

MEMORANDUM

To: Sophie Meunier

From: Michael Oppenheimer¹ & Annie Petsonk²

Re: **Linked regimes to solve the timing problem for global warming**

A growing number of governments³ and policy-makers⁴ are recognizing that the world has entered a narrow time window within which a serious program of mandatory market-based measures to slow, stop and reverse greenhouse gas emissions (GHG) growth may, if implemented broadly, avert dangerous and irreversible climate changes. Scientists have recently warned that if “urgent and strenuous” action to cut emissions does not proceed within the next 1-2 decades, emissions cuts would need to be 3-7 times steeper (on an interim basis) in order to stabilize atmospheric concentrations of the gases at the same ultimate level,⁵ and that even a delay of five years can make a difference.⁶

The UN Framework Convention on Climate Change (UNFCCC), with its 180 Parties, provides the overarching multilateral structure for addressing the global threat of climate change. Nested within that framework is the 161-nation Kyoto Protocol, as well as an increasingly fragmented set of regional and even subnational regimes, such as the European Union Emissions Trading System (“EU-ETS”) and the Regional Greenhouse Gas Initiative launched by seven northeast U.S. states. In this memo we describe the principal nested regimes; consider their overlap with the smaller multilateral framework of the 149-member World Trade Organization (see Figure 1); and offer possibilities for further development and integration. In our analysis, following the approach of Sophie Meunier and Karen Alter, we use the term “nested” to refer to a situation in which

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² Environmental Defense. The views expressed are her own.

³ “Avoiding Dangerous Climate Change: Scientific Symposium on Stabilisation of Greenhouse Gases, February 1st to 3rd, 2005, Met Office, Exeter, United Kingdom (UK Department of Environment, Food, and Rural Affairs, January 2006) [“The Exeter Report”] [copies available at <http://www.defra.gov.uk/environment/climatechange/internat/dangerous-cc.htm>].

⁴ Snowe, Olympia, Senator, and 23 other U.S. senators, Letter to President George W. Bush on Montreal Climate Change Conference, 5 December 2005 [“Letter of 24 Senators”] (copy on file with the authors).

⁵ O’Neill, B. C. and Oppenheimer, M.: 2002, ‘Dangerous climate impacts and the Kyoto Protocol’, *Science* 296, 1971–1972; Exeter Report, *supra* n. 1.

⁶ Exeter Report, *supra* n. 1.

regional or issue-specific international agreements and institutions are themselves part of a larger multilateral framework that involves more states and issues; we use the term “overlap” to refer to the intersection of independent jurisdictions in the sense of the overlapping middle part of a Venn Diagram.⁷ We begin with the overarching framework of the 1992 climate treaty.

The 1992 UN Framework Convention on Climate Change (UNFCCC). The UNFCCC adopted in 1992, obligates all its members to measure and report their greenhouse gas emissions; to adopt policies aimed at curtailing these emissions;⁸ and to adhere to what President George W. Bush has called the “central goal” of stabilizing greenhouse gas concentrations in the atmosphere at a level that will avert dangerous climate change, and in a timeframe that will allow species to adapt, ensure that food supplies are not threatened, and enable nations to develop sustainably.⁹ The UNFCCC does not place any legally binding caps on the emissions of its member states; rather, it commits a group of industrialized nations listed in Annex I of the treaty to “aim” to return their emissions to 1990 levels by 2000; a subset of industrialized nations listed in Annex II to provide assistance to developing nations; and all nations to protect the climate system for the benefit of present and future generations, on the basis of equity and in accordance with their “common but differentiated responsibilities and respective capabilities.”¹⁰

The 1997 Kyoto Protocol. The UNFCCC creates a mechanism to review the adequacy of its commitments in light of the central goal of the treaty. In response to such a review, in which nations found that the treaty’s existing commitments were not adequate to achieve stabilization of GHG at levels that would prevent dangerous climate change, the Parties launched negotiations in Berlin in 1995 on a protocol or other legal instrument that would impose quantified emission limitation and reduction objectives on Annex I (industrialized country) Parties. The “Berlin Mandate” specified that there would be “no new

⁷ Karen J. Alter & Sophie Meunier, “Nested and Overlapping Regimes in the Transatlantic Banana Trade Dispute (December 6, 2004).

