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ASSESSING THE CLIMATE IMPACTS OF U.S. TRADE AGREEMENTS

Matthew C. Porterfield,* Kevin P. Gallagher** & Judith Claire Schachter***

ABSTRACT

Meeting the ambitious goals of the Paris Agreement will require the United States and other major greenhouse gas (GHG) emitters to integrate climate change considerations into all relevant areas of economic policy. The United States, however, has conspicuously failed to do so with regard to international trade negotiations. International trade agreements tend to increase GHG emissions due to the economic effects of trade liberalization, including increases in the scale of economic activity and changes in the composition of the affected economies. Trade agreements can also affect climate change in less quantifiable but potentially more significant ways by restricting the ability of governments to implement measures designed to mitigate climate change. Trade and investment rules in U.S. trade agreements have already been invoked to challenge a number of policies relevant to climate change, ranging from renewable energy programs to the Obama administration's decision to reject the Keystone XL pipeline.

Yet despite the growing evidence of the relevance of trade policy to climate change, the Office of the United States Trade Representative (USTR) largely ignores potential climate impacts when preparing environmental reviews of proposed trade agreements as required under Executive Order 13141. This Article explores how the USTR could address climate change within the environmental review process to both assess the potential economically driven and regulatory impacts of proposed trade agreements for climate change and identify options for mitigating those impacts.

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I. INTRODUCTION

The United States and other signatories to the Paris Agreement have committed “to reach[ing] global peaking of greenhouse gas emissions as soon as possible . . . and to undertak[ing] rapid reductions thereafter.”¹ The Paris Agreement indicates that this aggressive approach is necessary to

1. *Paris Agreement*, in U.N. Framework Convention on Climate Change [UNFCCC], Rep. of the Conference of the Parties on Its Twenty-First Session, at art. 4(1), U.N. Doc FCCC/CP/2015/L.9/Rev.1 (Dec. 12, 2015) [hereinafter *Paris Agreement*], <https://unfccc.int/resource/docs/2015/cop21/eng/109r01.pdf>.

achieve the goal of limiting the increase in average global temperatures to “well below 2°C above pre-industrial levels. . . .”²

Meeting these targets will require the United States and other major greenhouse gas (GHG) emitters to integrate climate change considerations into all relevant areas of economic policy. The United States, however, has conspicuously failed to do so with regard to international trade negotiations. International trade agreements tend to increase GHG emissions due to the economic effects of trade liberalization, including increases in the scale of economic activity and changes in the composition of the affected economies.³ Recent analysis prepared for the European Commission, for example, concludes that the proposed Trans-Atlantic Trade and Investment Partnership (TTIP) between the United States and the European Union (EU) would increase carbon dioxide (CO₂) emissions in the United States by 0.3% and in the EU by 0.2%.⁴

In addition to economically induced impacts, trade agreements can also affect climate change in less quantifiable but potentially more significant ways by restricting the ability of governments to implement measures designed to mitigate climate change. Trade and investment rules in U.S. trade agreements have already been invoked to challenge a number of policies relevant to climate change, ranging from renewable energy programs⁵ to the Obama administration’s decision to reject the Keystone XL pipeline.⁶ Yet despite the growing evidence of the relevance of trade policy to climate change, the Office of the United States Trade Representative (USTR)

2. *Id.* at art. 2(1)(a). On June 1, 2017, President Trump announced his intention to withdraw from the Agreement. See *Statement by President Trump on the Paris Climate Accord* (June 1, 2017), <https://www.whitehouse.gov/the-press-office/2017/06/01/statement-president-trump-paris-climate-accord>. Under Article 28 of the Agreement, the withdrawal could not take place prior to June 4, 2020. See Brad Plumer, *The U.S. Won’t Actually Leave the Paris Climate Deal Anytime Soon*, N.Y. TIMES (June 7, 2017), https://www.nytimes.com/2017/06/07/climate/trump-paris-climate-timeline.html?_r=0. The Trump administration has subsequently equivocated regarding whether it will withdraw. See Joanna Walters, *Top Trump Officials Signal US Could Stay in Paris Climate Agreement*, THE GUARDIAN (Sept. 17, 2017), <https://www.theguardian.com/environment/2017/sep/17/trump-tillerson-mcmaster-paris-climate-accord-stay-in>.

3. See WTO and U.N. Env’tl. Program, *Trade and Climate Change*, at xii (2009) [hereinafter WTO-UNEP], https://www.wto.org/english/res_e/booksp_e/trade_climate_change_e.pdf (“Most of the statistical studies [on trade liberalization and emissions] indicate that more open trade will most likely lead to increased CO₂ emissions . . .”).

4. ECORYS, *SLA in Support of the Negotiations on a Transatlantic Trade and Investment Partnership (TTIP) Final Report*, at 24 (Mar. 2017) [hereinafter ECORYS], <http://www.trade-sia.com/ttip/wp-content/uploads/sites/6/2014/02/TSIA-TTIP-Final-Report.pdf>.

5. See *infra* note 98 and accompanying text.

6. The pipeline was subsequently approved by the Trump administration. See *infra* note 102-04 and accompanying text.

largely ignores potential climate impacts when preparing environmental reviews of proposed trade agreements.

Executive Order 13141 indicates that it is the policy of the United States to “factor environmental considerations into the development of its trade negotiating objectives.”⁷ The Executive Order requires the preparation of environmental reviews in order to (1) identify the potential environmental effects of proposed trade agreements and (2) evaluate options for addressing those impacts.⁸ This Article explores how climate change could be addressed within the environmental review process to fulfill the twin goals of the Executive Order by both assessing the potential economically driven and regulatory impacts of proposed trade agreements on climate change and identifying options for mitigating those impacts.

Section II reviews the requirements of Executive Order 13141 and the USTR’s failure to address climate change in its environmental reviews. Section III identifies issues that should be examined and analytic approaches that could be used to assess the potential economic and policy implications of proposed trade agreements. Section IV discusses options for mitigating the adverse climate impacts of trade agreements that could be evaluated in environmental reviews.

II. ENVIRONMENTAL REVIEW OF TRADE AGREEMENTS UNDER EXECUTIVE ORDER 13141

A. *The Executive Order and Environmental Review Guidelines*

Executive Order 13141, signed by President Clinton on November 16, 1999, directs the USTR to prepare environmental reviews on bilateral, plurilateral, and multilateral trade agreements and “major new trade liberalization agreements in natural resource sectors.”⁹ Guidelines issued by the USTR and the Council on Environmental Quality specify that an environmental review should address “all reasonably foreseeable environmental effects”¹⁰ of the proposed agreement, including both economically driven

7. Exec. Order No. 13,141, 64 Fed. Reg. 63,169 (Nov. 18, 1999).

8. *Id.* (“Environmental reviews are an important tool to help identify potential environmental effects of trade agreements, both positive and negative, and to help facilitate consideration of appropriate responses to those effects whether in the course of negotiations, through other means, or both.”).

9. *Id.*

10. See USTR AND COUNCIL ON ENVTL. QUALITY, GUIDELINES FOR IMPLEMENTATION OF EXECUTIVE ORDER 13141, ENVIRONMENTAL REVIEW OF TRADE AGREEMENTS (2000), app. C, 17, [hereinafter ENVIRONMENTAL REVIEW GUIDELINES], <http://www.ustr.gov/sites/default/files/guidelines%20for%2013141.pdf>.

impacts¹¹ and the implications for environmental regulations.¹² In addition, each review must include an analysis of options for mitigating negative impacts.¹³

The Guidelines indicate that the analysis of economically driven impacts should focus on “the extent to which positive and negative environmental impacts may flow from economic changes estimated to result from the trade agreement.”¹⁴ Relevant types of potential economic changes from trade agreements that may cause environmental effects include changes in volume and mode of transportation, changes in natural resource usage, and “increased or decreased use of environmentally responsible technology.”¹⁵

Relevant regulatory effects that should be considered include “implications of the proposed trade agreement for U.S. environmental regulations, statutes, and binding obligations such as multilateral environmental agreements . . . [and] for the ability of state, local and tribal authorities to regulate with respect to environmental matters” and implications for “environmental policy instruments and other environmental commitments.”¹⁶ The regulatory impact assessment sections of the USTR’s environmental reviews, however, are typically brief and conclusory. The regulatory analysis in the Interim Environmental Review of the Trans-Pacific Partnership (TPP), for example, is only a little over one page long.¹⁷

The Guidelines identify the following criteria for determining whether global and transboundary environmental impacts should be addressed:

- (a) scope and magnitude of reasonably foreseeable global and transboundary impacts;
- (b) implications for U.S. interests, including international commitments and programs for international cooperation;
- (c) availability of relevant data and analytic tools for addressing impacts outside the United States, including reviews performed by

11. *Id.* § V(C).

12. *Id.* § V(B).

13. *Id.* § V(D).

14. *Id.* § V(C).

15. *Id.* app. C § II.

16. *Id.* app. C. § I. A-B.

17. See USTR, INTERIM ENVIRONMENTAL REVIEW: TRANS-PACIFIC PARTNERSHIP AGREEMENT, at 44-45 (2013), <https://ustr.gov/sites/default/files/TPP%20Interim%20Review%20-%20final%20for%20posting%20-%202018.22.13.pdf>. The Environmental Review of the TPP is unlikely to be finalized, given President Trump’s decision to withdraw from the agreement. See Memorandum from Office of the Press Secretary Regarding Withdrawal of the United States from the Trans-Pacific Partnership Negotiations and Agreement (Jan. 23, 2017) [hereinafter TPP Withdrawal Memorandum], <https://www.whitehouse.gov/the-press-office/2017/01/23/presidential-memorandum-regarding-withdrawal-united-states-trans-pacific>.

other countries involved in negotiations or by regional or international organizations; and

(d) diplomatic considerations.¹⁸

The Guidelines specifically identify climate change and “impacts relating to environmental issues identified by the international community as having a global dimension and warranting a global response” as among the global and transboundary effects that may merit consideration.¹⁹

B. *The USTR’s Failure to Consider Climate Impacts of Trade Agreements*

Despite the Environmental Review Guidelines’ explicit reference to climate change, the USTR does not address climate impacts in its environmental reviews of trade agreements. This omission appears to be due to political considerations rather than any economic or regulatory analysis.

