ADVANCING THE INTERNATIONAL EFFORT AGAINST CLIMATE CHANGE

TOWARDS AN INTEGRATED MULTI-TRACK CLIMATE FRAMEWORK

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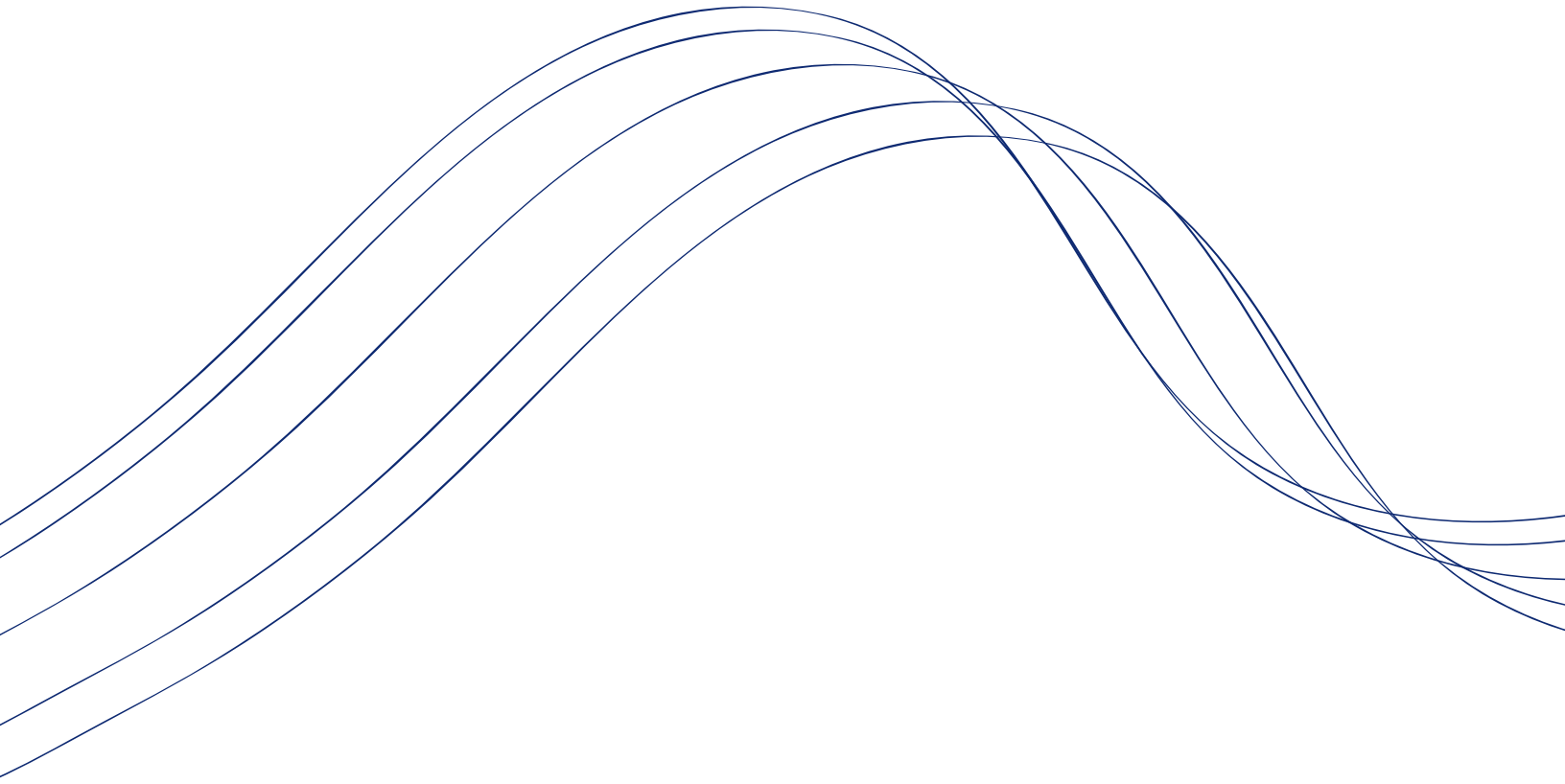

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Prepared for the Pew Center on Global Climate Change

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December 2007

The Pew Center and the authors express their appreciation to Joseph E. Aldy, Jutta Brunnee, Christiana Figueres, Toshiyuki Sakamoto, and others for their helpful comments on earlier drafts of this paper.

