed, besides being trade-distortive, it is debatable to what extent local content requirements are effective in building domestic industry as compared to a competitive global open market. Of the 99 jurisdictions throughout the world which use FITs as of 2013, most do not have a local content requirement.<sup>130</sup> Considered in this context, FITs with local content requirements must indeed be dismissed as anomalies and trade-distortive attempts in an otherwise grand scheme.

### 5. Green Subsidy Fund

While FITs face SCM-compatibility issues, an alternative in the form of a WTO waiver system has been proposed.<sup>131</sup> Under this system, a Green Subsidy Fund under the UNFCCC system can be set up. Unless they are blatantly discriminatory, any subsidy reported to the Fund may be granted a full waiver from WTO rules. A continuous monitoring of the subsidies reported must be in place, with signatories benefiting from technology transfers and support systems.

### 6. Funding Energy Security through GHG Emissions Control

Joseph Stiglitz<sup>132</sup> considers the failure to penalize carbon emission costs a 'hidden subsidy.'<sup>133</sup> The atmosphere within a state's boundary is its resource over which it has proprietary rights. The state has a duty to implement various initiatives to protect it, including GHG emissions control and related taxes. Any failure to do so

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<sup>129</sup> Robert Howse, Speech at Columbia University Law School: Climate Change, China and the WTO, (Mar. 30, 2011), *available at* [http://media.law.columbia.edu/specialevents/Climate\\_Change\\_Panel\\_110330\\_Gerrard.m.p3](http://media.law.columbia.edu/specialevents/Climate_Change_Panel_110330_Gerrard.m.p3).

<sup>130</sup> Liesbeth Casier & Tom Moerenhout, *WTO Members, Not the Appellate Body, Need to Clarify Boundaries in Renewable Energy Support*2 (Int'l Institute for Sustainable Dev., July 2013), *available at* [http://www.iisd.org/pdf/2013/wto\\_members\\_renewable\\_energy\\_support.pdf](http://www.iisd.org/pdf/2013/wto_members_renewable_energy_support.pdf).

<sup>131</sup> Howse – *Climate Mitigation Subsidies*, *supra* note 97.

<sup>132</sup> *Id.* at 6.

<sup>133</sup> That said, Stiglitz has been criticized by eminent commentators like Jagdish Bhagwati, who calls such hidden costs irrelevant under the SCM Agreement. *See* Jagdish Bhagwati & Petros Mavroidis, *Is Action Against US Exports for Failure to sign Kyoto Protocol WTO-Legal?*, 6(2)WORLD TRADE REV.299, 300-2 (2007).

can be treated as a ‘financial contribution’ under Article 1.1(a)(1)(iii) of the SCM Agreement. Further, where the government was considered to be providing goods or services, any failure to charge for such resources where the state had proprietary right could be a violation of Article 1.1(a)(1)(i) of the SCM Agreement. The revenue generated from such negative subsidies can fund a shift to renewable energy. Even if such inaction is not considered a subsidy within the SCM Agreement, national governments can indirectly achieve GHG emissions control by redirecting valuable resources from fossil subsidies towards FIT schemes and developing renewable energy technology. The potential for such a measure can be appreciated when we consider that the bill for fossil fuels subsidies globally was \$ 1.9 trillion in 2011.<sup>134</sup>

Former WTO Director-General Pascal Lamy acknowledged the potential for such a move when he proclaimed the reformation of fossil-fuel subsidies and trade-related aspects of renewable energy as the most crucial, but under-addressed issue at the WTO.<sup>135</sup> The international community should therefore agree to put an end to fossil fuels subsidies. Dale Andrew of the Organization for Economic Co-operation and Development also points out that full payment on fossil fuels will invariably create a competitive playing field for renewables and will foster energy security.<sup>136</sup> In this regard, an agreement in the energy sector may just be the missing piece of the puzzle for the WTO to help secure global energy accessibility.

## 7. General Exceptions under GATT Article XX

The GATT’s general exceptions under Article XX also present opportunities to develop renewable energy security. The 2006 World Trade Report of the WTO Secretariat recognized the ‘in principle’ application of Article XX to subsidies.<sup>137</sup> Considering that the SCM Agreement is a *lex specialis* to Article XVI of the GATT, this is not surprising. There is ample support that can be drawn for such a position.

Article II.2 of the Marrakesh Agreement states that all multilateral trade agreements are an integral part of the WTO. In this sense, the SCM Agreement

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<sup>134</sup>*Energy Subsidy Reform: Lessons and Implications*,13 (Int’l Monetary Fund, Jan. 28, 2013), available at <http://www.imf.org/external/np/pp/eng/2013/012813.pdf>.

<sup>135</sup> Pascal Lamy, Former Director-General, World Trade Org., Speech at the Workshop on the Role of Intergovernmental Agreements in Energy Policy: Energy Policy and the WTO, (Apr. 29, 2013), available at [http://www.wto.org/english/news\\_e/spl\\_e/spl279\\_e.htm](http://www.wto.org/english/news_e/spl_e/spl279_e.htm).

<sup>136</sup>*Energy Subsidies and the WTO*, GLOBAL SUBSIDIES INITIATIVE (Apr. 30, 2013), <http://www.iisd.org/gsi/news/energy-subsidies-and-wto>.