⁸ UNFCCC Article 4.1.

⁹ UNFCCC Article 2; Bush, G.W.: 2002, ‘Remarks at the National Oceanic and Atmospheric Administration’, text available at <http://www.whitehouse.gov/news/releases/2002/02/20020214-5.html>.

¹⁰ UNFCCC Article 3.1.

commitments” for developing countries – a marked shift in approach from prior agreements such as the Montreal Protocol on the Ozone Layer, which gave developing countries a ten-year grace period to achieve targets for freezing and phasing out chlorofluorocarbons and other ozone-depleting substances, or the Convention on International Trade in Endangered Species, which places obligations on industrialized and developing countries alike.

The resulting 1997 Kyoto Protocol on Climate Change caps the GHG emissions of the Parties included in Annex I of the UNFCCC for the years 2008-2012. It allows these Parties to engage in emissions trading as a means of meeting their targets – that is, any Party that reduces emissions below allowable levels may transfer surplus emission allowances to another Party. And it also allows Annex I Parties to apply emission reduction credits earned in developing nations, who have no emission caps, provided the credits come from projects that have been proven and certified by the so-called Clean Development Mechanism (CDM) as reducing emissions below what would have occurred in the absence of the projects.

The Kyoto Protocol thus created two new, internationally tradable commodities – emissions allowances of industrialized nations with caps on emissions, and emission credits earned by projects in nations without such caps. While views differ, it is likely that neither of these commodities are “like products” within the meaning of the WTO agreements;¹¹ however, recognizing the importance of WTO principles of non-discrimination in trade – principles which are enunciated also in the UNFCCC¹² - the Kyoto Protocol was explicitly designed to operate as a kind of “WTO of carbon.” The

¹¹ See Swedish National Board of Trade, Climate & Trade Rules: Harmony or Conflict? (Kommerzkollegium 2004) at 68-70, available at http://www.kommers.se/binaries/attachments/3430_Climate%20and%20Trade%20Rules.pdf; and see Glenn M. Wiser, “Frontiers in Trade: The Clean Development Mechanism and the General Agreement on Trade in Services,” paper prepared for the International Emissions Trading Association (IETA), available at <http://www.ieta.org/ieta/www/pages/getfile.php?docID=135>; and see A. Petsonk, “The Kyoto Protocol and the WTO: Integrating Greenhouse Gas Emissions Allowance Trading Into the Global Marketplace,” 10 Duke Environmental Law and Policy Forum 185 (Winter 1999), available at http://www.environmentaldefense.org/documents/706_WTOKyoto.pdf.

¹² UNFCCC Article 3.5 provides, “Measures taken to combat climate change, including unilateral ones, should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on trade.”

aim was to make the new commodities of bona fide emission reductions as broadly fungible as possible, specifically to create economic incentives for sovereign nations to join the new trading regime, much as the WTO, with its framework of benefits and disciplines favoring economic growth, remains one of the principal international regimes to which sovereigns continue to seek access.

While the 1997 Kyoto Protocol established an emissions trading system, the broad strokes of the agreement left open many questions concerning the rules for making the system operational. Negotiations commenced in 1998 on rules, but quarrels between the European Union and the United States, principally over whether there would be quantitative restrictions on trading (favored by the Europeans, opposed by the U.S. because it would drive compliance costs up) and whether there would be crediting for reducing emissions from tropical deforestation (favored by the U.S., opposed by the EU), led to a breakdown in negotiations in November 2000. In December 2000, one day after the U.S. Supreme Court ruled that George W. Bush had won the U.S. presidential election, Vice-President-elect Dick Cheney told a group of Republican senators that one of the administration's first steps in office would be to pull the U.S. out of any further negotiations on Kyoto rules.¹³ Three months later, in a March 2001 exchange of letters with Senator Chuck Hagel (R-NE), the President did precisely that.

The Europeans, at first thinking it was a negotiating tactic, switched course on one of the two issues the U.S. had sought – it renounced its demand for a “concrete ceiling” on the amount of emissions trading any nation could do. The U.S. remained in the background at the resumption of negotiations in Bonn, Germany, in mid-2001, where rules to implement Kyoto – still barring crediting for activities that reduce emissions from tropical deforestation, but accepting many other U.S. demands – were agreed. Still the U.S. did not return. Kyoto appeared to be doomed.