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Introduction

With the approach of 2012, and the expiration of the initial greenhouse gas targets under the Kyoto Protocol, governments are grappling with how best to advance the international climate effort in the years beyond. The central challenge is as clear as it is formidable: fashioning an international framework ensuring that all of the world's major economies contribute equitably and effectively to the global climate effort.

One way of characterizing the many different proposals put forward by governments, experts, and advocates is in terms of where they fall along a certain continuum: Towards one end are so-called "bottom-up" approaches, which envision the international effort as an aggregation of nationally defined programs put forward by countries on a strictly voluntary basis. At the other end are "top-down" approaches, in which governments negotiate explicit and binding international commitments that in turn shape and drive national policies.[1]

This paper suggests a middle course, one that seeks to introduce "bottom-up" flexibility while retaining the cohesion and reciprocity of "top-down." We call this an integrated multi-track approach.[2] In this approach, all major economies enter into commitments aimed at reducing or moderating their greenhouse gas (GHG) emissions, but the *type* of commitment varies. For example, some countries have binding economy-wide emission targets, as under Kyoto, while others commit to implement national policies such as efficiency standards, renewable energy targets, or measures to reduce deforestation.[3] Some, in addition, could participate in sectoral agreements on targets, standards, or other measures addressing emissions from particular sectors.[4]

The broad contours of such an approach were outlined in the report of the *Climate Dialogue at Pocantico,* a group of policymakers and stakeholders from 15 countries convened by the Pew Center on Global Climate Change.[5] In assessing a wide range of post-2012 options, the group concluded that the major economies, given their tremendous diversity, are more apt to engage in the international effort if given latitude to pursue different policy "tracks." But the dialogue participants also concluded that the collective effort will be stronger if these multiple tracks are brought together in an overarching framework allowing coordination and tradeoffs among countries:

> [A] purely "bottom up" approach might produce only an ad hoc assemblage of disparate initiatives, with little certainty that the overall effort would be sufficiently timely or robust… Expressly linking approaches may allow for a more robust overall effort. In order for governments and for the private sector to undertake and sustain ambitious climate action, they must be confident that their counterparts are contributing their fair share. An integrated agreement could help provide this mutual assurance. By linking and

negotiating across tracks, it may be possible to arrive at an arrangement that is at once flexible enough to accommodate different approaches, and reciprocal enough to achieve a higher overall level of effort.[6]

This paper elaborates on the rationale for an integrated multi-track approach; draws lessons from other multilateral regimes, including those addressing international trade and other transboundary environmental challenges; and identifies key issues in designing a multi-track climate framework. It assesses three models: an "individualized commitments" approach, which affords countries the greatest flexibility; a "parallel agreements" approach, which provides more structure and integration; and an "integrated commitments" approach, in which countries agree to negotiate within given tracks towards a comprehensive package agreement.

The paper concludes that of the three, the "integrated commitments" model is the one most likely to produce a collective level of effort sufficient to meeting the challenge of climate change. While still allowing countries the flexibility of different commitment types, this approach encourages stronger reciprocity and effort by establishing some agreement at the outset on commitment types, and to which countries they will apply, and by requiring that all tracks be agreed as one comprehensive package.

There was consensus among the Pocantico dialogue participants—and there is now consensus among most, if not all, governments—that the appropriate venue for developing the post-2012 climate framework is the UN Framework Convention on Climate Change (UNFCCC). An integrated multi-track post-2012 agreement under the UNFCCC would likely include elements under the Convention, the Kyoto Protocol, and, potentially, under new protocols or other instruments. In the present negotiating context, the key to producing such an agreement is a new mandate for negotiations under the Convention—encompassing or linked to ongoing negotiations under Kyoto—with the aim of a comprehensive package of commitments for all major emitting countries.

I. Why an Integrated Multi-Track Framework?

The integrated multi-track framework has two key features. First, in contrast to the Kyoto Protocol, which establishes a single commitment type (fixed economy-wide emission targets), a multi-track framework would have a more variegated structure allowing countries to assume different types of commitments. Second, these different commitment "tracks" would be integrated in a common framework.

Possible tracks include:

- Emission targets and timetables of various types, including absolute economy-wide targets, indexed or intensity targets, and conditional targets.
- Nationally defined policies—such as efficiency standards, renewable energy targets, or sustainable forestry measures—put forward as policy-based commitments.
- International sectoral agreements, for example, to define fuel economy standards for automobiles, to increase carbon stocks in agriculture or forestry, or to require the use of renewable energy sources.
- Science and technology cooperation to research and develop technologies such as fuel cells and carbon capture and sequestration, or to assess potential geoengineering approaches.
- Agreements to facilitate broad and equitable access to existing and emerging technologies.
- Measures to facilitate adaptation planning and implementation in especially vulnerable countries.
- Financial mechanisms to provide support for adaptation, capacity building, and technology deployment.