<sup>137</sup>World Trade Organization, *World Trade Report 2006 – Exploring the links between subsidies, trade and the WTO*65, [http://www.wto.org/english/res\\_e/booksp\\_e/anrep\\_e/world\\_trade\\_report06\\_e.pdf](http://www.wto.org/english/res_e/booksp_e/anrep_e/world_trade_report06_e.pdf).

and the GATT are agreements within Annex 1 of the Marrakesh Agreement. In *Korea - Dairy*, the Appellate Body recognized that the WTO is a single undertaking requiring simultaneous compliance.<sup>138</sup> Further, former Article 8 of the SCM Agreement regarding non-actionable subsidies should be taken into account, which contained a list of non-actionable subsidies, including those related to environmental protection. Commentators have stated that, in spite of its non-renewal, there is an agreement among WTO members that certain subsidies are better not challenged.<sup>139</sup> Therefore, there is an indication that subsidies for good causes are permissible for certain grounds. Instead of other cumbersome exceptions on free trade being introduced in a *lex specialis* agreement, it is much better if such ‘good’ subsidies are made permissible and trade-compliant within the nuances of Article XX of the GATT.

Still, there has been some criticism of this approach. Commentators have noted that, while the Sanitary and Phytosanitary Measures (SPS) Agreement makes specific reference to GATT Article XX, no such pointers lie in the SCM Agreement.<sup>140</sup> The issue of Article 3.1 of the SCM Agreement is even more interesting. It creates an exception for certain prohibited subsidies under the Agreement on Agriculture, but fails to mention GATT Article XX. However, considering the strong position for an integrated treatment of Annex 1 multilateral agreements in the Marrakesh Agreement, the spirit of Article XX is imbibed in all *lex specialis* agreements and, therefore, it can be argued that a specific reference is not mandatory.

However, as seen in recent decisions of the WTO’s Dispute Settlement system, there appears to be an uncertainty regarding the matter. In *China – Publications and Audiovisual Products*, the Appellate Body ruled on the applicability of GATT Article XX to non-GATT Agreements on the basis of a specific mention in China’s Accession Protocol to the WTO.<sup>141</sup> The AB ruled that China had the right to regulate trade using GATT Article XX if it was done ‘in a manner consistent with the WTO Agreement.’<sup>142</sup> However, in *China - Raw Materials*, the Appellate Body decided that, since the Accession Protocol had no reference to GATT Article XX,

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<sup>138</sup> Appellate Body Report, *Korea – Definitive Safeguard Measure on Imports of Certain Dairy Products*, ¶ 74, WT/DS98/AB/R (Dec. 17, 1999).

<sup>139</sup> Marie Wilke, *supra* note 72 at 31.

<sup>140</sup> *Id.* at 30.

<sup>141</sup> Accession of the People’s Republic of China, Decision of 10 November 2011, WT/L/432 (Nov. 23, 2001), *available at* <http://www.worldtradelaw.net/misc/chinaaccessionprotocol.pdf>.

<sup>142</sup> Appellate Body Report, *China - Measures Affecting Trading Rights and Distribution Services for Certain Publications and Audiovisual Entertainment Products*, ¶ 233, WT/DS363/AB/R (Dec. 21, 2009).

it would not be applicable.<sup>143</sup> Therefore, the jurisprudence surrounding the applicability of GATT Art XX to non-GATT disputes provides no clear pattern or answers. While environmental concerns in a predominantly trade-related agreement seem secondary, the above decisions provide some confidence that future WTO Dispute Settlement tribunals (panels and the Appellate Body) may give some consideration for sustainable development when ruling on the institutional framework of the Marrakesh Agreement.

The importance of GATT Article XX in protecting renewable subsidies where compelling environmental reasons exist cannot be overemphasized.<sup>144</sup> Considering the nascent development of renewable energy technologies, coverage by the exception under GATT Article XX would provide uniformity in decision-making as well as stability and assurance to investors. The applicability of GATT Article XX can be extended to both local content requirements under the FITs of least developed countries which want to finance the development of renewable technologies, as well as to cases of actionable subsidies. In either case, it has to satisfy either the GATT Article XX(b) or (g) conditions, along with the chapeau of GATT Article XX.

Since renewables ensure cleaner emissions than conventional energy, they help maintain clean air, which is an ‘exhaustible natural resource’ as per the Panel decision in *US – Gasoline*, and they are within the scope of GATT Article XX(g). Further, as opposed to fossil fuels with their high volumes of toxic emissions, renewables help protect human, animal and plant life, which makes them a ‘necessity’ under Article XX(b). Although alternative measures can be implemented for environmental protection, as per *Brazil – Retreaded Tyres*,<sup>145</sup> justifiable quantitative and qualitative evidence is sufficient for the existing measure to be ‘necessary,’ even if immediate impact is not visible. In addition, in *Korea – Various Measures on Beef*, the AB emphasized that WTO members “have the right to determine for themselves the level of enforcement of their WTO-consistent laws and regulations,”<sup>146</sup> considering factors such as cost, feasibility and efficiency. Therefore, the exceptions under GATT Article XX can be a useful tool in securing accessible renewable energy.

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<sup>143</sup> Appellate Body Report, *China - Measures Related to the Exportation of Various Raw Materials*, ¶ 77, WT/DS394/AB/R; WT/DS395/AB/R; WT/DS398/AB/R (Jan. 30, 2012).

<sup>144</sup> See Simon Lester, *GATT Article XX and Domestic Production of Environmental Goods*, INT’L ECON. L. & POL’Y BLOG (Apr. 3, 2011), <http://worldtradelaw.typepad.com/ielpblog/2011/04/article-xx-domestic-production-of-environmental-goods.html>.