Climate change remains a highly divisive issue in Congress.²⁰ Accordingly, the USTR has gone to significant lengths to avoid any linkages between trade and climate policy that might undermine support for pending trade agreements, as evidenced by its efforts to delete references to climate change from the TPP. In January 2014, a draft text of the TPP’s Environment Chapter was leaked.²¹ The text included an article on “Trade and Climate Change,” and stated that the Parties acknowledged “climate change as a global concern that requires collective action” and recognized “the desirability that trade and climate change policies be mutually supportive.”²² The article also noted the Parties’ commitments under the United Nations Framework Convention on Climate Change (UNFCCC), as well as their commitments to phase out inefficient fossil fuel subsidies.²³

18. ENVIRONMENTAL REVIEW GUIDELINES, *supra* note 10, § IV(B)(5)(2).

19. *Id.* app. C, § (IV)(G)(1), (3).

20. The political sensitivity of climate policy is reflected in Section 914(b) of the Trade Facilitation and Trade Enforcement Act of 2015, which instructs the USTR

[T]o ensure that trade agreements do not establish obligations for the United States regarding greenhouse gas emissions measures, including obligations that require changes to United States laws or regulations or that would affect the implementation of such laws or regulations, other than those fulfilling the other negotiating objectives in this section.

Trade Facilitation and Trade Enforcement Act of 2015, Pub. L. No. 114-125, § 914 (b)(3), 130 Stat. 122, 273 (2016).

21. See Wikileaks, *Secret Trans-Pacific Partnership Agreement (TPP)—Environment Consolidated Text*, (Jan. 15, 2014), https://wikileaks.org/tpp-enviro/#trade_and_climate.

22. *Id.* art. SS.15, ¶¶ 1, 2.

23. *Id.* art. SS.15, ¶¶ 1, 6.

In February 2014, the United States responded to the leaked draft with a counterproposal that changed the name of the article from “Trade and Climate Change” to “Transition to a Low-Emissions Economy” and removed any references to climate change, the UNFCCC, or carbon.²⁴ It also deleted text indicating the Parties’ agreement to undertake “cooperative and capacity building activities designed to facilitate effective implementation” of commitments to phase out fossil fuel subsidies.²⁵ The final text of the TPP Environment Chapter released in October 2015 includes an article titled “Transition to a Low Emissions and Resilient Economy,” which contains no reference to climate change, the UNFCCC, or phasing out fossil fuel subsidies.²⁶

The political sensitivity of climate change, however, does not relieve the USTR of its obligations under Executive Order 13141. As discussed below, both economically driven and policy impacts of U.S. trade agreements on climate change are “reasonably foreseeable,”²⁷ and failure to evaluate these impacts could significantly undermine the efforts of the United States to collaborate with other countries on reducing global GHG emissions. Conversely, rigorous analysis in environmental reviews could reveal opportunities to use trade agreements to mitigate climate change.

III. ASSESSING CLIMATE IMPACTS OF TRADE AGREEMENTS

A. *Assessing Economically Driven Climate Impacts of Trade Agreements*

1. Four Economic Drivers of Climate Impacts

The economically driven climate impacts of trade agreements can be defined as the impacts that reducing or eliminating tariff and non-tariff measures (NTMs)²⁸ have on GHG emissions and the social cost of those

24. See Deborah Gleeson, *Comparison of the Wikileaked Consolidated Text with the Most Recent U.S. Proposal to Rewrite the Language in the Areas of Trade and Biodiversity and Trade and Climate Change*, REDGE, <http://www.redge.org.pe/sites/default/files/20140218%20biodiversity%20climate%20change%20TPP.pdf> (last visited June 11, 2017).

25. Compare *id.* and WikiLeaks, *supra* note 21, art. SS.15 and 6.

26. See Trans-Pacific Partnership, Environment Chapter, art. 20.15, Feb. 4, 2016.

27. See ENVIRONMENTAL REVIEW GUIDELINES, *supra* note 10, app. C.

28. The United Nations Conference on Trade and Development (UNCTAD) defines non-tariff measures as “policy measures other than ordinary customs tariffs that can potentially have an economic effect on international trade in goods, changing quantities traded, or prices or both.” U.N. Conference on Trade & Dev., *International Classification of Non-Tariff Measures*, at 1, UNCTAD/DITC/TAB/2012/2/Rev.1 (2012). NTMs cover a wider scope of barriers than non-tariff barriers, which refer only to “restrictions that result from prohibitions, conditions or specific market requirements that make importation or exportation of

emissions.²⁹ The net economically driven climate impact of a particular agreement may be positive or negative. That is, a trade agreement may directly result in a net increase or decrease in GHG emissions and related costs. The net impact will depend on the combined effect, within and outside the United States, of several types of changes in economic activities driven by reductions in barriers. There are four types of changes in economic activities or economic “effects”³⁰ that primarily drive climate impacts: changes to the (a) scale, (b) composition, and (c) techniques of production, and (d) changes to the volume and mode of transportation of goods.

a. Scale

The scale effect refers to the increase in GHG emissions resulting from the higher levels of economic activity associated with trade liberalization.³¹ If the carbon intensity of an economy does not change and the scale of the economy grows, then the total level of GHG emissions must increase. The scale effect is determined by multiplying carbon intensity by the amount of

products difficult and/or costly.” JACQUES PELKMANS, ET AL., THE IMPACT OF TTIP: THE UNDERLYING ECONOMIC MODEL AND COMPARISONS 19 n.37 (2014).

29. The social cost of carbon (SCC) is a near-comprehensive estimate of economic damages associated with an incremental increase in CO₂ emissions, typically one metric ton, in a given year. Conversely, an SCC figure can represent the value of damages avoided (or benefit gained) from an incremental reduction in emissions. SCC values are already in use by U.S. government agencies. The U.S. Environmental Protection Agency (EPA) considers the SCC to be a useful indicator of the costs and benefits of CO₂ reductions. See U.S. Evtl. Prot. Agency, *Fact Sheet: Social Cost of Carbon*, 1 (2015), <http://www3.epa.gov/climatechange/Downloads/EPAactivities/social-cost-carbon.pdf>. However, institutionalized use of SCC is still in the early stages. See William Pizer et al., *Using and Improving the Social Cost of Carbon*, 346 SCIENCE 1189, 1189-90 (2014).

30. The methodology of “decomposing” the impact of trade liberalization into “effects” in order to assess its environmental impacts was developed by academics studying the environmental impacts of the North American Free Trade Agreement (NAFTA) in the 1990s. See Gene M. Grossman & Alan B. Krueger, *Environmental Impacts of a North American Free Trade Agreement*, 1-3 (Nat’l Bureau of Econ. Research, Working Paper No. 3914, 1991); see also, Brian R. Copeland & M. Scott Taylor, *North-South Trade and the Environment*, 109 Q. J. ECON. 755 (1994); WTO-UNEP, *supra* note 3, at 49. Studies “decomposing” trade liberalization into the scale, composition, and technique effects in order to measure and/or project its environmental impact have proliferated over the past few decades. *Id.* at 49-52. Few, however, have explored greenhouse-gas emissions specifically, and only a few of those have looked at specific agreements rather than a cross-section. See Bárbara Cunha & Muthukumara Mani, *DR-CAFTA and the Environment* (World Bank Latin Am. & Caribbean Region Poverty Reduction and Econ. Mgmt. Unit, Policy Research Working Paper No. 5826, 2011). A very limited number of *ex ante* environmental reviews undertaken by the European Commission refer to the scale-composition-technique framework. See discussion of the EU approach, *infra* notes 63-71 and accompanying text.

31. WTO-UNEP, *supra* note 3, at 49.

economic growth pre- and post-opening to trade.³² Given that most trade agreements slightly increase economic growth, the scale effect tends to increase GHG emissions.³³

b. Composition

The composition effect refers to how trade affects each trading partner's type and level of economic activity.³⁴ When countries trade, they will specialize in producing those goods for which they are comparatively more efficient, i.e., for which they have comparative advantage.³⁵ If a country has a comparative advantage in the factors of production (labor or capital) required for producing emissions-intensive goods, they will produce more of those goods under conditions of liberalized trade.³⁶ Conversely, if their comparative advantage is in relatively less emissions-intensive goods, liberalized trade will promote increased production of those goods.³⁷ Therefore, trade liberalization's composition effect can be associated with increasing or decreasing emissions. Similar to the scale effect, the carbon intensity of sectors does not change, but the mix of sectors can shift toward more or less carbon intensive activity depending on the comparative advantages of the parties to the agreement.

Regulations restricting emissions also affect comparative advantage. The "pollution haven" hypothesis suggests that polluting production will shift to countries where restrictions on pollution are relatively lax, i.e., to those countries where the abundant factor is the ability to pollute.³⁸ In the climate context, this hypothesis is captured by the concept of "carbon leakage." Carbon leakage refers to the situation where production transfers to other countries with weaker constraints on GHG emissions for reasons of costs, potentially leading to an increase in total emissions.³⁹ The risk of

32. See Grossman & Krueger, *supra* note 30.

33. WTO-UNEP, *supra* note 3, at 50. The new, and therefore likely relatively less emissions-intensive, capital that may be acquired in order to handle increased volumes of economic activity is captured by the technique effect rather than the scale effect. *Id.* at 51. The scale effect is also distinct from the rate of economic growth, which can be indirectly impacted by trade through changes to the rates of technological innovation and capital accumulation. *Id.* at 50.

34. *Id.*

35. See *id.*

36. *Id.*

37. *Id.*

38. Kevin P. Gallagher, *Economic Globalization and the Environment*, 34 ANN. REV. ENV'T. & RESOURCES 279, 289-90 (2009).

39. Youguo Zhang, *Scale, Technique and Composition Effects in Trade-Related Carbon Emissions in China*, 51 ENV'L. & RESOURCE ECON. 371, 372 (2012); see also You Li & C.N.

carbon leakage may be higher in certain energy-intensive and trade-sensitive industries.⁴⁰

c. Technique

The technique effect refers to the effect of trade on technologies used to produce goods and services.⁴¹ Whereas the scale and composition effects hold carbon intensity constant, the technique effect accounts for forces that reduce the carbon intensity of sectors in an economy through trade and investment.⁴² International trade can increase the availability of environmentally friendly goods and services through the importation of technological innovations, particularly for countries that would otherwise lack access to them.⁴³ Increased trade can also incentivize the development of environmentally friendly goods and services for export by offering access to new markets.⁴⁴ In the climate change context, the technique effect is primarily referenced in relation to this trade-driven diffusion of low-emission technologies.⁴⁵ An income growth-driven technique effect has been identified with respect to other types of environmental indicators. The Environmental Kuznets Curve (EKC) theory posits that people increase their demand for a clean environment as their incomes rise.⁴⁶ The empirical evidence, however, does not support the existence of an EKC with respect to CO₂ emissions.⁴⁷

Hewitt, *The Effect of Trade Between China and the UK on National and Global Carbon Dioxide Emissions*, 36 ENERGY POLY 1907, 1907-08 (2008).