¹³ Sheryl Gay Stolberg, “In the Senate, Raising a (Quiet) Republican Voice Against the Administration,” *The New York Times*, October 4, 2004.

But in 2004, Russia breathed new life into the agreement. Kyoto's entry into force provisions required ratification by 55 nations representing at least 55% of industrialized countries' 1990 carbon dioxide emissions – a trigger structured so as to create a broad enough emissions trading market that liquidity would be guaranteed, and compliance thereby enhanced. Following a political deal with the EU (the EU agreed to support Russia's bid for WTO membership, and to accept a dual pricing system for Russian natural gas, in exchange for Russia's decision to ratify Kyoto), the treaty entered into force in February 2005. Following formal adoption of its implementing rules in December 2005, the Kyoto Protocol and its emissions trading market are now up and running.

Nested agreements under the Kyoto Protocol: The EU-ETS. While a number of agreements are in the process of development under the framework of the Kyoto Protocol, we focus on one created by the member states of the European Union. Originally opposed to emissions trading during the Kyoto Protocol negotiations, the EU came full circle by the time Kyoto entered into force, having decided to implement Kyoto in large measure through a cap-and-trade system covering Europe's largest emitters. On January 1, 2005, the system was launched on a trial basis, covering the years 2005-2007; a mid-term review is currently underway; and a revised version of the system will be put in place for the Kyoto period of 2008-2012.¹⁴ Price quotes for emission allowances and credits on the EU carbon market are readily available, and market dimensioning indicates that the system has the potential to develop into a very large market in value terms (hopefully spurring innovation in a wide range of technologies and processes for cutting emissions while not significantly reducing economic growth).

The EU-ETS: Linkage with an agreement “nested” under the UNFCCC. The EU-ETS by its terms “links with” systems in place in other Kyoto Protocol Parties. It also creates a pathway for potential linkage to systems in nations that are not parties to Kyoto but within which there are mandatory limits on GHG emissions.¹⁵ This was included as an

¹⁴ EU-ETS Directive....

¹⁵ EU Linking Directive....

explicit olive branch to the U.S., on the theory that mandatory GHG emissions cap legislation might be enacted in the United States. In the absence of federal legislative action, however, U.S. states have stepped up to the plate. The Regional Greenhouse Gas Initiative adopted by seven northeast U.S. states commits the states to cap emissions of carbon dioxide from electric power plants in the seven-state region and establish an emissions trading system; covered sources will have limited access to the international carbon market; if the price of traded allowances in the region reaches a “trigger point,” system participants will be allowed to purchase a greater number of credits on the international market.¹⁶ Markets beget markets: some members of the European Parliament are now exploring possibilities for linking the EU-ETS with RGGI. The State of California is also exploring the development of a state-wide, or perhaps western states, cap-and-trade system; linkages with the EU-ETS are also being explored. Curiously, were RGGI to link with the EU-ETS, it would be an example of one regime nested in Kyoto (EU-ETS) linking with another regime nested not under Kyoto but arguably under the UNFCCC (see Figure 2). It remains to be seen whether issues of federalism and the views of Congress may ultimately create obstacles to such linkages.

The development of the EU-ETS, the development of RGGI, and the explorations now underway about linking these systems, illustrate to some extent the power of markets, including those nested within larger systems, to attract new participants – a key dimension if nations are to limit emissions in the time-frame needed to avert dangerous climate change. In this respect, the possibility of agreements nested within or linked to a larger market structure can be a powerful force for encouraging the participation of sovereign nations in environmental protection regimes.

More nested agreements under the UNFCCC. At the Montreal climate treaty talks in December 2005, a group of rainforest nations that are effectively shut out of the Kyoto market stepped forward to ask the Parties to the UNFCCC to launch a process for addressing emissions in their countries. Deforestation is the largest single source of

¹⁶ Regional Greenhouse Gas Initiative Memorandum of Understanding, December 20, 2005, copy available at http://www.rggi.org/docs/mou_12_20_05.pdf.

emissions in developing countries – the destruction of forests, primarily in developing countries, may cause daily emissions of greenhouse gases equivalent to all the cars and trucks and power plants and factories in the United States. Yet under Kyoto’s implementing rules, nations that reduce their rates of deforestation cannot earn compensation through the carbon market.