<sup>145</sup> Appellate Body Report, *Brazil - Measures Affecting Imports of Retreaded Tyres*, ¶ 151, WT/DS332/AB/R (Dec. 3, 2007).

<sup>146</sup> Appellate Body Report, *Korea-Measures Affecting Imports of Fresh, Chilled and Frozen Beef*, ¶ 176, WT/DS161/AB/R; WT/DS169/AB/R (Dec. 11, 2000).

The long-term effectiveness of subsidies has been disputed at times. This issue is, however, beyond the scope of the WTO. The use of subsidies may not address long-term incentives for energy efficiency, which is vital for energy security. For example, State aid for US corn-based ethanol production is less efficient than for production of alternative biofuels such as sugarcane, as corn-based ethanol production is more costly and leaves a larger carbon footprint. However, all these issues are secondary to the question of whether FITs are subsidies.

#### 8. Summarizing the arguments

The WTO system does not handle general energy trade, or particular renewables trade, any differently from any other trade sector that is within the WTO's scope. While there have been calls for an energy-specific multilateral agreement to be adopted within the WTO auspices,<sup>147</sup> these have yet to result in a WTO agreement that is energy-specific. Arguably, the ECT, which focuses on the various aspects, including trade, investment, and environmental protection, of its parties' respective energy sectors, may fit that bill. The ECT could appropriately be regarded as an inter-state arrangement that arose out of the GATT/WTO system, given that the ECT was concluded as an alternative to previously unsuccessful efforts on the part

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<sup>147</sup> See Thomas Cottier et al., *Energy in WTO Law and Policy*, in *THE PROSPECTS OF INTERNATIONAL TRADE REGULATION: FROM FRAGMENTATION TO COHERENCE* 211-44 (Thomas Cottier and Panagiotis Delimatsis, eds., 2011); in relation to a speculative proposal for a Sustainable Energy Trade Agreement (SETA), see Matthew Kennedy, *Legal Options for a Sustainable Energy Trade Agreement*, (Int'l Centre for Trade & Sustainable Dev., 2012) Furthermore, see the following May 2013 ICTSD news-item: *Lamy Pushes for Increased Dialogue on Energy Issues*, 17(5) BRIDGES WEEKLY TRADE NEWS DIGEST (May 2, 2013), <http://ictsd.org/i/news/bridgesweekly/162166/>, reporting proceedings from a workshop held at the WTO Secretariat in Geneva, where several attendees commented on the need for the WTO system to better accommodate the promotion of renewables and energy particularities. We would add that such statements generally support the misperception that the current normative framework may be woefully inadequate. While we believe that guidelines based on the WTO rules and jurisprudence would be helpful to WTO members – imaginably, these could be drafted by the WTO legal division in cooperation with the WTO's Committee on Trade and the Environment, and any other relevant WTO organ – the rules and jurisprudence, as they currently stand, do not obstruct measures taken to promote renewable, so long as such measures are, generally, *bona fide*, not unduly discriminatory, and not unduly restrictive. It is therefore one thing to call for far-reaching – through e.g., guidelines, clarifications, and other means – systemic encouragement of the scaling-up and taking-up of renewables, and quite another to attempt to do away with the existing safeguards in WTO rules and jurisprudence that seek to prevent abuse (e.g., discriminatory treatment and/or protectionism).

of several developed net energy-importing WTO members to have an energy-specific agreement adopted within the WTO.<sup>148</sup>

In the absence of a specific energy-trade agreement, the WTO system and its multilaterally covered agreements are the principal structures that provide governance in cross-border energy trade, including cross-border renewable energy trade, to the extent that such trade flows involve a WTO member.<sup>149</sup> In addition, the multilateral trade rules that come to bear on such trade flows may further be enhanced by the rules contained in the WTO's plurilateral agreements so long as the WTO member(s) concerned have acceded to these and have assumed a further layer of WTO obligation. An example of one such plurilateral agreement would be the Agreement on Government Procurement (GPA), to which a minority of WTO members are party,<sup>150</sup> and which may be relevant to a situation, for example, where a WTO member that is a party to the GPA takes some trade-distortive measure connected to government procurement.

For their part, measures aimed at the promotion of renewable energy can be highly varied, and, consequently, might each engage a variety of WTO norms. However, these norms are not necessarily all applicable in every single case that involves a measure that claims to promote renewables. In that respect, any assessment of a measure's WTO compatibility would have to be performed on a case-by-case basis and in relation to the facts of each case.

Confusion about how the WTO system may accommodate measures aimed at the promotion of renewable energy could strengthen the case for a separate specific

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<sup>148</sup> See Thomas Wälde, *supra* note 62.

<sup>149</sup> The Agreement Establishing the WTO, signed in Marrakesh on 15 April 1994, sets the WTO's terms of reference. Annexes to this Agreement specify which the covered agreements are. The GATT is the principal multilateral trade agreement under the WTO concerning tradable goods. See the Marrakesh Agreement Establishing the World Trade Organization Annex 1A, Apr. 15, 1994, 1867 U.N.T.S. 154 [hereinafter Marrakesh Agreement]. Note that Annexes 1 & 4 to the Agreement Establishing the WTO distinguish between 'multilateral' and 'plurilateral' WTO agreements, with the former being binding to the entire WTO membership, while the normative effect of the latter set relies on WTO members having specifically acceded to this class of international agreements. The entire WTO system is predicated on the core principle of non-discrimination by prohibiting discrimination along the following two axes: namely, among WTO peers (Article I of the GATT) and among domestic and imported tradables (Article III of the GATT). Certain trade-distortive measures argued to have been taken to promote renewables may, and often do, engage any, or both, of these twin aspects of the non-discrimination principle.