40. See European Commission, *Carbon Leakage*, http://ec.europa.eu/clima/policies/ets/cap/leakage/index_en.htm (last visited June 11, 2017).

41. WTO-UNEP, *supra* note 3, at 51.

42. *Id.* at 50-51.

43. *Id.* at 51.

44. See WTO, *The Impact of Trade Opening on Climate Change*, https://www.wto.org/english/tratop_e/envir_e/climate_impact_e.htm (last visited June 11, 2017). This aspect of the technique effect provides a rationale for current plurilateral negotiations to reduce barriers to trade in environmental goods and services. See USTR, UNITED STATES AND WTO PARTNERS ANNOUNCE LAUNCH OF NEGOTIATIONS FOR ENVIRONMENTAL GOODS AGREEMENT (July 2014), <https://ustr.gov/about-us/policy-offices/press-office/press-releases/2014/July/US-and-WTO-Partners-Announce-Launch-of-Negotiations-for-Enviro-Goods-Agreement>.

45. WTO-UNEP, *supra* note 3, at 51.

46. WTO-UNEP, *supra* note 3, at 51-52. The EKC has been widely explored in the trade and development context. See, e.g., David I. Stern, *The Rise and Fall of the Environmental Kuznets Curve*, 32 WORLDDEV. 1419, 1419 (2004).

47. WTO-UNEP, *supra* note 3, at 54. See also Jeffrey A. Frankel & Andrew K. Rose, *Is Trade Good or Bad for the Environment? Sorting Out the Causality*, 87 REV. ECON. STAT. 85, 88 (2005) (noting that CO₂ is a global externality unlikely to be addressed at the national level).

d. Transportation

Trade relies on the transportation of goods. Liberalizing international trade is likely to increase demand for transportation services.⁴⁸ The transport effect, therefore, tends to *increase* emissions.⁴⁹ The transport effect is a significant component of overall economic effects. A 2013 study found that international freight transport in 2004 generated 1.205 billion tons of CO₂-equivalent emissions,⁵⁰ which represents a third of all trade-related emissions.⁵¹

More than one mode of transportation is often involved in moving a good from a producer in one country to the ultimate consumer in another. The climate impacts of each mode must be calculated because of differences in the types and volumes of associated GHG emissions. For example, container ships are particularly CO₂-emission intensive.⁵² From 2007–2012, shipping accounted for approximately 3.1% of annual global anthropogenic CO₂ emissions and approximately 2.8% of annual GHGs on a carbon dioxide equivalent (CO₂e) basis on average.⁵³ A multi-year average estimate for international shipping for the 2007–2012 period is 846 million tons of CO₂ and 866 million tons of CO₂e.⁵⁴ International shipping emissions for 2012 were estimated to be 796 million tons CO₂ and 816 million tons CO₂e for GHGs (CO₂, CH₄, and N₂O).⁵⁵ Maritime CO₂ emissions are projected to increase significantly in the next few decades, with some studies projecting growth of up to 250% by 2050.⁵⁶ Methane emissions are predicted to increase rapidly as the amount of liquefied natural gas (LNG) in the fuel mix increases.⁵⁷

Airlines transported 51.3 million metric tons of goods in 2014, representing more than 35% of global trade by value or \$18.6 billion worth of

48. WTO-UNEP, *supra* note 3, at 58.

49. *Id.* at 53, 59–60.

50. Anca Cristea et al., *Trade and the Greenhouse Gas Emissions from International Freight Transport*, 65 J. ENVIL. & ECON. MGMT. 153, 161 (2013). The authors also found that “[t]ransport emissions will grow faster than trade by value and faster than output emissions, with especially rapid growth in maritime emissions.” *Id.* at 155.

51. *Id.* at 154.

52. See James J. Corbett et al., *The Effectiveness and Costs of Speed Reductions on Emissions from International Shipping*, 14 TRANSP. & ENV'T 593, 593 (2009).

53. IMO, Third IMO GHG Study 2014: Key Findings, tbl.1(a)-(b), <http://www.imo.org/en/OurWork/Environment/PollutionPrevention/AirPollution/Pages/Greenhouse-Gas-Studies-2014.aspx> (last visited June 11, 2017).

54. *Id.* ¶ 1.1.

55. *Id.*

56. *Id.* ¶ 5.1.

57. *Id.* ¶ 5.4.

goods daily.⁵⁸ Except for diesel motor vehicles, airplanes are the most pollution-intensive mode of transportation.⁵⁹ A landmark 1999 IPCC Report on aviation emissions found that aviation accounted for 13% of all transportation-related emissions.⁶⁰

Land-based modes (trucking, rail, and pipelines) move large volumes of goods in international trade, particularly among trading partners that share a land border, and were responsible for 10.2% of global trade by volume in 2006.⁶¹ Truck-idling has also been found to contribute significantly to trade-related GHG emissions.⁶²

2. “Best Practice” for Assessing Economically Driven Climate Impacts? The EU Approach

In contrast to the United States’ current approach under Executive Order 13141, several U.S. trading partners, most notably the EU, do assess economically driven climate impacts as part of their review processes for trade and investment agreements.⁶³ The European Commission conducts Sustainability Impact Assessments (SIAs) of potential trade agreements that prioritize climate change among potential environmental impacts.⁶⁴ The Final SIA on the TTIP estimates that it would increase CO₂ emissions in the EU by 0.2%, with a social cost of carbon (SCC) of up to 91 million Euros.⁶⁵ In the United States, the Final SIA projects that CO₂ emissions

58. *Air Cargo*, Int’l Air Transp. Ass’n (IATA), <https://www.iata.org/whatwedo/cargo/Pages/index.aspx> (last visited June 11, 2017).

59. WTO-UNEP, *supra* note 3, at 60.

60. Intergovernmental Panel on Climate Change [IPCC], *Aviation and the Global Atmosphere*, at 6 (1999), <https://www.ipcc.ch/pdf/special-reports/spm/av-en.pdf>. Accounting for the climate impacts of increased aviation trade specifically is important because of how aviation emissions contribute to radiative forcing. Radiative forcing refers to how GHG emissions can impact cloud and ozone formation, which affects how much heat remains within the earth’s atmosphere. *Id.* at 3, 3 n.4. The IPCC report estimated that aviation emissions were responsible for 3.5% of the total anthropogenic radiative forcing in 1992 and projected an increase to 5% for a mid-range emission scenario by 2050. *Id.* at 8.

61. WTO-UNEP, *supra* note 3, at 58-59.

62. ICF CONSULTING, NORTH AMERICAN TRADE AND TRANSPORTATION CORRIDORS: ENVIRONMENTAL IMPACTS AND MITIGATION STRATEGIES: FINAL REPORT 49 (2001).

63. See, e.g., Glob. Affairs Can., *Environmental Assessments (EAs) of Trade Negotiations*, http://www.international.gc.ca/trade-agreements-accords-commerciaux/env/facts.aspx?lang=EN&_ga=2.5613105.380424230.1495224426-961220658.1495224424 (last updated Jan. 06, 2015).

64. See, e.g., LSE ENTERPRISE LTD, TRADE SUSTAINABILITY IMPACT ASSESSMENT OF THE COMPREHENSIVE TRADE AND INVESTMENT AGREEMENT BETWEEN THE EUROPEAN UNION AND JAPAN, FINAL INCEPTION REPORT 26 (2015) (“The overall analysis will lay a focus on the following environmental topics: climate change (GHG emissions); energy use; resource use and efficiency; ecosystems and biodiversity.”).

65. See ECORYS, *supra* note 4, at 24, 202 tbl.5.7.

would increase by 0.3%, with an SCC of up to 84.4 million Euros.⁶⁶ The increased emissions would result from growth in the scale of economic activity, technique effects, and changes in the composition of industries and trading partners.⁶⁷ The largest increase in emissions would be in China due to the relocation of some production to that country that is projected to result from the treaty.⁶⁸

The EU's methodology involves two primary steps. First, data is collected regarding the proposed trade agreement and used to model the economic effects of trade using a type of multi-sector, multi-region computer-generated equilibrium (CGE) model.⁶⁹ Second, the outputs of this modeling are inputted into the E3ME econometric model, which has fewer assumptions than standard CGE models.⁷⁰ This second model is designed to estimate (1) changes in energy consumption by user group and fuel, (2) CO₂ emissions of most energy-intensive sectors and primary energy producing sectors, (3) changes in other GHG emissions, and (4) costs of GHG and air pollutants to human health and biodiversity.⁷¹

3. Adapting the U.S. Environmental Review Process: Building on the EU Approach

Incorporating a similar two-step, two-model methodology would be an improvement on the existing U.S. environmental review process because it would ensure that estimates of trade-driven GHG emissions are generated

66. *Id.*

67. *See id.* at 199.

68. *See* Ctr. for Econ. Policy Research (CEPR), *Reducing Transatlantic Barriers to Trade and Investment, An Economic Assessment* 79 tbl.39 (2013), <http://www.trade-sia.com/ttip/wp-content/uploads/sites/6/2014/02/CEPR-Reducing-Transatlantic-Barriers-to-Trade-and-Investment-An-Economic-Assessment.pdf>.

69. CGE models operate by isolating the effect of a change in trade policy and comparing the economic performance of each party to the agreement pre- and post-implementation of the policy. CGE models are capable of capturing the simultaneous impact of liberalization of tariff and some non-tariff barriers. *See* Badri Narayanan G. et al., Int'l Inst. for Sustainable Dev., *Quantifying the Mega-regional Trade Agreements: A Review of the Models*, at 5-6, 18 (2015). The CGE model used to project the impacts of TTIP and relied upon by the European Commission accounts for non-tariff barriers and "allows for trade to impact on capital stocks through investment effects." *See* European Comm'n, *Main Aspects of the CGE Model*, http://trade.ec.europa.eu/doclib/docs/2013/march/tradoc_150762.pdf (last visited June 11, 2017).