At Montreal, the UNFCCC Parties, with some objection from the U.S. administration (which opposes the carbon market because it opposes mandatory emission caps) and with a letter of welcome from a bipartisan group of U.S. Senators,¹⁷ initiated a two-year process to determine how to address these emissions.¹⁸ Parties were clear that they did not wish to re-negotiate Kyoto or its implementing rules for 2008-2012. But the forward momentum of the rainforest nations raises the possibility of a new agreement, nested in the UNFCCC and based on the concept of “Compensated Reduction,” under which nations that reduce deforestation during the 2008-2012 period would be compensated with credits, a portion of which would be tradable in the post-2013 carbon market.¹⁹

Markets beget markets. Interestingly, such a path for a nested rainforest nations emissions trading agreement would also strengthen the likelihood that industrialized nations would take caps on emissions post-Kyoto, because the broader agreement would ease compliance with post-Kyoto objectives; without caps, there will be no carbon market within which rainforest credits will have value. Furthermore, such a path for a nested agreement could also engender similar paths for other interested groups of nations that wish to expand participation in the carbon market beyond the necessarily cumbersome project-by-project approach of the CDM.

¹⁷ Letter from Senator Joseph Lieberman and three other senators to The Hon. Stephane Dion, President of the COP, December 9, 2005.

¹⁸ Reducing emissions from deforestation in developing countries: approaches to stimulate action, FCCC/CP/2005/L.2, December 6, 2005, text available at www.unfccc.int.

¹⁹ A portion of the credits would also be held in reserve as an insurance policy. See M. Santilli et al., “Tropical Deforestation And The Kyoto Protocol,” *Climatic Change* (2005) 71: 267–276, DOI: 10.1007/s10584-005-8074-6, and see P. Moutinho and S. Schwartzman, eds., Tropical Deforestation and Climate Change (IPAM 2005).

One political effect of the concept of expanded trading came at Montreal in December 2005, as the Kyoto Parties tried to reach agreement on launching talks on extending Kyoto post-2012. Russia made an eleventh hour demand that those talks include an explicit pathway for developing countries to take commitments. When Russia did so, Jamaica on behalf of the G-77 and China demurred, and Saudi Arabia warned that pressing the issue might lead to the collapse of the talks. But then Tuvalu, on behalf of the Association of Small Island Nations, noted that Parties had already broached the subject by agreeing to address emissions from deforestation in developing nations. China agreed that the subject had been opened. The Kyoto Protocol Parties agreed that the President of the meeting would ask all Parties for their views on the subject, and the formal talks on extending Kyoto post-2012 were officially launched.²⁰

The Asia-Pacific Partnership for Clean Development and Climate: A U.S. administration attempt to “hollow out” Kyoto and the UNFCCC? At Montreal, the U.S. administration reiterated its opposition to carbon markets and emission caps. Instead, shortly after the Montreal meeting, the administration convened what it has dubbed the “Asia-Pacific Partnership for Clean Development and Climate”²¹ – a non-binding colloquium with Australia, China, India, Japan and South Korea whose announced aim is to promote sharing of greenhouse gas emission-reducing technologies. The domestic implementing legislation for the partnership, a bill sponsored by Senator Chuck Hagel (R-NE) and enacted in 2005, authorized direct loans and loan guarantees for large companies that deploy such technologies abroad; however, no appropriation for this bill has been enacted. While the administration describes the agreement as “intended to complement the 1992 United Nations Framework Convention on Climate Change and the 1997 Kyoto Protocol,” it also appears to be designed to achieve two other aims: (1) to woo large developing countries away from the international cap-and-trade market for GHG

²⁰ Consideration of commitments for subsequent periods for Parties included in Annex I to the Convention under Article 3, paragraph 9, of the Kyoto Protocol, decision ___/CMP.1 (December 11, 2005), text available at www.unfccc.int.