<sup>150</sup> Currently there are 41 parties to the GPA, including all 28 EU members (with the Netherlands in its own right and on account of Aruba). Note that the EU is not a party in its own right to the GPA. See Parties and observers to the GPA, WORLD TRADE ORG., [http://www.wto.org/english/tratop\\_e/gproc\\_e/memobs\\_e.htm#pArties](http://www.wto.org/english/tratop_e/gproc_e/memobs_e.htm#pArties).

agreement on the matter, or an explanatory note containing clarificatory guidelines issued by the WTO Ministerial Conference<sup>151</sup> under its existing mandate and powers.<sup>152</sup> Such a note could contain an illustrative index/table with a series of examples of pro-renewables measures and their classification as WTO-consistent or inconsistent, according to the policy motivation behind these (given that there may be a variety of policy objectives hidden behind these), their adverse effects, and the specific WTO rules that are engaged.<sup>153</sup> Given the need for input from climate experts, this is an area where the climate and trade regimes need to work together in order to arrive at a mechanism that is both fair and effective.

In the meantime, one solution, as proposed by Nielsen, is to cover only those subsidies in the SCM Agreement that support renewable energy and green technology.<sup>154</sup> According to Nielsen, such an arrangement

“[w]ould naturally have to include a limit on the magnitude of the subsidy so that the prices would not get overly distorted, but some minimal subsidisation could be allowed. The subsidies should of course not be linked to WTO-inconsistent local content measures or import substituting measures – so the subsidies to, for example, feed-in tariffs would not be actionable provided they were granted equally to green technologies irrespectively of where they are produced.”<sup>155</sup>

#### IV. OTHER PROPOSALS FOR PROMOTING CLIMATE CHANGE MITIGATION THROUGH TRADE

This part examines various other mechanisms through which trade can promote climate change mitigation. These include designing more ambitious emissions trading schemes, the potential for labelling in encouraging greener trade and the need to invest in innovative solutions.

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<sup>151</sup> Marrakesh Agreement, *supra* note 149, art IV.1.

<sup>152</sup> See Marrakesh Agreement, *supra* note 149 arts. III, IV, IX, and X, which relate to the competences of the Ministerial Conference. The Ministerial Conference may either consensually or on the basis of a three-fourths majority - whichever may be required under the specific requirements of these provisions – adopt amendments to the agreements or interpretations of terms within the agreements.

<sup>153</sup> In fact, an excellent example, albeit one that considers these from a subsidies point of view, appears in Ghosh & Gangania, *supra* note 67 at 41.

<sup>154</sup> Laura Nielsen, *Trade and Climate Change — Establishing Coherence, in Building on Bali – A Work Programme for the WTO*, (Simon Evenett & Alejandro Jara, eds., Centre for Econ. Pol’y Res. 2013).

<sup>155</sup> *Id.*

*A. Emissions Trading Scheme – going global, inclusion of aviation and shipping*

Air and maritime transport are essential to international trade, and are also a major source of carbon emissions. Both, the International Civil Aviation Organization (ICAO) and the International Maritime Organization (IMO) are assigned to deal with climate change mitigation in their respective constituencies. In both sectors, future regulation on climate change mitigation may appear through ICAO or the IMO, i.e. multilaterally, or outside these multilateral structures, i.e., unilateral measures, such as the inclusion of aviation in the European Union's emissions trading scheme.

1. Towards a Global Carbon Market?

There are difficulties in developing a single global carbon market with comprehensive coverage of economic sectors and countries. A promising intermediary step between the creation of a global carbon market with comprehensive coverage of economic sectors and countries and the current situation, therefore, could be a sectoral approach to emissions trading. Unilateral, bilateral, plurilateral, or regional arrangements could target GHG emissions reductions in specific sectors such as electricity generation, motor vehicles, aviation, shipping, cement and aluminium, always aiming for greener or more efficient technology, as opposed to simply applying bans or restrictions. Such measures will require across-the-board cooperation. An example of such proposals took place on the 8<sup>th</sup> of July 2014, when 14 WTO members decided to launch plurilateral environmental goods negotiations at the WTO, with the aim to promote sustainable development and green growth.<sup>156</sup> This initiative is an example of how trade rules can advance climate action, to gradually become a Sustainable Energy Trade Agreement.

Another way to effectively fight against climate change is to create clubs of countries on carbon markets. This plurilateral climate agreement on carbon markets would require certain conditions for it to work. For instance, trade provisions for positive contributions to climate change mitigation. It would be necessary to have an enforcement mechanism. It would also require incentives and benefits for the members of the club, and the benefits would need to be excludable. A good example of a club is the Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants. Arguably, the more complex the problem, the smaller the club.

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<sup>156</sup> Azevêdo welcomes launch of plurilateral environmental goods negotiations, WORLD TRADE ORG. July 8, 2014, [http://www.wto.org/english/news\\_e/news14\\_e/envir\\_08jul14\\_e.htm](http://www.wto.org/english/news_e/news14_e/envir_08jul14_e.htm).