States could have multiple commitments under different tracks. For example, a country could participate in an international sectoral agreement on transportation and could offer policy-based commitments to reduce emissions from its electric power and land-use sectors. In this case, the commitments would be additive—the country's overall effort would be the aggregate of the individual commitments. Another country could have an economy-wide emissions target, participate in one or more sectoral agreements, and commit to provide technology and adaptation assistance. In this case, reductions achieved under the sectoral agreements would count toward the country's economy-wide target; the former, in essence, would be a means of achieving the latter. While the analysis here focuses primarily on potential forms of GHG mitigation, it is assumed that any comprehensive post-2012 framework will include new elements addressing adaptation as well.[7]

Why do we need flexibility?

Climate change is a problem of unprecedented scope and complexity. Although most states are willing to take some action to combat climate change, they are unlikely to undertake the same set of commitments

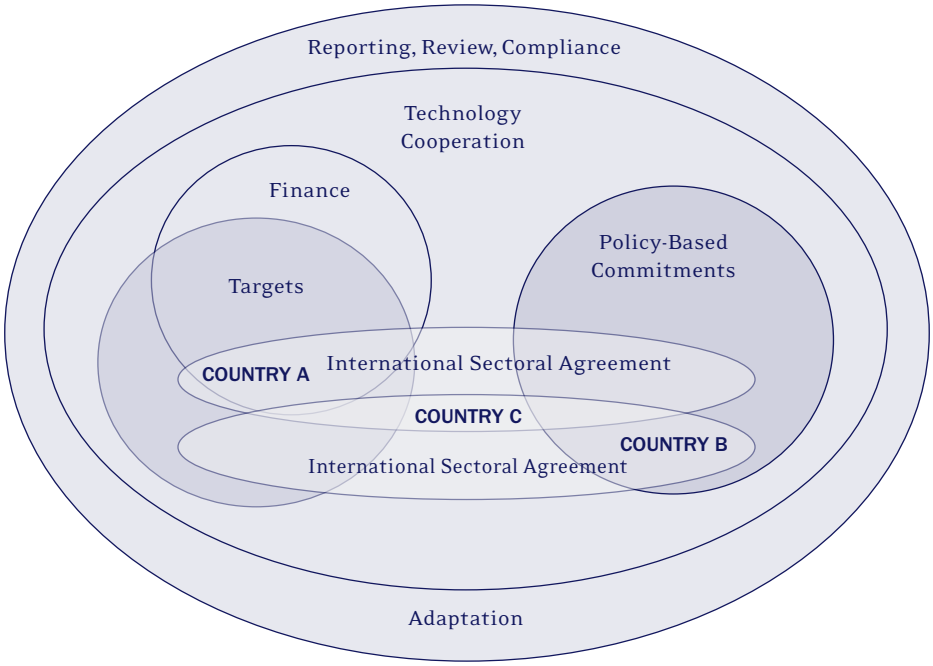

Illustration of an Integrated Multi-Track Climate Framework

In an integrated multi-track climate framework, different countries have different and, in some cases, multiple commitments. In this hypothetical illustration, all participating countries commit to provisions on reporting, review, compliance, and adaptation. A subset of countries also agrees to provisions on technology cooperation. Within that subset, countries have a range of additional commitments. For instance, country A has an economy-wide emissions target and a financial commitment, and participates in a sectoral agreement. Country B has policy-based commitments and participates in a different sectoral agreement. Country C participates in both sectoral agreements, but has no economy-wide target, financial commitment, or policy-based commitments. (See text for definitions of sectoral agreements and policy-based commitments.)

anytime soon. As the Pocantico report notes, "The types of policies that can effectively address greenhouse gas emissions in a manner consistent with national interest will by necessity vary from country to country. To achieve broad participation, a framework for multilateral climate action must therefore be flexible enough to accommodate different types of national strategies by allowing for different types of commitments. It must enable each country to choose a pathway that best aligns the global interest in climate action with its own evolving national interests."[8]

There are many reasons why countries may prefer different policy approaches and commitment types:

National circumstances. A country's emissions profile—and its options for reducing emissions—are heavily influenced by its state of development, the structure of its economy, and its natural resource base. These and other circumstances vary widely among the major economies.

View of international commitments. Some countries perceive international commitments as limitations on their national sovereignty, and are suspicious of (or even hostile to) international agreements. Others are

more favorably disposed to international regulation, seeing it as a means of achieving common ends, such as the reduction of GHG emissions.