70. *See* ECORYS, *Trade Sustainability Impact Assessment on the Transatlantic Trade and Investment Partnership (TTIP) Between the European Union and the United States of America—Final Inception Report*, at 34, Trade/2013/E1/E03 (2014) [hereinafter ECORYS Sustainability], <http://www.trade-sia.com/ttip/wp-content/uploads/sites/6/2014/06/TSIA-TTIP-Final-Inception-Report-publish2506.pdf>.

71. *Id.* at 35.

and made publicly available for review and comment. However, incorporating model-based quantitative assessment alone will not sufficiently adapt the U.S. environmental review process to assess economically driven climate impacts for at least three reasons.

First, CGE models typically focus on estimating changes that result from the reduction or removal of tariff barriers.⁷² Consequently, when applied to trade agreements between trading partners that have already lowered tariffs for many sectors (such as the United States and the EU), only relatively small economic changes may be predicted to occur in the aggregate. Using those predictions to estimate climate impacts is therefore likely to lead to relatively small projected changes in GHG emissions and mask potentially significant geographic and sector specific impacts.⁷³ CGE-driven assessments focus on aggregate impact and thus can fail to adequately address significant local or sector-specific impacts, thereby preempting any analysis of alternative negotiating scenarios and/or mitigation options.⁷⁴

Second, CGE models that incorporate NTMs may further skew estimates of potential climate impacts because they lack the theoretical rigor that tariff liberalization enjoys. For example, some of the models used to assess the economic impact of TTIP include environmental and health-related NTMs among potentially “actionable” measures,⁷⁵ i.e., measures

72. See KEVIN GALLAGHER ET AL., ENVIRONMENTAL REVIEWS OF TRADE AGREEMENTS: ASSESSING THE NORTH AMERICAN EXPERIENCE 7 (2001), <http://www3.cec.org/islandora/fr/item/1762-environmental-reviews-trade-agreements-assessing-north-american-experience-en.pdf>.

73. See *id.* at 16-17.

74. See *id.* at 14-15. Past U.S. environmental reviews predicted no significant environmental impact based on low projected economic impacts; a similar inference is likely with regard to GHG emissions absent adjustments to the USTR’s approach. See, e.g., USTR, FINAL ENVIRONMENTAL REVIEW UNITED STATES—KOREA FREE TRADE AGREEMENT at I (Sept. 2011), <https://ustr.gov/sites/default/files/uploads/Countries%20Regions/africa/agreements/pdfs/FTAs/KOREA%20Final%20Environmental%20Review.pdf> (finding that the Korea Free Trade Agreement will have no significant effects on the U.S. environment because it will not have significant impact on U.S. goods production).

Average tariffs applied by the U.S. on EU imports and by the EU on U.S. imports are less than 3%. See LIONEL FONTAGNET ET AL., CEP II, TRANSATLANTIC TRADE: WHITHER PARTNERSHIP, WHICH ECONOMIC CONSEQUENCES? 1 (2013). For TTIP, predicted one-time GDP increases are small, ranging from 0.1-0.5%. See Jeronim Capaldo, *The Trans-Atlantic Trade and Investment Partnership: European Disintegration, Unemployment and Instability* 9 (Glob. Dev. & Env’t Inst., Working Paper No. 14-03, 2014).

75. See ECORYS, *Non-Tariff Measures in EU-US Trade and Investment – An Economic Analysis* xxv-xxxii (2009), http://trade.ec.europa.eu/doclib/docs/2009/december/tradoc_145613.pdf. This report, which was commissioned and financed by the European Commission in the lead up to the TTIP negotiations, includes the U.S. Clean Air Act among divergent non-tariff measures important to U.S.-EU trade that if targeted for convergence, could lead to economic gains. *Id.* at 135, 154-55.

whose costs could be reduced by a certain percentage under TTIP.⁷⁶ Yet certain health or environmental policies that are seen as NTMs may be economically efficient instruments to incorporate negative externalities into production and consumption decisions. In such cases, a CGE model may inappropriately deem the elimination of such regulation as welfare enhancing, unless the avoided social costs are also incorporated into the model.

Third, although some climate change-sensitive, NTMs may be appropriate for quantitative assessment, they will have follow-on effects that necessitate in-depth qualitative analysis. For example, the European Commission's (EC) proposed draft Energy Chapter for the TTIP would require the United States to eliminate all restrictions on exports of natural gas to the EU.⁷⁷ The EU is heavily dependent on imports to supply its needs for crude oil and natural gas, which are the EU's two most important energy sources, and it is eager to reduce its reliance on Russian energy imports.⁷⁸ Under the terms of the EC's proposed Energy Chapter, the United States would likely extract and refine more gas and export more LNG to the EU than without the TTIP. Any attempt by the USTR to quantify the extent to which LNG exports may increase due to proposed expedited licensing for U.S. exports would also need to assess the extent to which increased exports will incentivize emissions-intensive exploration and production methods, such as hydraulic fracturing, and any climate impacts specific to those methods, such as fugitive methane emissions.⁷⁹ Incorporating this type of qualitative analysis would significantly improve the USTR's current approach.⁸⁰

76. According to the Ecorys study, approximately 50% of NTMs can be eliminated. *Id.* at xiii.

77. See *infra* note 92 and accompanying text.

78. See KEITH J. BENES, CONSIDERATIONS FOR THE TREATMENT OF ENERGY IN THE US-EU TRANSATLANTIC TRADE AND INVESTMENT PARTNERSHIP 5 (2015). Europe currently imports 53% of its demand for energy, 88% of which is for crude oil, 66% of which is for LNG. *Id.* at 7-8.

79. Jennifer Morgan & James Bradbury, *What Exporting U.S. Natural Gas Means for the Climate*, WORLD RESOURCES INST. BLOG (May 20, 2013), <http://www.wri.org/blog/2013/05/what-exporting-us-natural-gas-means-climate>.

80. See USTR, INTERIM ENVIRONMENTAL REVIEW TRANS-PACIFIC PARTNERSHIP AGREEMENT 35 (2013), <https://ustr.gov/sites/default/files/TPP%20Interim%20Review%20-%20final%20for%20posting%20-%2008.22.13.pdf> (concluding that "the risk of environmental damage due to increased domestic LNG production driven by TPP trade appears to be low."). The USTR's analysis of LNG exports in the TPP Interim Review was limited and did not mention emissions. The USTR concluded that the "risk of environmental damage due to increased domestic LNG production driven by TPP trade appears to be low." It based its conclusion on the fact that, since other TPP countries are increasing their LNG exports and the TPP will liberalize trade between those countries as well, U.S. exports will have to compete for market share, and therefore TPP is unlikely to drive substantial increased production. Additionally, the review notes that the TPP will not change any existing U.S.

In sum, the EU's approach can provide a starting point for assessing economically driven climate impacts as part of the existing U.S. environmental review process. U.S. environmental reviews should generate estimates of the scale, composition, technique, and transportation drivers⁸¹ and publish their combined predicted effect on GHG emissions for the U.S and globally.⁸² Also, they should calculate the social cost or savings of any net emissions increase or decrease, and combine quantitative assessment with qualitative analysis of emissions-sensitive sectors.

B. *Impacts on Climate Policies*

In addition to producing economically driven effects on climate change, trade agreements can also affect the development and implementation of both existing and proposed climate policies. Because of the apparently political decision to avoid references to climate change in the context of trade negotiations,⁸³ U.S. environmental reviews under Executive Order 13141 have not discussed the potential effects of trade and investment rules on climate policies. Although the USTR has not explained the basis for this omission, proponents of the current trade model have generally rejected claims that trade agreements can undermine domestic regulatory authority.

The discussion has been framed in various ways, including whether trade and investment rules have a "chilling effect" on regulatory policy or provide adequate "policy space" to accommodate governments' "right to regulate." Embedded within this debate are two distinct issues: (1) the potential for conflict between trade and investment rules and climate policies, and (2) the legal and political effects of any such conflict on the implementation and enforcement of those policies. As discussed below, evaluation of each

environmental laws regulating LNG production and that granting automatic licenses for export to TPP countries will only add six countries, most of which are not significant LNG importers.

81. The USTR has not made parameters or outputs of any modeling of environmental impacts that has been done as part of environmental reviews to date publically available, but there is evidence that it has, at minimum, seriously explored the use of economic models in environmental reviews. See USTR, REPORT OF THE QUANTITATIVE ANALYSIS WORKING GROUP TO THE INTERAGENCY ENVIRONMENT GROUP 2 (2000), https://ustr.gov/archive/assets/Document_Library/Federal_Register_Notices/2000/November/asset_upload_file597_2449.pdf. Moreover, the scale, composition, technique, and transportation drivers are already listed in the Environmental Review Guidelines for possible inclusion in the ER. See ENVIRONMENTAL REVIEW GUIDELINES, *supra* note 10, at app. C, § II.

82. This is the approach taken by the European Commission in its preliminary assessment of the TTIP, which calculated estimated changes in GHG emissions for the EU, the United States, and globally. See CEPR, *supra* note 68, at 4.

83. See *supra* notes 20-26 and accompanying text (discussing exclusion of references to climate change in the TPP).

of these issues supports the need for a detailed assessment to ensure the consistency of proposed trade agreements with climate objectives. A wide variety of climate-related policies are either already being challenged or are potential targets under trade and investment rules, and there are various legal and political mechanisms through which such challenges could affect those policies.

1. The Potential for Conflict Between Trade Rules and Climate Policies

The trade and investment rules that could conflict with climate policies can be divided into two categories: rules that specifically focus on restricting regulation of the energy sector and broader limitations on regulatory authority that can be used to challenge climate policies.

a. Specific Rules Targeting the Energy Sector

The most obvious sources of potential conflict with climate measures are trade rules that specifically target climate and energy policies. For example, the EU's proposals concerning energy trade in the TTIP negotiations include numerous provisions that could undermine climate objectives. Specifically, the EU has proposed restrictions on laws that require the use of local goods or services as a condition of eligibility for programs that promote renewable energy.⁸⁴ Such local content requirements (LCRs) are widely used at the state level in the United States to build support for renewable energy programs.⁸⁵

Even renewable energy programs without LCRs could be subject to challenge under language the EU is proposing that would prohibit the TTIP's Parties from discriminating between different types of energy with regard to access the energy transmission systems.⁸⁶ This provision could be

84. *EU – US Trade and Investment Partnership, Raw Materials and Energy, Initial EU Position Paper*, at 3, COM (July 2008), http://trade.ec.europa.eu/doclib/docs/2013/july/tradoc_151624.pdf (“[A] confirmation of prohibition of local content requirements for [renewable energy] goods, services and investments could be introduced [in the TTIP]. Commitments related to subsidies contingent on local content requirements . . . could also be included.”).