## 2. Inclusion of Aviation

An example of a unilateral trade-related climate change measure is the inclusion of aviation in the European Union's emissions trading scheme ("EU ETS"),<sup>157</sup> which failed because of both internal division within the EU (i.e., the EU Commission forced EU Member States to accept the inclusion of aviation in the EU ETS) and external opposition. The EU faced a maelstrom of criticism after attempting to expand its ETS to aviation.<sup>158</sup> Regardless of the fundamental legal question at the heart of the matter, i.e., whether it is "legal or legitimate to take unilateral measures against global carbon emissions as a response to the collective action problems that are frustrating multilateral efforts at climate mitigation,"<sup>159</sup> the disgruntled reaction of the international community reflected the disjointed approach to climate response measures globally, an approach that will have to become more cohesive if mitigation efforts are to be realized.

The EU's current compromise means that from 1 January 2014, flights to and from countries outside the European Economic Area (EEA) will be exempt for the emissions that take place outside EEA airspace. Only the emissions from the proportion of a flight taking place within EEA airspace will be covered. This process, dubbed "Stop the Clock," is by no means a long-term solution, given that "aviation is the fastest growing source of greenhouse gas emissions in the transport sector and the most climate-intensive form of transport. Aviation emissions have more than doubled in the last twenty years and the sector accounts for 5% of global warming."<sup>160</sup> Thus, while the attempt to include aviation in the EU ETS may not have succeeded, it did serve as a "wake-up call" of sorts, bringing to the forefront the need for a "principled approach," i.e., a solution in which "fundamental principles of sustainable development are observed."<sup>161</sup> Possible response measures include switching to more fuel-efficient engines and aircraft

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<sup>157</sup> The EU Emissions Trading System (EU ETS), EUR. COMMISSION CLIMATE ACTION, [http://ec.europa.eu/clima/policies/ets/index\\_en.htm](http://ec.europa.eu/clima/policies/ets/index_en.htm).

<sup>158</sup> See LEAL-ARCAS, *supra* note 1 at 162.

<sup>159</sup> Robert Howse, *Commentary: The Political and Legal Underpinnings of including Aviation in the EU ETS* in Lorand Bartels, *The Inclusion of Aviation in the EU ETS* 28 (ICTSD Programme on Trade & Env't, Issue Paper No. 6, 2013), <http://ictsd.org/downloads/2012/05/the-inclusion-of-aviation-in-the-eu-ets-wto-law-considerations.pdf> [hereinafter Robert Howse].

<sup>160</sup> *Grey day for environment as Europe reduces its aviation emissions coverage*, AIRPORT WATCH (Oct. 16, 2013), <http://www.airportwatch.org.uk/?p=17951>.

<sup>161</sup> Markus W. Gehring & Cairo A. R. Robb, *Addressing the Aviation and Climate Change Challenge* (ICTSD Programme on Trade and Env't, Issue Paper No. 7, 2013), <http://ictsd.org/downloads/2013/08/addressing-the-aviation-and-climate-change-challenge.pdf>.

designs; using “greener” fuels; as well as more efficient use of airspace and airports.<sup>162</sup>

Regardless of the aviation stalemate, the EU ETS has succeeded in promoting low-carbon strategies in many major emitting industries. A growing number of countries are integrating cap-and-trade schemes into their national climate policies, such as the United States, New Zealand, Australia,<sup>163</sup> Canada and Japan. It may eventually be possible to geographically expand the EU ETS to a global level by multilateralizing current and future regional ETS in the world (e.g., in Australia,<sup>164</sup> Kazakhstan<sup>165</sup> and Korea<sup>166</sup>). However, before moving forward with such schemes, one should bear in mind, the potential challenges and opportunities when linking the EU ETS to other emissions trading schemes. For instance, current low carbon prices in the EU market have led to reduced investment in low-carbon technologies, and it is worth waiting to see whether the various options under consideration for reviving the market, such as reducing the number of permits traded and other longer-term structural reforms, prove successful.

In a positive step towards global cooperation on aviation emissions, the International Civil Aviation Organization (ICAO) agreed in October 2013 to develop a global market-based measure for international aviation.<sup>167</sup> The idea is to create a multilateral mechanism to govern GHG emissions from international aviation, to be implemented by ICAO members by 2020.<sup>168</sup> With the participation of ICAO’s 184 Member States, perhaps the EU’s vision of addressing the climate challenges posed by international aviation will actually come to fruition. In the meantime, there is much the EU can do to strengthen its position, such as supporting other countries aiming to curb aviation emissions, and working to

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<sup>162</sup> Robert Howse, *supra* note 159.

<sup>163</sup> Frank Jotzo & Regina Betz, *Linking the Australian Emissions Trading Scheme* (Climate Strategies, 2009), available at <http://www.climatestrategies.org/component/reports/category/33/128.html>.

<sup>164</sup> See similar views by the EU Commission, *International Carbon Market*, EUR. COMMISSION CLIMATE ACTION, [http://ec.europa.eu/clima/policies/ets/linking/index\\_en.htm](http://ec.europa.eu/clima/policies/ets/linking/index_en.htm).

<sup>165</sup> *The GHG emissions trading system*, KAZAKH CARBON, <http://www.kzc.kz/en/legislation/ghg-emissions-trading-scheme>.

<sup>166</sup> *South Korea’s Emissions Trading Scheme*, (Bloomberg New Energy Finance, May 10, 2013), <http://about.bnef.com/white-papers/south-koreas-emissions-trading-scheme/>.