Costs of taking action. Countries that already have low emission levels (or low levels of emission intensity) may find it more difficult to make further reductions than those that have done little thus far to reduce their emissions, and have not yet exhausted their low-cost abatement options. States with colder climates or larger land masses may have greater energy and transportation needs than more temperate, smaller states, making emission reductions more difficult.

Why do we need integration?

While flexibility is important to making the climate change regime widely attractive, integration is equally important to making it effective. Integration can contribute to effectiveness in three ways:

Stronger reciprocity and effort. Integration can promote greater reciprocity between states—and thereby greater overall effort—by allowing states to make political tradeoffs between different parts of the overall integrated framework. A greater effort by one state (or group of states), for example in the area of technology cooperation, might be reciprocated by the adoption of stronger energy efficiency standards by another state or group of states. In general, states can be expected to do more to address climate change if their efforts are reciprocated by other states. Of course, to some degree, actors at all levels may undertake mitigation efforts even in the absence of reciprocal actions by others. But reciprocity gives states a greater incentive to undertake stronger action, since their efforts not only help mitigate climate change directly, but also, in essence, buy action by others.

Greater economic efficiency. Integration can promote economic efficiency by facilitating international emissions trading across different commitment tracks. Under the Kyoto Protocol, countries with emission targets can trade allowances among themselves, and countries without targets can trade by earning and selling credits for verified emission reductions. In a multi-track framework, approaches such as policy-based or sectoral crediting could enable wider trading between countries participating in target and non-target tracks.[9] This would require agreed methodologies for converting actions taken under different tracks into a common metric, such as expected (ex ante) or actual (ex post) reductions in emissions.

Greater coordination. Integration can allow greater consistency, coordination and administrative efficiency by providing for common institutions, a common reporting and review system, and a common system of dispute resolution and enforcement.

Flexibility and integration in the climate regime

In broad terms, the international climate change regime has from its inception adopted an integrated multi-track approach. The UNFCCC provides basic elements of integration, including a common objective and

principles, common institutions, and a common reporting system. But, in certain respects, the Convention also has a variable geometry. It distinguishes between three groupings of countries: Annex I or developed countries, which committed to a non-binding goal to limit their GHG emissions and to special reporting obligations; Annex II countries, a subset of Annex I that also committed to provide financial and technology assistance to developing countries; and non-Annex I or developing countries, which committed generally to address climate change and to less stringent reporting obligations. Further, the UNFCCC opens the possibility that the climate regime might develop in a variegated manner through the negotiation of protocols addressing different issues (for example, different sectors or gases) and involving different groupings of countries.

The Kyoto Protocol, the first and as yet only protocol to be developed under the UNFCCC, also has elements of variability. Kyoto continues to elaborate the different tracks that originated in the UNFCCC, setting binding emission targets for Annex I countries only, while allowing non-Annex I countries the option of participating through the Clean Development Mechanism (CDM).[10] Within the Annex I track, the specific regulatory approach taken in the Kyoto Protocol affords further flexibility in several ways: (1) setting individualized emission targets for each Annex I country, reflecting their particular national circumstances, rather than a single uniform target; (2) giving countries full flexibility in choosing the domestic measures through which they meet their targets, (3) giving states flexibility in when they reduce their emissions, through a five-year commitment period; and (4) giving countries flexibility as to where they reduce emissions, through international emissions trading, joint implementation and the CDM. Still, in its present form, the Protocol allows only a single commitment type—fixed economy-wide emission targets.

Without the participation of the United States and Australia, the Protocol's emission targets encompass less than one-third of global, and two-thirds of Annex I, emissions.[11] Since Kyoto's entry into force, the climate effort has, de facto, developed along divergent tracks. Within the Kyoto track, developed countries that are parties to the Protocol have binding, quantified emission targets for the 2008-2012 commitment period, while developing countries, in particular large developing countries such as China and India, are generating emission credits through the CDM. Outside Kyoto, a number of countries are participating in technology-focused initiatives, many spearheaded by the United States, which entail no binding commitments. In addition, sub-national (state and provincial) efforts have begun to emerge in the United States and elsewhere. While some governments have expressed interest in linking these fragmented efforts, thus far there has been little progress towards integration.

The integrated multi-track framework approach accepts the reality that different countries are likely to want to move ahead on the climate issue in different ways and at different speeds. But it aims to bring these actions together in a single integrated framework in order to produce greater political will (and thereby stronger action) as well as greater efficiency. In essence, it aims to be more variegated than Kyoto, but more integrated than the current, de facto situation.