85. See Timothy Meyer, *How Local Discrimination Can Promote Global Public Goods*, 95 B.U. L. REV. 1939, 1959 (2015) (“Twenty-three states within the United States collectively have forty-four programs with renewable energy LCRs.”); see also *id.* at 1984-88 (arguing that LCRs provide necessary incentives for the adaptation of renewable energy programs that produce global public goods).

86. See Directorate-General for Trade, *TTIP: EU's Proposal for a Chapter on Energy and Raw Materials in TTIP*, art. e 4(1), TRADE 53/2016 (June 20, 2016) [hereinafter Directorate-General], <https://www.scribd.com/document/317950734/Tafta-La-proposition-de-Bruxelles-en-matiere-d-energie-et-matieres-premieres> (“Each Party shall ensure that operators of transmission systems in its territory grant access to their systems to entities of the other Party for

used to challenge feed-in tariff (FIT) policies that provide incentives, including preferential rates and long-term contracts, for producing and supplying renewable energy to the grid.⁸⁷ The EU has also proposed language in the TTIP that could limit the ability of the United States to restrict the construction of oil and gas pipelines. The EU's proposed Chapter on Energy and Raw Materials would incorporate GATT Article V—which provides for freedom of transit for goods across the territory of WTO Members⁸⁸—and includes language indicating that “the Parties recognize that Article V of GATT 1994 includes the movement of energy goods via pipelines or electricity grids.”⁸⁹ This language could potentially be used to challenge measures like the Obama administration's rejection of the proposed Keystone XL Pipeline.⁹⁰ The U.S. State Department indicated that it denied the permit for the pipeline—which would transport high carbon-intensity tar sands oil from Alberta, Canada to refineries in the United States—largely due to concerns that approving the project would undermine the United States' efforts to coordinate with other nations in addressing climate change.⁹¹

The EU's proposed Energy Chapter also states that “the Parties must agree on a legally binding commitment to eliminate all existing restrictions on the export of natural gas in trade between them. . . .”⁹² Although natural gas is generally less carbon intensive than oil or coal, increased exports of LNG from the United States under TTIP could actually increase net GHG

the transport of gas and electricity. Such access shall be granted on commercial terms that are . . . non-discriminatory (including as between types of energy) . . .”).

87. See generally U.S. ENERGY INFO. ADMIN., FEED-IN TARIFF: A POLICY TOOL ENCOURAGING DEPLOYMENT OF RENEWABLE ELECTRICITY TECHNOLOGIES (May 30, 2013), <http://www.eia.gov/to/dayinenergy/detail.cfm?id=11471#>.

88. Directorate-General, *supra* note 86, at art. XX.

89. See *id.* art. 3.

90. See DANAE AZARIA, TREATIES ON TRANSIT OF ENERGY VIA PIPELINES AND COUNTERMEASURES 63 n.31 (2015) (“[I]t could be argued that GATT Article V may entail the obligation to negotiate in good faith the construction of new pipelines . . .”).

91. See U.S. DEP'T OF STATE, RECORD OF DECISION AND NATIONAL INTEREST DETERMINATION, TRANSCANADA KEYSTONE PIPELINE, L.P. APPLICATION FOR PRESIDENTIAL PERMIT § 6.3 (Nov. 3 2015), <https://keystonepipeline-xl.state.gov/documents/organization/249450.pdf>; see also *infra* note 128 and accompanying text. TransCanada resubmitted its application in response to a Memorandum issued by President Trump that directed the relevant federal agencies to expedite review of the application and approve it “as warranted.” See Memorandum from Office of the Press Secretary on Construction of the Keystone XL Pipeline (January 24, 2017), <https://www.whitehouse.gov/the-press-office/2017/01/24/presidential-memorandum-regarding-construction-keystone-xl-pipeline>. On May 24, 2017, the State Department approved the permit. See Press Release, U.S. Dep't of State, Office of the Spokesman, Issuance of Presidential Permit to TransCanada for Keystone XI Pipeline (March 24, 2017), <https://www.state.gov/r/pa/prs/ps/2017/03/269074.htm>.

92. See Directorate-General, *supra* note 86.

emissions due to a variety of factors. Increased LNG exports could encourage expanded production of natural gas in the United States, which could result in increased releases of methane, a much more powerful GHG than carbon dioxide.⁹³ In addition, the process of liquefaction, transportation, and regasification of natural gas is extremely energy intensive, making exported natural gas significantly more carbon intensive than gas used domestically.⁹⁴

b. Conflicts under Broad Trade and Investment Rules

In addition to rules specifically addressing regulation of the energy sector, climate policies could also be affected by rules contained in trade and investment agreements that apply more broadly to regulatory measures. Restrictions on tariffs, for example, could make it more difficult to implement carbon pricing in the form of either carbon taxes or emissions trading programs. The International Energy Agency has concluded that

carbon pricing will be needed as a feature of the national and international policy response [to climate change]. . .to reach across the whole of the economy (and particularly to influence private investors) there is no substitute for correct energy pricing, including the creation of expectations of a rising trend in carbon prices.⁹⁵

Taxes applied to impose carbon pricing on imported products (“border tax adjustments” or BTAs) are an important element of such programs, preventing the “leakage” of the avoided GHG emissions to offshore manufacturers.⁹⁶ BTAs, however, may violate tariff bindings if they are determined to be import charges rather than internal taxes applied at the border.⁹⁷

The broad nondiscrimination standards that are a central element of trade agreements could also be used to undermine climate policies. Even in the absence of specific restrictions on local content requirements, such as those that the EU is attempting to secure in the TTIP, nondiscrimination rules under the WTO’s General Agreement on Tariffs and Trade (GATT) and Agreement on Trade-Related Investment Measures (TRIMs) have al-

93. See Morgan & Bradbury, *supra* note 79.

94. *Id.*

95. Int’l Energy Agency, *Energy & Climate Change: World Energy Outlook Special Report*, 135 (2015), <https://www.iea.org/publications/freepublications/publication/WEO2015SpecialReportonEnergyandClimateChange.pdf>.

96. See Joel P. Trachtman, *WTO Law Constraints on Border Tax Adjustment and Tax Credit to Reduce the Competitive Effects of Carbon Taxes* 21 (2016), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2738752.

97. *Id.* at 6-17.

ready been used to successfully challenge LCRs in renewable energy programs.⁹⁸ Any climate policy that differentiates between products or services based on their climate impacts could be similarly challenged as impermissibly discriminatory.⁹⁹

Investment rules contained in trade agreements arguably present an even greater potential for conflict with climate policies.¹⁰⁰ Investment disputes can be initiated by foreign investors through a process known as “investor-state dispute settlement” (ISDS), unlike trade disputes, which can only be brought by governments.¹⁰¹ Moreover, investment rules generally apply to any measure of a Party that affects a covered investment of another Party’s investor. Accordingly, investment rules can be used by fossil fuel companies to challenge a wide variety of climate measures.

For example, TransCanada, the Canadian corporation whose permit for the construction of the Keystone XL pipeline was initially rejected by the Obama administration based on concerns about the implications for climate policy,¹⁰² brought a claim under NAFTA’s investment chapter seeking \$15

98. See WTO Panel Report, *India—Certain Measures Relating to Solar Cells and Solar Modules*, WT/DS456/R (Feb. 24, 2016) (domestic content requirements in Indian solar power program held to violate Article 2.1 of TRIMs Agreement and Article III:4 of GATT); see also Appellate Body Report, *Canada—Certain Measures Affecting the Renewable Energy Generation Sector and Canada—Measures Relating to the Feed-In Tariff Program*, WT/DS412/AB/R and WT/DS426/AB/R (May 6, 2013) (domestic content requirement in Ontario’s feed-in tariff program for renewable energy held to violate Article 2.1 of TRIMs Agreement and Article III:4 of GATT). Similar challenges are pending against other renewable energy programs containing LCRs. See generally Meyer, *supra* note 85, at 1949-50.

99. See Christian Häberli, *WTO Rules Can Prevent Climate Change Mitigation for Agriculture 2* (Soc’y of Int’l Econ. L. (SIEL), Fifth Biennial Global Conference, Working Paper No. 2016/06, 2016), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2800011 (“[D]iscrimination follows differentiation. It is implicit in all subsidies and other incentives offered exclusively to climate-friendly investments and operations. It may also appear in border measures compensating disadvantages for domestic producers resulting from carbon emission limitations, or of prohibitions of certain energy sources.”).

100. See generally Gus Van Harten, *Foreign Investor Protection and Climate Action: A New Price Tag for Urgent Policies 1* (Osgoode Legal Stud. Research Paper No. 21/2016, 2015), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2697555.

101. Compare, for example, the procedures under the United States-Korea Free Trade Agreement governing the settlement of trade disputes in Chapter 22, Section B, (Free Trade Agreement between the United States of America and the Republic of Korea, S. Kor.-U.S., Ch. 22 § B, Mar. 10, 2012, https://ustr.gov/sites/default/files/uploads/agreements/fta/korus/asset_upload_file973_12721.pdf), with the provisions for investment disputes in Chapter 11, Section B, Free Trade Agreement between the United States of America and the Republic of Korea, S. Kor.-U.S., Ch. 11 § B, March 10, 2012, https://ustr.gov/sites/default/files/uploads/agreements/fta/korus/asset_upload_file587_12710.pdf).