<sup>167</sup> *Dramatic MBM Agreement and Solid Global Plan Help Deliver Landmark ICAO 38th Assembly*, INTERNATIONAL CIVIL AVIATION ORGANIZATION, <http://www.icao.int/Newsroom/Pages/mbm-agreement-solid-global-plan-endorsements.aspx>.

<sup>168</sup> *ICAO Assembly to Develop a Global Market-based Measure for International Aviation*, CLIMATE CHANGE POL’Y & PRAC. (Oct. 4, 2013), <http://climate-liisd.org/news/icao-assembly-to-develop-a-global-market-based-measure-for-international-aviation/>.

reinstate the original terms of the EU ETS as soon as feasibly possible.<sup>169</sup> Ideally, the international community should aim at the integration of ETS mechanisms throughout the world.

### 3. Shipping

The attempt to expand the EU ETS to aviation also points to the logic of acknowledging another key area where trade policy and climate policy need to cooperate - shipping. According to the International Maritime Organization (IMO), more than 90 per cent of global trade flows engage international shipping.<sup>170</sup> This suggests that current levels of global trade flows and, *ex fortiori*, of global consumption would not be possible without the shipping industry, not least because of the competitive pricing of freight transport through this means. While, according to the International Chamber of Shipping, “shipping is the least environmentally damaging form of commercial transport and, compared with land-based industry, is a comparatively minor contributor to marine pollution from human activities,”<sup>171</sup> it remains an industry that cannot be overlooked when it comes to climate response measures, given that shipping causes around 3 per cent of total CO<sub>2</sub> emissions.<sup>172</sup> So far, in relation to reducing the CO<sub>2</sub> emissions of the shipping industry, the IMO, and more specifically its Marine Environment Protection Committee, has put together a bundle of measures which, amongst other things, include an index system, analogous to that used to rate vehicles and electrical appliances, to classify new vessels according to their energy efficiency; a template for a Ship Energy Efficiency Management Plan for vessels, new and old alike, to monitor and improve performance in relation to CO<sub>2</sub> emissions and ideas in relation to possible economic tools to encourage GHG emissions reduction.<sup>173</sup>

In a June 2013 proposal, the European Commission called for more robust monitoring, reporting, and verification (MRV) of GHG emissions from maritime transport, stating that introducing MRV could reduce emissions by 2 per cent,

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<sup>169</sup>Rob Elsworth & Phil MacDonald, *Aviation and the EU ETS—What happened in 2012 during ‘Stop the Clock?’* SANDBAG CLIMATE CAMPAIGN 8 (2013), available at [http://www.sandbag.org.uk/site\\_media/uploads/Sandbag\\_Aviation\\_and\\_the\\_EU\\_ETS\\_2012\\_171213.pdf](http://www.sandbag.org.uk/site_media/uploads/Sandbag_Aviation_and_the_EU_ETS_2012_171213.pdf).

<sup>170</sup> Introduction to IMO, INTERNATIONAL MARITIME ORGANIZATION, <http://www.imo.org/About/Pages/Default.aspx>.

<sup>171</sup> *Environmental Performance*, INT’L CHAMBER OF SHIPPING, <http://www.ics-shipping.org/shipping-facts/environmental-performance> (last visited Aug. 23, 2014).

<sup>172</sup> Shipping, World Trade and the Reduction of CO<sub>2</sub> Emissions, (Int’l Chamber of Shipping), <http://www.shippingandco2.org/CO2%20Flyer.pdf>.

<sup>173</sup> LEAL-ARCAS, *supra* note 1 at 173.

compared to business-as-usual.<sup>174</sup> The draft legislation was approved by the European Parliament's industry, research and energy (ITRE) committee, despite objections that the proposed changes were too weak.<sup>175</sup> Still, the fact that the EU is already looking towards shipping, despite the backlash it received for expanding its ETS to aviation, shows a certain commitment to environmental protection. In any event, now that shipping is entering the spotlight, there is no reason why the international community should sit back and let the EU go it alone once again, only to result in the same outcry of legal objections as in the case of aviation. The importance of a global approach to including shipping in emissions trading schemes is clear: one that involves other UNFCCC Parties for a more efficient and effective response to climate change mitigation. Moreover, a pre-emptive approach, acting together, may help safeguard against measures that are too trade-restrictive.

### B. Eco-labelling

Eco-labelling is another example of the link between the environment and trade, where policy-makers need to tread carefully to avoid posing trade barriers in developing countries. Eco-labelling can be defined as “a voluntary market mechanism designed to encourage industry to produce goods which have a reduced environmental impact and to encourage consumers to buy them in preference to others.”<sup>176</sup> While eco-labelling has the potential to negatively affect trade flows from developing countries, well-planned labelling measures can boost both trade and environmental goals. For example, profits derived from certain labelling schemes enable farmers to implement environmental protection programs such as reforestation or installing solar energy panels.<sup>177</sup> Such investments naturally feed into global climate change mitigation goals.

The use of eco-labels gives rise to special complications within the WTO framework.<sup>178</sup> Applying WTO provisions to eco-labeling regimes largely depends

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<sup>174</sup> See *Proposal for a Regulation of the European Parliament and of the Council on the Monitoring, Reporting and Verification of Carbon Dioxide Emissions from Maritime Transport and Amending Regulation (EU) No 525/2013*, June 28, 2013, available at [http://ec.europa.eu/clima/policies/transport/shipping/docs/com\\_2013\\_480\\_en.pdf](http://ec.europa.eu/clima/policies/transport/shipping/docs/com_2013_480_en.pdf).