II. Lessons from Other International Regimes

Over the years, governments have devised many agreements addressing international issues that share some of the dimensions of the climate challenge. But there is no ready diplomatic analogue for climate change—a long-term global challenge that implicates core economic activities, requires large-scale investment and technological transformation, raises fundamental issues of global equity, and classically poses the "free-rider" dilemma.

Still, in envisioning an integrated multi-track climate framework, it is useful to draw on the experiences of other international regimes. This section introduces a number of multilateral agreements reflecting different types of integrated multi-track approaches, and offers broad observations on what they imply for climate change. These and other examples, and the lessons they suggest, are further elaborated in the sections that follow.

International agreements that in some broad sense follow an integrated multi-track approach include:

Multilateral trade regime. Throughout much of its history, the international trade regime had a highly variegated structure, with a General Agreement on Tariffs and Trade (GATT), as well as optional codes addressing particular non-tariff barriers to trade (such as subsidies, technical barriers, import licensing procedures, and customs valuation) to which only a relatively small number of mostly industrialized countries subscribed. The 1994 Uruguay Round agreements, which established the World Trade Organization (WTO), moved the trade regime in the direction of greater uniformity, through the negotiation of a package of agreements that all WTO members accepted. But it still includes "plurilateral" agreements among smaller groupings of WTO members. In addition, its General Agreement on Trade in Services (GATS) applies in a variable way to different countries, depending on which sectors a country elects to include.[12]

European Union. The European Union has long accepted the idea that different parts of Europe would integrate at different rates. For example, the United Kingdom does not use the common European currency (the Euro), the UK and Ireland are not part of the Schengen Agreement (which abolishes border controls within the EU), and Denmark has opted out of the common European defense policy. This principle of "variable geometry" within the EU was formally recognized in the 1997 Treaty of Amsterdam, and allows countries that wish to integrate more quickly to move ahead, rather than being held back by the slowest boat.

Multilateral environmental agreements. Many existing environmental regimes reflect, in general terms, a multi-track framework. In some cases, a core agreement sets forth the elements of integration, such as the tracks along which states can take action, how states make (and change) commitments, the institutions

common to the different tracks, and the processes for reviewing national performance and addressing non-compliance. A series of regulatory protocols or annexes then elaborates the multiple tracks along which states can proceed, containing different kinds of commitments. For example, in Europe's Long-Range Transboundary Air Pollution (LRTAP) regime, a framework convention establishes the basic structure and separate protocols address different long-range pollutants, including sulfur dioxide (SO_2), nitrogen oxides (NO_x), volatile organic compounds, heavy metals and persistent organic pollutants. Countries can pick and choose among these tracks. Similarly, the global agreement addressing pollution from ships (the International Convention for the Prevention of Pollution from Ships, or "MARPOL") includes general treaty articles as well as six annexes addressing different sources and types of ship pollution, including oil, noxious liquid substances, sewage, garbage, and air pollutants.

Law of the Sea. In 1958, the first UN Conference on the Law of the Sea elaborated four parallel conventions, each addressing a different issue—the territorial sea, the continental shelf, the high seas, and fishing—and, in a sense, representing a different track. These were combined in the 1982 UN Convention on the Law of the Sea, which comprehensively addresses navigation, resource, environmental and other ocean issues in a single, integrated package agreement.

Again, none of these examples is perfectly analogous to climate change. In the case of trade, for instance, the theory of comparative advantage holds that states have an incentive to lower trade barriers unilaterally, regardless of what other states do, so reciprocity of action is not as critical as in the case of climate change.[13] In LRTAP and MARPOL, the different tracks address distinct problems—acid rain, urban smog, oil pollution, marine debris, and so forth—whereas in climate change, myriad emission sources and sinks are all inter-related.

Still, these multilateral experiences lend valuable lessons. To begin with, they represent a rich multiplicity of approaches. While some may be of greater utility than others in addressing climate change, the broader point is that each regime is unique, devised to meet a particular set of challenges. The climate regime, too, requires a distinct architecture custom-matched to a unique set of political and policy imperatives.

More fundamentally, the multilateral record demonstrates the importance—and the difficulty—of striking an appropriate balance between flexibility and integration. On one hand, treaties that do not provide sufficient flexibility may languish or be rejected. In the European Union, the 1992 Maastricht Treaty was rejected by Danish voters because it went too far in the direction of integration, which led to the development of a more variable geometry formalized in the 1997 Treaty of Amsterdam. On the other hand, too much flexibility can produce too little effort. In the trade regime, for instance, the "à la carte" approach to the GATT codes taken in the early Tokyo Round of negotiations was widely seen as ineffective. Countries typically accepted only those codes that did not require them to change their behavior. Overcoming this weakness was a prime motivation in the later Uruguay Round for a single package agreement establishing the WTO, which countries wanting to join had to accept in its entirety.