102. See *infra* note 128 and accompanying text.

billion in damages.¹⁰³ TransCanada only withdrew the claim after the Trump Administration approved construction of the pipeline.¹⁰⁴ Investment chapters in new free trade agreements could significantly expand the access of fossil fuel companies to ISDS, potentially resulting in numerous similar claims challenging climate measures.¹⁰⁵

One standard of investor protection that could be a source of tension with climate policies is the right to fair and equitable treatment (FET), which has been interpreted to include protection from changes in regulatory standards that interfere with investors' "legitimate expectations" about their investments.¹⁰⁶ Achieving the dramatic reduction in GHG emissions that will be necessary to stay below the 2°C threshold¹⁰⁷ will require significant changes in current government energy policies beyond the commitments made in Intended Nationally Determined Contributions (INDCs) under the Paris Agreement. The United Nations Environmental Program (UNEP) has estimated that full implementation of INDCs would only limit average temperature increase by the end of the century to <3-3.5°C.¹⁰⁸

103. See Request for Arbitration (ICSID) at 39, *TransCanada Corp. v. United States*, (2016), <http://www.italaw.com/sites/default/files/case-documents/italaw7407.pdf>.

104. *Approval of Keystone XL's Presidential Permit Ends NAFTA Claim*, INSIDE U.S. TRADE DAILY REP. (Mar. 24, 2017), <https://0-insidetrade.com.gull.georgetown.edu/trade/approval-keystone-xls-presidential-permit-ends-nafta-claim>.

105. See BEN BEACHY, CLIMATE ROADBLOCKS: LOOMING TRADE DEALS THREATEN EFFORTS TO KEEP FOSSIL FUELS IN THE GROUND 6 (Mar. 2016), <http://www.sierraclub.org/sites/www.sierraclub.org/files/uploads-wysiwig/climate-roadblocks.pdf> ("The two deals [TPP and TTIP] would newly grant ISDS rights to more than 100 foreign fossil fuel corporations that own more than 1,000 U.S. subsidiaries—more than the total number of fossil fuel firms that have such rights under all 56 existing U.S. trade and investment pacts combined."). Although President Trump has withdrawn from the TPP, he has indicated that United States will continue to pursue bilateral FTAs. TPP Withdrawal Memorandum, *supra* note 17.

106. U.N. Conference on Trade & Dev., *Fair and Equitable Treatment: UNCTAD Series on Issues in International Investment Agreements II*, at 63, UNCTAD/DIAE/IA/2011/5 (2012), http://unctad.org/en/Docs/unctaddiaeia2011d5_en.pdf ("Protection of investors' legitimate expectations has been repeatedly identified by arbitral tribunals as a key element of the FET standard."). See also Matthew C. Porterfield, *State Practice and the (Purported) Obligation under Customary International Law to Provide Compensation for Regulatory Expropriations*, 37 N.C. J. INT'L. & COM. REG. 159, 166-71 (2011) (discussing interpretation of FET to include a right to a stable regulatory environment that does not frustrate investors' "legitimate expectations").

107. See *Paris Agreement*, *supra* note 1, art. 2(1)(a).

108. See UNEP, *The Emissions GAP Report 2015*, at xviii, (2015), http://uneplive.unep.org/media/docs/theme/13/EGR_2015_301115_lores.pdf. The International Energy Agency has a slightly more optimistic assessment. Int'l Energy Agency, *supra* note 95, at 4, ("Pledges for COP21 will have a positive impact on future energy sector trends, but fall short of the major course correction required to achieve the agreed climate goal. If climate ambition is not raised progressively, it is estimated that the path set by the INDCs would be consistent

Protection for investors' expectations about existing investments tends to limit the ability of governments to modify regulatory standards. Keeping below a 2°C increase, in contrast, will require significant government interventions that will disrupt the energy sector and shift production from fossil fuels to renewable sources. Accordingly, a right to regulatory stability threatens to undermine the regulatory flexibility that will be necessary to address climate change.¹⁰⁹

2. The Relationship between International Trade and Investment Rules and Climate Policies

Despite the numerous examples of trade and investment rules being used to challenge climate measures, concerns over the potential conflicts with domestic regulatory standards have been rejected as unfounded on the grounds that the international adjudication and enforcement systems for trade and investment rules do not have the capacity to directly modify domestic law.¹¹⁰ As discussed below, this argument ignores the variety of ways—both legal and political—in which the provisions of international trade agreements can affect domestic policies, including climate measures.

The principal remedy for a violation of a trade rule is the authorization of the “suspension of concessions” (i.e. the imposition of trade sanctions) by the complaining country.¹¹¹ The WTO’s Dispute Settlement Body does not have the authority to compel the substantive modification or suspension of the offending measure. Similarly, a claimant in an investor-state dispute may seek restitution of property or the award of monetary damages¹¹² but

with an average global temperature increase of around 2.7 degrees Celsius (°C) by 2100, falling short of limiting the increase to no more than 2°C.”)

109. See Van Harten, *supra* note 100, at 1 (“[N]ot all forms of investment are compatible with a stable climate. ISDS puts a priority on foreign investment protection that skews the playing field in favour of larger incumbents in the resource sector at the expense of domestic investors and smaller players in alternative energy.”).

110. See, e.g., Jeffrey Zients, Director of the National Economic Council and Assistant to the President for Economic Policy, *Investor-State Dispute Settlement (ISDS) Questions and Answers* (Feb. 26, 2015), <https://www.whitehouse.gov/blog/2015/02/26/investor-state-dispute-settlement-ids-questions-and-answers> (“[T]he reality is that ISDS does not and cannot require countries to change any law or regulation.”).

111. See, e.g., *Understanding the Rules and Procedures Governing the Settlement of Disputes*, art. 22, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 2, 1869 U.N.T.S. 401, [hereinafter DSU], https://www.wto.org/english/docs_e/legal_e/28-dsu.pdf.

112. See, e.g., U.S. DEP’T OF STATE, 2012 MODEL U.S. BILATERAL INVESTMENT TREATY, art. 34(1), <http://www.state.gov/documents/organization/188371.pdf> (last visited May 13, 2017) (“Where a tribunal makes a final award against a respondent, the tribunal may award, separately or in combination, only: (a) monetary damages and any applicable interest; and (b)

not injunctive or declaratory relief, such as an order for the government to cease enforcing a law against the investor.¹¹³

Yet despite the limited remedial authority of international dispute settlement mechanisms, trade and investment rules can result in the modification of domestic law, including domestic climate regulations. As discussed below, these effects can occur either when the relevant trade or investment rule has been given domestic legal effect, or when the rule, or its enforcement through international dispute settlement procedures, generates sufficient political pressure on policymakers to induce them to modify the domestic measure. Significantly, these effects can also include interference with international efforts to collaborate on climate policy.

a. The Domestic Legal Status of International Trade and Investment Rules

The assertion that trade and investment rules cannot modify domestic law appears to be based on an inaccurate assumption that these rules lack domestic legal effect. The domestic status of international law is usually discussed in the context of the distinction between the “monist” approach, which treats international law as part of the same legal system as domestic law, and the “dualist” approach, which treats it as a distinct legal system.¹¹⁴ The United States approach to international law in general—and international trade law in particular—contains elements of both monism and dualism.

The implementing legislation for U.S. trade agreements typically provides that *federal law* may not be challenged in federal court on the grounds that it is inconsistent with a provision of a trade agreement.¹¹⁵ In contrast, the federal government may seek judgments in federal court declaring that

restitution of property, in which case the award shall provide that the respondent may pay monetary damages and any applicable interest in lieu of restitution.”).

113. At least this is the case under U.S. investment treaties, although there is support for the position that there is no inherent limit on the award of “non-pecuniary remedies” in ISDS proceedings. See generally Christoph Schreuer, *Non-Pecuniary Remedies in ICSID Arbitration*, 20 *ARB. INT'L* 325 (2004). And even under current U.S. practice, an investment tribunal may order “an interim measure of protection to preserve the rights of a disputing party, or to ensure that the tribunal’s jurisdiction is made fully effective, including an order to preserve evidence in the possession or control of a disputing party or to protect the tribunal’s jurisdiction.” 2012 MODEL U.S. BILATERAL INVESTMENT TREATY, *supra* note 112, art. 28(8).

114. See generally John H. Jackson, *Status of Treaties in Political Systems: A Policy Analysis*, 86 *AM. J. INT’L L.* 310, 313-15 (1992).

115. See, e.g., 19 U.S.C. § 3312(A)(1) (2012) (“No provision of [NAFTA], nor the application of any such provision to any person or circumstance, which is inconsistent with any law of the United States shall have effect”).

state or local laws—including climate measures—are preempted by a trade or investment rule.¹¹⁶

Current U.S. practice with regard to bilateral investment treaties (BITs) is to ratify them as self-executing treaties—meaning that they can be directly enforced in federal courts against either state law or prior federal legislation.¹¹⁷ Accordingly, both federal and state climate measures are subject to domestic legal challenges under U.S. BITs.

b. The Political and Signaling Effects of Trade and Investment Rules on Climate Policy

In addition to direct legal effects, international trade and investment rules can also exert political pressure that could affect climate policies. This pressure could come in various forms, starting with the broad normative force of international law on policymakers.

As Louis Henkin famously observed, “almost all nations observe almost all principles of international law and almost all of their obligations almost all of the time.”¹¹⁸ The general “compliance pull” of international law is widely accepted.¹¹⁹ Even treaties that lack adjudication or enforcement mechanisms can induce government compliance by, *inter alia*, generating a sense of legal obligation, creating reputational risk for noncompliance, and mobilizing domestic constituencies.¹²⁰

116. See, e.g., 19 U.S.C. § 3312(B)(2) (2012) (emphasis added) (“No State law, or the application thereof, may be declared invalid as to any person or circumstance on the ground that the provision or application is inconsistent with [NAFTA], *except in an action brought by the United States for the purpose of declaring such law or application invalid.*”).

117. See 157 Cong. Rec. S5339 (daily ed. Sept. 6, 2011) (Resolution of Advice and Consent for the Treaty Between the Government of the United States of America and the Government of the Republic of Rwanda Concerning the Encouragement and Reciprocal Protection of Investment), <http://www.gpo.gov/fdsys/pkg/CREC-2011-09-06/pdf/CREC-2011-09-06-pt1-PgS5339.pdf> (declaring that the “Articles [providing substantive rights to foreign investors] and other provisions that qualify or create exceptions to these Articles are self-executing.”).