<sup>175</sup> See *Flawed' Commission proposal on ship emissions gains ground in Parliament*, EURACTIV.COM (Jan. 10, 2014), <http://www.euractiv.com/transport/flawed-commission-proposal-ship-news-532680>.

<sup>176</sup> See WALTER GOODE, *DICTIONARY OF TRADE POLICY TERMS* 112(4<sup>th</sup> ed., 2003).

<sup>177</sup> FAQs, WHAT IS FAIRTRADE?, [http://www.fairtrade.org.uk/what\\_is\\_fairtrade/faqs.aspx](http://www.fairtrade.org.uk/what_is_fairtrade/faqs.aspx).

<sup>178</sup> For a discussion on eco-labeling and the WTO, see Arthur Appleton, *Environmental Labeling Schemes: WTO Law and Developing Country Implications*, in *TRADE, ENVIRONMENT, AND THE MILLENNIUM* 211 (Gary P. Sampson & W. Bradnee Chambers, eds., 2000); *Eco-*

on the extent of the relevant Government's involvement in their administration, and whether participation in the scheme is mandated or voluntary. Eco-label requirements that are government-mandated fall into the category of other environmental, health and safety (EHS) regulations; the situation calls for preventing unfair trade restrictions while allowing for a State's freedom to choose appropriate degrees and methods of EHS protection, along with keeping consumers informed of relevant facts. On the other hand, eco-labeling as part of private and voluntary schemes is not subject to WTO disciplines. The role of governments in promoting or encouraging the use of eco-labels is, as yet, an uncertain area.<sup>179</sup>

Despite the less-trade-intrusive appearance of eco-labelling measures, the increasing complexity and diversity of eco-labelling schemes may create more problems for small and medium enterprises and exporting countries, especially developing countries, due to more burdens such as adjusting cost. Complex and diverse eco-labelling requirements may put developing countries on the disadvantaged edge in the international market and may mislead consumer choices. As such, there is room to re-evaluate labelling schemes in order to find ways to reap trade benefits. Every country should be able to participate in discussions regarding setting clear and appropriate eco-labelling standards. Doing so will also eliminate those eco-labelling requirements that are discriminatory and disguise trade distortions.<sup>180</sup>

According to the United Nations Environment Programme (UNEP), "the important issue with regard to certification costs is whether these costs are relatively higher in developing countries than in developed ones...The accepted wisdom is that conditions in developing countries are such that each of these factors contributes to relatively higher certification costs vis-à-vis those in developed countries."<sup>181</sup>

### *C. Investing in innovation*

While the trade and climate change agendas have come a long way in terms of working together to achieve sustainable development goals, there is still much that can be done when it comes to investing in innovation and new technologies. This

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*labeling Standards, Green Procurement and the WTO: Significance for World Bank Borrowers*, (Centre for Int'l Env't'l L., 2005).

<sup>179</sup> LEAL-ARCAS, *supra* note 1 at 117-8.

<sup>180</sup> *Id.* at 118-9.

<sup>181</sup> See Tom Rotherham, *The Trade and Environmental Effects of Ecolabels: Assessment and Response*, (United Nations Env't Programme), available at <http://www.unep.ch/etb/publications/Ecolabelpap141005f.pdf>.

raises questions such as what technologies should be invested in, and how we can look at existing technologies from a different lens, to identify their potential role in development. This year's Sustainable Innovation Forum, organized by Climate Action at the annual UNFCCC Conference of the Parties (COP), addressed these questions and others, including: "How can we make low carbon infrastructures more viable?" and "How can collaboration speed up the transformation to a green economy?"<sup>182</sup>

Harnessing innovation and technology to promote sustainable development both through trade and climate change mitigation will require not only investing heavily in research and development, but also keeping our eyes open for "surprise fixes." Three-dimensional (3D) printing, for example, offers one such scenario. While developed as a cheaper and faster way to produce complex products, 3D printing has found its way into a variety of markets, including architecture, industrial design, aerospace, military operations, dental and medical technology, and even fashion, footwear, and jewellery.<sup>183</sup> As 3D printing becomes more and more prevalent amongst consumers in home and offices, it will be interesting to make note of its environmental impact. Will it eventually have a positive impact on the environment by reducing the environmental impacts of shopping, whether in-store (resulting in transportation emissions) or online (resulting in environmental costs of packaging and shipping)?

In this context, a recent study<sup>184</sup> by engineers at Michigan Technological University analyzed the environmental life cycles of products produced by 3D printing and traditionally manufactured products. According to the study, the arrival of open-source 3D printing makes it a "technically viable form of distributed manufacturing of polymer-based products."<sup>185</sup> Furthermore, the study concludes that "the environmental impact of manufacturing polymer products can be reduced using distributed manufacturing with existing low-cost open-source 3D printers when using PLA [polylactic acid]. This indicates that distributed manufacturing is technically viable and environmentally beneficial because of both reduced energy consumption and greenhouse gas emissions."<sup>186</sup>

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<sup>182</sup> See Sustainable Innovation Forum, CLIMATE ACTION, <http://www.climateactionprogramme.org/forum>.

<sup>183</sup> See The History of 3D Printing, REDORBIT, [www.redorbit.com/education/reference\\_library/general-2/history-of/1112953506/the-history-of-3d-printing](http://www.redorbit.com/education/reference_library/general-2/history-of/1112953506/the-history-of-3d-printing).