Indeed, many regimes have followed a similar evolutionary path, allowing a high degree of variability at the outset, and requiring greater consistency and integration over time. The pollutant-by-pollutant approach taken in the early LRTAP protocols was replaced by the integrated multi-pollutant strategy of the 1999 Gothenburg Protocol. In the regional regime to protect the North Sea, agreements addressing pollution from different sources were developed separately but ultimately merged in the OSPAR Convention on the Protection of the Marine Environment of the North-East Atlantic. Likewise, the 1982 Law of the Sea Convention replaced four parallel agreements adopted in the 1950s with a single integrated package, elaborating a comprehensive rulebook for the world's oceans.

In each of these cases, flexibility helped encourage participation at the outset by allowing countries greater latitude in the pace and focus of their commitments. But ultimately, governments found that stronger integration was needed to deliver a higher level of effort. The transition, in most cases, took decades. In the case of climate change, given the scale and urgency of the challenge, mounting an effective international response will likely require greater integration at a much earlier stage.

III. Issues in Designing a Multi-Track Framework

The design of a post-2012 climate framework adopting an integrated multi-track approach could vary along a number of different dimensions. These include:

- the variability of commitments;
- how commitments are defined;
- types and levels of integration; and
- timing issues.

Variability of Commitments

The commitments undertaken pursuant to different tracks of a multi-track framework could be differentiated in any number of ways.[14] For example:

- Commitments might be more or less binding. For example, one track might contain legally binding emission targets (either absolute, like those in Kyoto, or indexed to GDP), another, no-lose targets.[15]
- Some commitments could be economy-wide and others could relate to a particular sector.[16]
- Some commitments could be obligations of result (for example, an emission target), others obligations of conduct (for example, obligations to adopt and implement particular policies and measures, such as efficiency standards).[17]
- Commitments could differ in terms of timing or stringency.

The degree to which commitments would be differentiated along one or more of these axes could vary widely. At one extreme, each country could have its own individualized package of commitments, as in some other international agreements. Perhaps the best example of a multilateral regime with highly individualized commitments is the tariff reduction schedule of the General Agreement on Tariffs and Trade. Under GATT, countries each put forward their proposed tariff reductions, then examine each others' proposals and negotiate back and forth until all agree that the overall package is balanced. The tariff "bindings" that each country accepts are listed in a schedule on a country-by-country, product-by-product basis.

An example of an environmental regime with highly individualized commitments is the 1991 US-Canada Air Quality Agreement (AQA). Under the AQA, the obligations of each country (the United States and Canada) are listed in an annex, and differ in terms of commitment type (targets vs. performance standards), coverage (sectoral vs. economy-wide, national vs. regional), and timing.[18]

The main advantage of individualized commitments is flexibility: commitments can be highly tailored to take full account of national differences in economic and political circumstances. This flexibility, however, comes at the cost of complexity. Negotiating individualized commitments involves high transaction costs and makes it more difficult to compare the levels of effort undertaken by different countries.

Alternatively, the content of the commitments under each track could be defined in terms of uniform standards applicable to broader categories of countries. For example, countries might agree to a common automobile efficiency standard or to a particular level of financial commitment (expressed, say, as a percentage of GDP). Many multilateral environmental agreements establish uniform standards. For example, the limits set by the Montreal Protocol on the consumption and production of ozone-depleting substances are the same for all states (with the exception that developing countries get a 10-year grace period). Similarly, the requirements for oil tankers set forth in MARPOL Annex I apply to all parties.

Unilaterally vs. Multilaterally Defined Commitments

An integrated multi-track framework could allow individual states wide latitude in defining the nature of their commitments, or it could involve a greater degree of collective decision-making. In general, this choice involves a tradeoff: the more unilateral the approach, the more respectful it will be of national sovereignty, but the less reciprocal, the lower the resulting level of effort.

Unilateral commitments. At one extreme, countries could be allowed to determine the content of their commitments unilaterally. Under this approach, each state would define its own national commitments and then simply memorialize them under the appropriate track of the multilateral framework. The commitments would be legally binding and subject to the framework's reporting, review and compliance provisions. However, states would not be limited in their ability to assume commitments, as they would not require international approval.