²¹ See statement of Secretary of State Condoleezza Rice, February 9, 2006, available at <http://usinfo.state.gov/usinfo/Archive/2006/Feb/09-287046.html>.

emissions,²² and (2) to insulate the U.S. and Australia from trade measures under the WTO.

The Climate Treaties and the WTO: overlapping regimes for dealing with free riders and lone rangers. While more nations have joined the UNFCCC and Kyoto than have joined the WTO, the WTO framework remains a powerfully brooding omnipresence over the climate treaty talks. The U.S. administration's deep-seated opposition to mandatory emission caps, and the resulting stand-off with developing nations, who are unwilling to cap emissions until the U.S. does, is shaping up as a giant global game of chicken – and unless this standoff is broken, the world will not be able to avert dangerous climate change. From traditional regime theory, the U.S. could be described as a free rider – benefiting from other nations' participation in emissions-cutting agreements, while refusing to cut its own emissions. In light of the narrow time window for curbing global warming, however, the U.S. could also be regarded as a “lone ranger” – a nation whose refusal to participate threatens to undermine all other nations' actions. How do the climate treaties and other overlapping regimes deal with the lone ranger problem?

As other nations become increasingly frustrated with the U.S. refusal to participate, some parliamentarians, particularly in Europe, have hinted that their nations might seek recourse to trade measures against the U.S. Those could, in theory, take the form of (a) restrictions on the imports of goods produced in the United States on the theory that the greenhouse gas emissions entailed in producing the goods are harming the environment of Europe; (b) border taxes on such goods; or a variety of other measures. Such measures could be imposed by governments individually, or by governments collectively in the course of extending/amending the GHG emissions cap and trade framework in the future.

²² In these respects, it is worth inquiring whether the administration's Partnership follows a pattern of “hollowing out” of multilateral institutions that other commentators have noted in other areas, ranging from a potential hollowing out of the North American Treaty Organization (NATO) (see, e.g., Secretary Rumsfeld's response to questions about hollowing out of NATO, at <http://www.defenselink.mil/transcripts/2006/tr20060204-12444.html>; Lisa Martin, “Multilateral Organizations after the U.S.-Iraq War of 2003,” Harvard University Department of Government, text available at <http://www.people.fas.harvard.edu/~llmartin/Multilateral%20organizations.pdf>; and see S. Meunier, ...) to bilateral and regional trade agreements as alternatives to the WTO.

Were such measures to be imposed, they would evoke a kind of reversal of the scenario in which the U.S. unilaterally embargoed the import of tuna caught by nations whose fishing fleets killed more dolphins than did the U.S. fleet (the famous “Tuna-Dolphin cases” in the GATT). In the original tuna-dolphin case,

The Panel considered that if the broad interpretation of Article XX(b) suggested by the United States were accepted, each contracting party could unilaterally determine the life or health protection policies from which other contracting parties could not deviate without jeopardizing their rights under the General Agreement. The General Agreement would then no longer constitute a multilateral framework for trade among all contracting parties but would provide legal security only in respect of trade between a limited number of contracting parties with identical internal regulations... The United States had not demonstrated to the Panel - as required of the party invoking an Article XX exception - that it had exhausted all options reasonably available to it to pursue its dolphin protection objectives through measures consistent with the General Agreement, in particular through the negotiation of international cooperative arrangements, which would seem to be desirable in view of the fact that dolphins roam the waters of many states and the high seas.²³

More recent WTO jurisprudence (“the Shrimp-Turtle case”, the “Reformulated Gasoline” case, etc.) indicates that there is some ambit for WTO Members to take trade measures against one another over activities that occur outside the jurisdiction of the states taking the measure and that damage the environment of the state taking the measure, provided that the measure is “necessary” (i.e., the least trade restrictive means of protecting human health or the environment in the state taking the measure), is not applied in a way that is arbitrarily or unjustifiably discriminatory, and (invoking the Tuna-Dolphin panel’s reasoning) proceeds only after attempts to get the state against whom the measure is taken to participate in multilateral agreements to reach the same result. Arguably, the U.S. administration’s Partnership may insulate itself against such trade measures. If another nation, citing the U.S. refusal to participate in Kyoto or other mandatory multilateral emissions caps, were to impose trade measures against the U.S., the U.S. could argue that such measures are inconsistent with the WTO and that its multilateral Partnership satisfies the “international cooperative arrangements” required by Tuna-Dolphin and its progeny. Whether a WTO panel would then go on to examine whether,

²³ United States - Restrictions On Imports Of Tuna, Report of the Panel (DS21/R - 39S/155) (1990), paragraph 5.27.

in fact, either Kyoto or the Partnership actually resulted in emission reductions and therefore contributes to averting dangerous climate change within the meaning of the UNFCCC, raises a set of further interesting questions about overlapping regimes.