<sup>184</sup> Megan Kreiger & Joshua Pearce, *Environmental Life Cycle Analysis of Distributed Three-Dimensional Printing and Conventional Manufacturing of Polymer Products*, 1 ACS SUSTAINABLE CHEMISTRY & ENGINEERING 1511 (2013).

<sup>185</sup> *Id.* at 1518.

<sup>186</sup> *Id.*

Even more interestingly, some manufacturers are incorporating green innovations into 3D printing at the most basic stages. For example, Rolls Royce is planning to use 3D printing technology to “produce components for its jet engines, as a means of speeding up production and making more lightweight parts,”<sup>187</sup> which, naturally, has positive implications for the environment. If 3D printing takes off on a large-scale, it may prove an interesting and unexpected helpmate in the quest to promote sustainability through trade.

Such innovative fixes and technological advances become all the more crucial in the face of discussions around “loss and damage.” Loss and damage featured heavily at the 2013 COP 19 in Warsaw, especially as the conference followed on the heels of Typhoon Haiyan in the Philippines. There is increasing recognition that no amount of climate change mitigation and adaptation can prevent the impacts of inevitable and severe weather events, such as Haiyan. With loss and damage the subject of intense negotiation at Warsaw, and developing countries pushing for an international mechanism on loss and damage, the result was the Warsaw International Mechanism for Loss and Damage.<sup>188</sup> By many accounts, however, this was less than developing countries were hoping for.<sup>189</sup>

The Mechanism acknowledges the need to address loss and damage associated with climate change impacts, and paves the way for establishing an executive committee<sup>190</sup> to address loss and damage through enhancing knowledge and understanding, addressing gaps in expertise, data collection and sharing, and fostering dialogue, providing leadership, and other activities.<sup>191</sup> However, the big question of financing remains unresolved.

In any case, in the context of trade, the recognition of the glaring need to address loss and damage paves the way for further technological advancement, all of which has implications for trade. Whether this means investing in renewable energy, designing new, more resilient infrastructures, or creating better mechanisms for predictability, trade can be a powerful engine for moving the agenda forward, and it will be important to keep global sustainable development, not sovereign state

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<sup>187</sup> See Jeevan Vasagar, *Rolls Royce plans 3D printing for jet engine parts*, FINANCIAL TIMES, <http://www.ft.com/cms/s/0/95a7b560-4c80-11e3-923d-00144feabdc0.html>.

<sup>188</sup> FCCC/CP/2013/L.15 – *Warsaw international mechanism for loss and damage associated with climate change impacts (advanced unedited version)*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, ¶ 1 (Nov. 22, 2013), [http://unfccc.int/files/meetings/warsaw\\_nov\\_2013/in-session/application/pdf/fccc.cp.2013.l.15.pdf](http://unfccc.int/files/meetings/warsaw_nov_2013/in-session/application/pdf/fccc.cp.2013.l.15.pdf) [hereinafter *Warsaw Mechanism*].

<sup>189</sup> See Joy Hyvarinen, *Loss and damage: three questions after Warsaw*, FOUND. FOR INT’L ENVTL. L. & DEV., <http://www.field.org.uk/blog/2013/12/16/loss-and-damage-three-questions-after-warsaw>.

<sup>190</sup> *Warsaw Mechanism*, *supra* note 188, ¶ 2.

<sup>191</sup> *Id.* ¶ 5.

economic growth, as a priority in this respect. In this context, UN Secretary-General Ban Ki-moon is organizing a Climate Summit for September 2014, which is “aimed at catalyzing action by governments, business, finance, industry, and civil society in areas for new commitments and substantial, scalable and replicable contributions to the Summit that will help the world shift toward a low-carbon economy.”<sup>192</sup>

## V. CONCLUSION

Potential cooperation between the trade and climate change agendas leaves much room to be explored. Emissions trading and border carbon adjustment schemes have proven effective (albeit controversial), and although expanding the EU ETS to aviation has not quite taken off (no pun intended), it underscored the need for far more effective international cooperation. Moreover, the mushrooming of regional trade agreements points to the fact that international trade is moving away from multilateralism, which may pose interesting opportunities for climate change policy to jump on the bandwagon. Trade rules in renewable energy are also worth examining more closely in order to further facilitate trade in greener types of energy. In this context, more cohesive energy trade governance overall would play an important role in promoting sustainable energy.

As far as climate change negotiations are concerned, greater leadership by developed countries is essential, as well as more involvement by developing countries, especially major economies such as China and India. Developed countries will also need to make stronger commitments in areas such as finance and technology transfer, which will have to be implemented through a fair and tangible mechanism. Overall, bottom-up policies that circumvent multilateralism can be powerful vehicles for change. Using such policies to capitalize on both trade and climate change goals is the key. As the international community brainstorms about the post-2015 development agenda and how to transition from the Millennium Development Goals to the Sustainable Development Goals, it has become glaringly clear that the various development agendas cannot succeed if they operate in isolation. In this regard, trade and climate policymakers must collaborate and design regulations that do not prioritize one agenda over another, but rather find a mutually supportive way forward. Moreover, the international community should re-think WTO rules in the context of sustainable development, given that climate change is a major sustainability issue.

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<sup>192</sup> See CLIMATE SUMMIT 2014, <http://www.un.org/climatechange/summit2014>.