An example of this approach is the 1971 Ramsar Convention on Wetlands, which establishes a list of wetlands of international importance and requires each party to include at least one wetland on the list.[19] By listing a wetland, a state assumes certain commitments under the Convention to manage and conserve it. The listing process helps entrench national decisions to protect wetlands and makes it more difficult for a state to later change its mind. Because international listing is unilateral, however, and does not depend on reciprocal efforts by other states, it produces a relatively low level of effort.

Menu approach. A somewhat more multilateral means of defining commitments would be to negotiate an agreed menu of commitments—for example, a common automobile efficiency standard or a defined level of financial commitment (expressed, say, as a percentage of GDP)—among which countries could choose. Countries would be limited in their choice of commitments to those that had been collectively agreed and were on the menu. But they would be able to choose from among these menu items which commitments to accept. The General Agreement on Trade in Services operates along these lines. It articulates a number of rules relating to free trade

in services but they apply only to the extent a country opts in with respect to a particular service sector or a particular mode of delivery of services.

Parallel agreements. A third approach to defining commitments would be to negotiate packages of commitments for particular groups of countries. Under this approach, the parties operating under each track would, in essence, negotiate a multilateral agreement specifying their respective commitments. The states operating under the targets-and-timetables track would agree on a set of targets and timetables, like those in Kyoto; the states operating under a sectoral track would agree on common or harmonized policies such as energy efficiency standards; the states operating under a technology track would agree on a program of technology research and development. In contrast to the first two options, this approach would provide a degree of reciprocity within each track.

Parallel agreements could be negotiated sequentially or simultaneously. International law provides examples of both. In Europe's LRTAP, annexes were developed one by one, starting with a protocol on monitoring and finance, followed by protocols addressing different long-range air pollutants. In the MARPOL oil pollution regime, on the other hand, the first five annexes were negotiated and adopted at the same time. Similarly, the First UN Conference on the Law of the Sea (UNCLOS I), in 1956, produced four independent conventions on the territorial sea, the continental shelf, the high seas, and fisheries. In both MARPOL and UNCLOS I, the agreements were negotiated in parallel, but participating states were not required to accept them all. This allowed states to pick and choose which agreements to join, but limited the ability to make tradeoffs among them.

Agreed package of commitments. Even if commitments are elaborated by individual countries from the bottom up, they could be subject to multilateral negotiations in order to achieve an agreed, balanced package. This is, in essence, the approach taken to tariff negotiations in the international trade regime. At the beginning of each negotiating round, countries put on the table offers of proposed tariff reductions, on a highly individualized, product-by-product basis. But, in the end, the tariff reductions must all be agreed multilaterally in a single package. States must be satisfied that their proposed tariff reductions are being reciprocated by other states, so that the overall package represents a fair balance of concessions.

In the case of climate change, it is likely that states will be willing to act only in return for action by others. Countries operating under the targets-and-timetables track, for example, might not want to commit to targets without knowing what the states operating under the policy-based track were willing to do, and vice versa. To ensure reciprocity not simply within each track but more generally, states may be willing to assume commitments only as part of an overall package, in which all of the commitments under all of the tracks are specified.

Mixed approach. A final option is a mixed approach, in which some commitments are collectively defined (for example, the targets that apply to certain countries) and others are defined in a bottom-up manner by each individual country (for example, commitments to implement specified national policies).

Types and Levels of Integration

As noted earlier, the UNFCCC already provides basic elements of integration, including a common objective and guiding principles (Articles 2 and 3), general commitments that apply to all parties (Article 4.1), a general reporting system (Article 12) and common institutions, including a Conference of the Parties (COP), a secretariat, a financial mechanism and subsidiary bodies. In a multi-track approach, a number of elements—some procedural, some substantive—could provide a stronger basis for integration:

Negotiating parameters. Rather than give countries complete latitude to decide which tracks to pursue, parties could agree at the outset on terms of engagement requiring particular countries (or classes of countries) to negotiate toward commitments under particular tracks. The Berlin Mandate specified the terms of the Kyoto negotiations by essentially predetermining which countries would be subject to quantitative targets and timetables. In a multi-track negotiation, countries with per capita GDPs above an agreed threshold might be expected to assume economy-wide emission targets, while others may have the option of taking targets or policy-based commitments instead. Generally, countries will be more willing to negotiate commitments if the terms of engagement ensure that both they and their counterparts are negotiating within tracks appropriate to their respective circumstances.