Nested and linked markets: Toward a post-Kyoto architecture. That RGGI has occurred at least partly in response to the development of the EU-ETS and the global carbon market underscores, in some respects, the utter absence of the U.S. federal government from international carbon market diplomacy. While international negotiations are typically regarded as the province of the Executive Branch,²⁴ we are at a juncture in American history where others are stepping in to fill the climate policy vacuum. In December 2005, a significant number of U.S. senators issued a remarkable warning to the administration – warning the President that his policies are placing America in violation of its treaty obligations under the UNFCCC:

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“We are writing to remind the Administration of its continuing legal obligation to participate in the COP negotiations in a constructive way that will aid in meeting the agreed-upon goal of "preventing dangerous anthropogenic interference with the climate system." In our view, a deliberate decision by the Administration not to engage in such discussions, solely because they may include the topic of future binding emissions reductions requirements, is inconsistent with the obligations of the United States as set forth in the UNFCCC treaty. In any event, the United States should, at a minimum, refrain from blocking or obstructing such discussions amongst parties to the Convention, since that would be inconsistent with its ongoing treaty obligations.

“We would also like you to be aware that a bipartisan majority of the United States Senate has now agreed that human-induced climate change is real and that "mandatory steps will be required to slow or stop the growth of greenhouse gas emissions into the atmosphere." On June 22, 2005, the Senate went on Record for the first time in support of mandatory limits on greenhouse gases by a vote of 53-44. The Resolution states that:

’It is the sense of the Senate that Congress should enact a comprehensive and effective national program of mandatory, market-based limits and incentives on emissions of greenhouse gases that slow, stop, and reverse the growth of such emissions at a rate and in a manner that-

- (1) will not significantly harm the United States economy; and

²⁴ See generally *United States v. Curtiss-Wright Export Corp.*, 299 U. S. 304 (1936).

(2) will encourage comparable action by other nations that are major trading partners and key contributors to global emissions.’

“As this Sense of the Senate Resolution makes clear, the Senate intends, at some future date, to require a program of mandatory greenhouse gas limits and incentives for the United States. Moreover, that system will be designed to ensure comparable action by other nations that trade with the United States. This system, therefore, will build on the actions of the United States and other countries in implementing the UNFCCC. It is only a matter of time before Congress takes such action. The United States Senate is on the path towards requiring mandatory commitments and reductions of greenhouse gases and supports working through and alongside the Framework Convention process. The Administration should remain mindful of that key fact in its negotiations with all Parties and comport any discussions about future obligations accordingly.”²⁵

The senators’ statement that “The United States Senate is on the path towards *requiring mandatory commitments and reductions of greenhouse gases and supports working through and alongside the Framework Convention process*” underscores the possibility of a post-2012 climate regime comprised of nested and overlapping systems with positive “markets beget markets” elements – i.e., where nations and groups of nations condition carbon market access upon adoption of mandatory or otherwise effective emissions caps, according to the following hypothetical arrangements:

- I. Nations other than the United States adopt a new protocol to the UNFCCC – or an amendment to Kyoto - extending industrialized countries’ (Annex I Parties) mandatory absolute emission caps and emissions trading market. Emission caps to be set at levels plausibly within the range needed for averting dangerous climate change. The new protocol would include new Annexes extending its scope, as follows:²⁶
 - a. The new protocol explicitly allows other nations that become “Parties Included in Annex I” to adopt similar mandatory emissions caps, with a

²⁵ Letter of 24 Senators, *supra*.