118. LOUIS HENKIN, *HOW NATIONS BEHAVE* 47 (2d ed. 1979).

119. See THOMAS M. FRANCK, *THE POWER OF LEGITIMACY AMONG NATIONS* 3 (1990) (“In the international system, rules usually are not enforced yet they are mostly obeyed. Lacking support from a coercive power comparable to that which provides backing for the laws of a nation, the rules of the international community nevertheless elicit much compliance on the part of sovereign states.”); see also ANDREW T. GUZMAN, *HOW INTERNATIONAL LAW WORKS: A RATIONAL CHOICE THEORY* (2008) (arguing that states are motivated to comply with their international commitments by concerns about reciprocal non-compliance, retaliation, and reputation even absent coercive enforcement).

120. Daniel Bodansky, *Legally Binding Versus Non-Legally Binding Instruments*, in *TOWARDS A WORKABLE AND EFFECTIVE CLIMATE CHANGE REGIME* 155, 161 (Scott Barrett et al. eds., 2015), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2649630.

International climate policy in particular is predicated on the ability of instruments like the Paris Agreement to affect domestic policy even in the absence of direct domestic legal effect. International rules can provide a framework for countries to overcome the collective action problem presented by climate change, given that there is little incentive for any country to adopt mitigation measures without some assurance of similar efforts by others.¹²¹ Accordingly, the debate over the extent to which the provisions of international trade and investment agreements can “chill” domestic policy—including climate policy—seems strangely detached from more general assumptions about the normative force of international law.

Moreover, compared with other areas of international law, trade and investment rules are enforceable through relatively robust international dispute settlement procedures and remedial mechanisms. The system of “suspension of concessions” for violations of trade rules is intended to exert economic and political pressure on the targeted countries in order to persuade them to modify or repeal the offending measures.¹²² The potential for multi-million dollar awards can similarly induce governments to modify measures that are targeted in investment disputes, even before there has been any finding of liability.¹²³

121. See Charlotte Streck et al., *The Paris Agreement: A New Beginning*, 13 J. EUR. ENVTL. & PLAN. L. 3, 27-28 (2016) (emphasis added) (“Climate change represents a collective action problem par excellence. The effects of GHG emissions . . . are globally distributed, whereas the costs of reducing emissions . . . are concentrated. Although maximum benefit would be derived from all countries reducing GHG emissions to the full extent of their capabilities, an individual country risks taking on the cost without deriving the benefit where other major emitters do not reciprocate, or choose to freeride. With GHG emissions still inextricably linked to key economic sectors, often in global competition, few countries are willing to take this risk. *The purpose of an international treaty is, in part, to create mutual confidence in reciprocity, diminish the risk of free-riders and overcome the collective action problem through enhanced coordination.*”).

122. See DSU, *supra* note 111, art. 22.1 (“[N]either compensation nor the suspension of concessions or other obligations is preferred to full implementation of a recommendation to bring a measure into conformity with the covered agreements”); see also John H. Jackson, *International Law Status of WTO Dispute Settlement Reports: Obligation to Comply or Option to “Buy Out”?*, 98 AM. J. INT’L L. 109, 123 (2004) (“[T]he result of a WTO dispute in a panel or (sometimes) appellate report that rules that the laws or other measures of a respondent nation are inconsistent with its WTO obligations is to create an international law obligation to comply with that report . . .”). International trade law in particular is often pointed to as an example of the capacity of international law to influence state behavior. PANAGIOTIS DELIMATIS, *INTERNATIONAL TRADE IN SERVICES AND DOMESTIC REGULATIONS: NECESSITY, TRANSPARENCY, AND REGULATORY DIVERSITY* 5 (2007) (suggesting that the WTO’s dispute settlement procedures “arguably constitute the strongest dispute settlement mechanism in the history of international law.”).

123. Uruguay, for example, almost amended its cigarette packaging laws in response to an investment claim brought by Philip Morris in 2010. See Robert Stumberg, *Safeguards for Tobacco Control: Options for the TPPA*, 39 AM. J.L. & MED. 382, 395-97 (2013); Bernardo M.

Although the United States has not yet lost any ISDS proceedings, there are numerous examples of the United States modifying both administrative and legislative standards in response to adverse WTO decisions. Federal law is not subject to domestic legal challenges based on inconsistency with trade rules,¹²⁴ but the federal government may exercise existing authority to modify federal regulations in response to a trade dispute.¹²⁵ The government has exercised this authority in a number of cases, including the longstanding dispute with Mexico over the standards for labeling tuna as “dolphin safe.”¹²⁶ Congress also can modify *legislative* standards in response to trade or investment disputes, as demonstrated by its exclusion of beef and pork from statutory country of origin labeling (COOL) requirements that the WTO’s Appellate Body concluded violated certain WTO obligations.¹²⁷

Not only can trade and investment rules be used in a similar manner to create political and economic pressure to modify climate policies of individ-

Cremades, Jr., *Third Party Litigation Funding: Investing in Arbitration*, 8 *TRANSNAT’L DISP. MGMT.* 18 (2011), <http://www.curtis.com/siteFiles/Publications/TDM.pdf>. The claim was eventually rejected on the merits in July of 2016. Philip Morris Brands Sàrl, Oriental Republic of Uruguay, Award, ICSID Case No. ARB/10/7 45-46 (July 8, 2016), <http://www.italaw.com/sites/default/files/case-documents/italaw7417.pdf>.

124. See, e.g., 19 U.S.C. § 3312 (A)(1) (2012); *supra* note 115 and accompanying text.

125. See, e.g., H.R. REP. NO. 103-316 (1994), *reprinted in* 1994 U.S.C.C.A.N. 4040, 4050, 1994 WL 16137731 (“Section 102(a)(1) [of the Uruguay Round Agreements Act] clarifies that no provision of a Uruguay Round agreement will be given effect under domestic law if it is inconsistent with federal law, including provisions of federal law enacted or amended by the bill. *Section 102(a)(1) will not prevent implementation of federal statutes consistently with the Uruguay Round agreements, where permissible under the terms of such statutes.* Rather, the section reflects the Congressional view that necessary changes in federal statutes should be specifically enacted rather than provided for in a blanket preemption of federal statutes by those agreements.”).

126. See Enhanced Document Requirements and Captain Training Requirements To Support Use of the Dolphin Safe Label on Tuna Products, 81 Fed. Reg. 15444, 15445 (Mar. 23, 2016), <https://www.gpo.gov/fdsys/pkg/FR-2016-03-23/pdf/2016-06450.pdf> (noting that the United States has repeatedly modified its regulations governing the labeling of tuna as “dolphin safe” in response to rulings by the WTO’s Appellate Body that the regulations violated provisions of the Agreement on Technical Barriers to Trade and the General Agreement on Tariffs and Trade).

127. See Removal of Mandatory Country of Origin Labeling Requirements for Beef and Pork Muscle Cuts, Ground Beef, and Ground Pork, 81 Fed. Reg. 10755 (Mar. 2, 2016) (“The Consolidated Appropriations Act, 2016 amended the [Agricultural Marketing Act of 1946] to remove muscle cut beef and pork, and ground beef and pork from COOL requirements in order to bring the United States into compliance with its international trade obligations.”). Congress acted after the WTO’s Appellate Body rejected the United States attempt to bring the COOL program into compliance through administrative actions. See generally *United States - Certain Country of Origin Labelling (COOL) Requirements Recourse to Article 21.5 of the DSU by Canada and Mexico*, WT/DS384, 386/AB/RW (May 18, 2015).

ual countries, they can also potentially interfere with efforts to promote coordinated international action on climate change. For example, in its decision rejecting the Keystone XL Pipeline the Obama administration noted that

a decision to approve this proposed Project would undermine U.S. objectives on climate change; it could call into question internationally the broader efforts of the United States to transition to less-polluting forms of energy and would raise doubts about the U.S. resolve to do so. In turn, this could raise questions for some countries about how aggressively they should combat climate change domestically, and potentially reduce the United States' ability to advance climate and broader objectives with allies and other partners in various bilateral and multilateral contexts.¹²⁸

The Trump Administration's subsequent approval of the pipeline, in conjunction with TransCanada's withdrawal of its ISDS claim,¹²⁹ undermined the United States' capacity to coordinate with other countries on climate change. Trade and investment challenges to other climate measures could similarly reduce the effectiveness of international efforts like the Paris Agreement to signal to investors and the energy sector that governments are moving toward policies that will reward the development and deployment of clean energy.¹³⁰

128. See U.S. DEP'T OF STATE, RECORD OF DECISION AND NATIONAL INTEREST DETERMINATION TRANS-CANADA KEYSTONE PIPELINE, L.P. APPLICATION FOR PRESIDENTIAL PERMIT 6.3 (2015).

129. See *supra* note 104 and accompanying text.

130. See Remarks at the First Session of the United Nations Climate Change Conference in Le Bourget, France, 2015 DAILY COMP. PRES. DOC. 847 (Nov. 30, 2015), <https://www.whitehouse.gov/the-press-office/2015/11/30/remarks-president-obama-first-session-cop21> ("If we put the right rules and incentives in place, we'll unleash the creative power of our best scientists and engineers and entrepreneurs to deploy clean energy technologies and the new jobs and new opportunities that they create all around the world. There are hundreds of billions of dollars ready to deploy to countries around the world if they get the signal that we mean business this time. Let's send that signal."); see also Secretary-General Ban Ki-moon, UN, *Remarks at meeting of at UN Global Compact Caring for Climate Business Forum*, UN NEWS CENTER, Dec. 8, 2015, <https://www.un.org/sg/en/content/sg/speeches/2015-12-08/remarks-meeting-un-global-compact-caring-climate-business-forum> ("Across the world, businesses and investors are standing up for a strong agreement in Paris that sends the right market signals. They are asking for a clear message that the transition to cleaner, low emissions energy sources is necessary, inevitable, irreversible and beneficial."); Press Release, Office of the Press Secretary, U.S. Leadership and the Historic Paris Agreement to Combat Climate Change (Dec. 12, 2015), <https://www.whitehouse.gov/the-press-office/2015/12/12/us-leadership-and-historic-paris-agreement-combat-climate-change> (The Paris Agreement "Provid[es] a strong, long-term market signal that the world is locking in a low-carbon future This will make it far easier to draw in the largest pools of capital that need long-term certainty in order to invest in clean technologies.").