²⁶ For a detailed proposal of similar ideas, including the “premium” or “headroom” target approach, as well as detailed and extremely thoughtful proposals on how such targets might be integrated into the evolving carbon market framework, see Richard B. Stewart, Jonathan B. Wiener, Reconstructing Climate Policy: What the United States Should Do After Kyoto (AEI-Brookings 2003).

“premium” (e.g., extra emissions allowances, or a more favorable base period from which to calculate the emissions caps) for nations that sign up early. Premium-based emission caps to be set at levels plausibly within the range needed for averting dangerous climate change. Nations adopting these caps can begin participating in the emissions trading market immediately. This pathway is most likely to be utilized by transition economies, such as Turkey and Kazakhstan, with less well developed capital markets and with significant emission reduction opportunities through modernization of existing capital stock. It might also be of interest to fast-growing economies like South Korea, Singapore and even China.

- b. The new protocol includes an explicit “Compensated Reduction” annex for forest developing nations such as Papua New Guinea, Indonesia, Central African nations, and Latin American nations, most crucially Brazil. Under this annex, developing nations that voluntarily reduce emissions from deforestation, and developing nations that have no net deforestation but voluntarily boost carbon uptake by replenishing their forests, will be compensated with credits, a portion of which will be tradable – but only at the end of the commitment period.
- c. Building on the Compensated Reduction model, the new protocol includes an explicit annex for developing nations like India that are not yet ready or willing to adopt mandatory emission caps, but who are willing to try voluntarily to reduce overall emissions from a base period that takes account of economic growth. These nations can earn credits, a portion of which will be tradable – but only at the end of the commitment period.
- d. The new protocol includes a linking provision, under which its members may choose to link its cap-and-trade system with any non-Party that has adopted similar mandatory absolute GHG emission caps and created its own domestic trading market.²⁷ The “carrot” that the new agreement

²⁷ For precedent on this type of “linking” arrangement, see the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES), Article X, which provides, “Article X: Trade with

would offer would be “carbon market access” for nations that have adopted mandatory caps on emissions or demonstrably reduced emissions. Such a market access restriction could be designed in a way that likely would be wholly consistent with the WTO, since it would be applied on a non-discriminatory basis, and since emissions allowances are probably not “products” subject to WTO disciplines.

- II. The United States adopts national legislation creating a mandatory GHG emission cap and trade system, with caps set at limits plausibly within the envelope needed to avert dangerous climate change, and with linkages to other regimes as follows:²⁸
 - a. The U.S. legislation explicitly links its cap and trade system with comparable domestic cap and trade systems in other nations, including major developing nations, such that those nations gain access to the U.S. carbon market only if they mandatory adopt emission caps (see I.a) or if they achieve actual reductions in total emissions and/or emissions from deforestation (see I.b and I.c).
 - b. The U.S. legislation explicitly links its cap and trade system with comparable multilateral systems.

The result of this framework, from the perspective of linked regimes, is illustrated in Figure 3.

States not Party to the Convention. Where export or re-export is to, or import is from, a State not a Party to the present Convention, comparable documentation issued by the competent authorities in that State which substantially conforms with the requirements of the present Convention for permits and certificates may be accepted in lieu thereof by any Party.” Note that this provision was included in CITES specifically to deal with the possibility that a GATT contracting party who was not a member of CITES would regard an embargo in trade in endangered species imposed by another GATT contracting party who was a member of CITES, as trade discrimination inconsistent with the latter’s GATT obligations. In the construct of Kyoto as a kind of “WTO of carbon” (see above), including such a provision in any “son or daughter of Kyoto” or other nested GHG emission trading agreement under the UNFCCC would make sense both from the point of view of avoiding trade discrimination, and from the point of view of “markets beget markets” as a means of encouraging broader participation in mandatory cap and trade regimes.

²⁸ For detailed discussions of the possibility of a U.S.-China bilateral emission trading regime that would run “in parallel” to the international carbon market, see Stewart & Wiener, *supra*.

Conclusion. The power of markets to beget markets can be deployed to create new nested and overlapping regimes that successfully curb GHG emissions and avert dangerous climate changes. Existing overlapping regimes, in particular the WTO, provide a backdrop for the contours of actions that might be taken to exert pressure on “free riders” and “lone rangers”.