IV. MITIGATION ANALYSIS

Executive Order 13141 states that the environmental review process, in addition to identifying potential environmental effects of trade agreements, is also intended to “help facilitate consideration of appropriate responses to those effects whether in the course of negotiation, through other means, or both.”¹³¹ The Environmental Review Guidelines similarly indicate that “[w]here significant regulatory and/or economically driven environmental impacts have been identified, there shall be an analysis of options to mitigate negative impacts. . . .”¹³²

Analysis of options to mitigate economically driven climate impacts should focus on potential approaches to offsetting projected increases in GHG emissions to ensure that the proposed agreement is, at a minimum, carbon neutral. Analysis of options for mitigating regulatory impacts should focus on identifying alternative provisions for the agreement that would preserve the ability of governments to implement climate mitigation measures.

A. Mitigation of Economically Driven Increases in GHG Emissions

A variety of potential approaches to mitigating projected economically driven increases in GHG emissions deserve consideration. If the analysis indicates that the increases would result from changes to trade flows with regard to certain products due to tariff reductions, the potential to avoid those increased emissions by maintaining higher tariff bindings on those products should be assessed.

An alternative strategy being pursued in the negotiations on the Environmental Goods Agreement (EGA) involves reducing tariffs on designated “environmental goods.”¹³³ In theory, this approach could be used to mitigate the increased emissions that would result from tariff reductions on other products. The climate benefits of the EGA, however, could be limited given the relatively low levels of tariffs that many of the countries involved in the negotiations already apply.¹³⁴ Moreover, critics have

131. Exec. Order No. 13,141, 64 FR 63169 § 2 (Nov. 18, 1999); see also ENVIRONMENTAL REVIEW GUIDELINES, *supra* note 10, § V(D)(2) (emphasis added) (“[A]nalysis of options to mitigate negative impacts . . . may include changes to negotiating positions as well as environmental policy responses outside the trade agreement . . .”).

132. ENVIRONMENTAL REVIEW GUIDELINES, *supra* note 10, § V(D)(2).

133. See USTR, ENVIRONMENTAL GOODS AGREEMENT, <https://ustr.gov/trade-agreements/other-initiatives/environmental-goods-agreement> (last visited June 11, 2017).

134. Rene Vossenaar, *Securing Climate Benefits in the Environmental Goods Agreement*, BII-ORES, Dec. 2014, at 4, 7, http://www.ictsd.org/sites/default/files/review/biores8-10_0.pdf (“[W]hile a tariff cutting EGA is certainly a welcome step forward, the impact on tariff

claimed that the lack of a clear definition of covered “environmental goods” could result in liberalization in the trade of products that exacerbate climate change.¹³⁵ Accordingly, assessments in environmental reviews of the potential to mitigate increases in GHG emissions by reducing tariffs on “environmental goods” should include quantitative analysis demonstrating the projected climate benefits of liberalization with regard to specific products.

A potentially more promising approach to mitigating increased GHG emissions that merits consideration would be to include restrictions on fossil fuel subsidies in trade agreements. Globally, fossil fuel subsidies exceed \$500 billion annually and increase GHG emissions by encouraging the production and consumption of fossil fuels.¹³⁶ The International Monetary Fund has estimated that elimination of fossil fuel subsidies would result in a 13% reduction of energy-related CO₂ emissions (as well as significant reductions in other air pollutants).¹³⁷ Restrictions on fossil fuel subsidies in bilateral or regional trade agreement could serve as catalysts for the broader global restrictions that would be needed to achieve these reductions, which would more than offset projected economically induced increases in GHG from trade liberalization. More immediately, limits on fossil subsidies in trade agreements could help countries achieve the INDCs that they committed to under the Paris Agreement.¹³⁸

levels in environmental goods is likely to be relatively small given that MFN-applied tariffs in most EGA participant countries are already low . . .”).

135. TRANSP. & ENV'T, ENVIRONMENTAL GOODS AGREEMENT 3 (Sept. 2015), https://www.transportenvironment.org/sites/te/files/publications/2015%2009%20TE_EGA%20briefing%20note_FINAL.PDF (“We believe that a robust assessment methodology would ensure that biofuels generically be excluded [from the EGA] as they are often worse than fossil fuels from a climate perspective Likewise the inclusion of aviation engines, with aviation being the most energy and climate intensive mode of transport, does not support the transition to an energy efficient . . . transport system.”).

136. See Int'l Energy Agency, *supra* note 95, at 90.

137. IMF, *Energy Subsidy Reform: Lessons and Implications* 18 (Jan. 2013), <http://www.imf.org/external/np/pp/eng/2013/012813.pdf> (eliminating fossil fuel subsidies “would reduce CO₂ emissions by 4½ billion tons, representing a 13 percent decrease in global energy-related CO₂ emissions. Eliminating subsidies would also generate significant health benefits by . . . result[ing] in a reduction of 10 million tons in SO₂ emissions and a 13 percent reduction in other local pollutants.”).

138. See generally Laura Merrill et al., *Fossil-Fuel Subsidies and Climate Change Options for policy-makers within their Intended Nationally Determined Contributions* (GSI & IISD, Working Paper NA2015:905, 2015), http://www.iisd.org/gsi/sites/default/files/FFS_Climate.pdf; see also Shelagh Whitley & Laurie van der Burg, *Fossil Fuel Subsidy Reform: From Rhetoric to Reality* (Glob. Comm'n on the Economy and Climate, Working Paper, 2015), http://2015.newclimateeconomy.report/wp-content/uploads/2015/11/Fossil-fuel-subsidy-reform_from-rhetoric-to-reality.pdf.

B. Mitigation of Impacts on Climate Regulations

A variety of approaches to mitigating the effects of proposed trade agreements on climate policies could also be assessed in environmental reviews. For example, provisions could be included in proposed trade agreements that would protect renewable energy programs, BTAs for carbon pricing mechanisms, and other climate mitigation measures from challenge under trade and investment rules.¹³⁹ The protections could take a variety of forms, including “carve outs” of climate measures from part or all of proposed trade agreements,¹⁴⁰ “peace clauses” prohibiting challenges to climate measures for a specified period of time,¹⁴¹ or safeguards modeled on the “green light” provisions of the Agreement on Subsidies and Countervailing Measures (SCM Agreement).¹⁴² Alternatively, the United States could negotiate separate agreements with its trading partners that would preclude the use of trade agreements to challenge climate measures.¹⁴³

The mitigation analysis should consider the extent to which these safeguards, if applied to all trade and investment agreements in force between the Parties,¹⁴⁴ could not only mitigate potential adverse climate impacts but

139. See *supra* Section III(B)(1).

140. Gus Van Harten, *An ISDS Carve-Out to Support Action on Climate Change 1-2* (Osgoode Legal Studies, Research Paper No. 38, 2015) (proposing language to be included in a multilateral climate agreement that would exclude climate measures from ISDS challenges).

141. Peace clause provisions could be modeled on Article 13 of the WTO’s Agreement on Agriculture, which provided agricultural subsidies with temporary protection from trade challenges. See Agreement on Agriculture art. 13, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1867 U.N.T.S. 410, https://www.wto.org/english/docs_e/legal_e/14-ag_01_e.htm. The Agreement on Agriculture’s peace clause expired at the end of 2003. See *id.* at art. 1(f).

142. Under the “green light” provisions of the SCM Agreement certain subsidies, including “assistance to promote adaptation of existing facilities to new environmental requirements,” were exempt from dispute settlement proceedings until the expiration of the provisions in 2000. Agreement on Subsidies and Countervailing Measures art. 8.2(c), Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1867 U.N.T.S. 410; see also *id.* at art. 31. Broader provisions—with or without a time limitation—could be used to protect climate measures from trade challenges.

143. The analysis of options to mitigate adverse environmental impacts may include actions external to the trade agreement being negotiated. See *supra* note 131 and accompanying text.

144. There are potential legal obstacles to using a provision in a bilateral or regional agreement to block WTO challenges to climate policies. A 2015 decision by the WTO’s Appellate Body raises questions about the extent to which states may use bilateral or regional agreements to limit use of the WTO’s dispute settlement procedures with regard to climate measures. In *Peru – Additional Duty on Imports of Certain Agricultural Products*, the Appellate Body rejected the argument made by Peru that a provision in its free trade agreement with Guatemala precluded Guatemala from challenging Peru’s imposition of an additional duty on certain agricultural products. Appellate Body Report, *Peru – Additional Duty on Imports of*

also result in an agreement with positive effects for climate policy. This would be consistent with the mandate under Executive Order 13141 to “identify potential environmental effects of trade agreements, *both positive and negative*.”¹⁴⁵

V. CONCLUSION

The trade and climate policies of the United States are inextricably interconnected. Trade liberalization tends to increase net GHG emissions, and trade and investment rules can undermine climate policies. These linkages, however, are largely unacknowledged and accordingly have not played a role in the development of U.S. trade policy. The United States could begin to work toward promoting coherence between its trade policy and climate goals by including consideration of both the economically driven and regulatory impacts of proposed trade agreements in environmental reviews conducted pursuant to Executive Order 13141. Careful assessment of the effects of trade policies on climate change could provide policymakers with guidance on options for avoiding adverse impacts and potentially identify mitigation strategies—such as including restrictions on fossil fuel subsidies in trade agreements—that would advance both trade and climate objectives.

Certain Agricultural Products, 59-61, WTO Doc. WT/DS457/AB/R (July 20, 2015). The implications of Peru–Additional Duty are not clear, however, given that the provision at issue did not explicitly refer to WTO obligations. The Appellate Body recognized that a waiver of rights to pursue WTO remedies is permitted as part of a mutually agreed solution to a dispute and stated further that “we do not exclude the possibility of articulating the relinquishment of the right to initiate WTO dispute settlement proceedings in a form other than a waiver embodied in a mutually agreed solution . . . [although] any such relinquishment must be made clearly.” *Id.* ¶ 5.25. Moreover, regardless of whether it would be recognized by the Appellate Body, an agreement between two or more WTO Members not to bring trade challenges against climate measures could serve as an important political and diplomatic constraint on such claims. It should also be noted that “WTO-plus” restrictions on fossil fuel subsidies would be unlikely to raise any issues of WTO-consistency.

145. Exec. Order No. 13,141, § 2 (Nov. 18, 1999) (emphasis added). *See also* ENVIRONMENTAL REVIEW GUIDELINES, *supra* note 10, § IV(B)(3)(c)(1) (“Scoping shall be used to assist in identifying possible alternative negotiating approaches and options for accomplishing the broad objectives of the trade agreement, including approaches for achieving environmental benefits.”).