Agreed metrics of comparison. To accept commitments, countries must be confident that other parties are also contributing their fair share, which requires some assessment of relative levels of effort. This could be facilitated through the elaboration of common metrics and methodologies for comparing commitments under different tracks—for example, in terms of emission reductions from business-as-usual, total and marginal costs, effect on national GDP, and so forth.[20] Computer modeling has played an important role in the development of other international regimes. For example, in the LRTAP regime, the so-called RAINS model calculated where SO_2 emissions should be cut in order to reduce acid deposition below critical loads at the lowest cost.[21] In the Law of the Sea negotiations, an economic model on ocean mining was used by states to compare the economic implications of different proposals.[22] In the case of climate, parties are unlikely to rely on any one model, but could agree on a set of models as a common analytical base.

Once an agreement is in force, common metrics and methodologies will remain important as a basis for assessing progress and compliance. Different approaches may be appropriate at different stages. One approach would be for parties to designate the secretariat or another body to serve as a common repository of data and methodologies, which parties would draw on to perform their own assessments. Or, the designated body could also perform assessments for the parties collectively.

Entry into force. An overarching set of requirements for entry into force could ensure that countries under one track would not be bound unless a sufficient number of countries (for example, including the major economies) agreed to be bound under other tracks. Setting participation rules involves a tradeoff: the higher the entry-

into-force requirements, the greater the assurance that each country's efforts are being reciprocated by other countries, but the easier it becomes for a single country (or small group of countries) to block.

Trading. Emissions trading could be allowed across the different tracks not only to promote economic efficiency, but also to strengthen the incentives for action. For instance, allowing countries with policy commitments to earn emission credits for meeting or exceeding their commitments would provide a market incentive for implementation. This would require methodologies for verifying emission reductions achieved under non-target-based commitments. In addition, to the extent that a country undertook commitments under multiple tracks, the accounting system would need to ensure that emission reductions were not double counted.

Evolution of commitments. A sense of reciprocity may be easier to achieve if the parties taking the strongest commitments at the outset have some assurance that others will take stronger commitments over time. A multi-track approach could include graduation criteria, based on factors such as per capita GDP, determining when countries would assume commitments under particular tracks.[23] The Montreal Protocol on Substances that Deplete the Ozone Layer, for example, gives developing countries a ten-year grace period to meet its control measures, with graduation criteria (based on per capita consumption of ozone-depleting substances) for determining when a country no longer qualifies for the grace period.

Reporting, review and compliance. A common system to assess and promote compliance would help maintain reciprocity of effort over time. In a framework allowing diverse commitment types, agreed reporting and review requirements may be especially critical to monitor progress and compare effort across all tracks. Existing reporting and review requirements under the Convention and the Kyoto Protocol may suffice for countries in the targets track, but different procedures may be needed for those undertaking other types of commitments. In the case of policy commitments, countries could be required to submit ex ante estimates of anticipated emission reductions to determine whether commitments are credible, and to report periodically on actual emission reductions to assess compliance. As their commitments would not be defined in terms of emissions, however, other measures of effort and compliance could include key regulatory milestones or levels of funding and personnel devoted to implementation.[24]

Additional mechanisms to promote or enforce compliance would help strengthen an agreement's credibility and effectiveness. In a multi-track framework, different compliance approaches may be appropriate for different tracks. Transparent accounting of progress would, at a minimum, encourage compliance through "naming and shaming." A facilitative approach could provide expert advice to countries making inadequate progress to help them improve policy development and implementation. Or penalties could be established for non-compliance. Under the Kyoto Protocol, countries failing to meet their emission targets are required to make up their reductions, plus a 30 percent penalty, in the next commitment period. They also are denied access to the emissions trading system, a compliance approach that, in a multi-track framework, could apply to any country

eligible for trading. Other possibilities include financial penalties and trade measures against non-participating or non-complying states, such as border tax adjustments or countervailing duties.

Institutional integration. The framework could establish new institutions or give additional responsibilities to existing institutions, such as the COP. As noted above, an expert body might be established to elaborate or apply metrics and methodologies for comparing commitments across different tracks, along the lines of the methodologies for GHG inventories developed by the Intergovernmental Panel on Climate Change, or the review by the Organization for Economic Cooperation and Development secretariat of the economic policies of its member states.

Timing Issues: Pathways to Integration

Integration of multiple tracks could emerge over time or could be attempted at the outset. One option would be to start by negotiating parallel agreements—either sequentially, as in the LRTAP example cited above, or concurrently, as in the first Law of the Sea conference. In the climate context, there could be tracks on targets and timetables, policy-based commitments, technology cooperation, adaptation, and finance. After countries had gained experience with the different tracks and had become comfortable with the prospect of deeper international cooperation, the tracks could be brought together in a single regime.

In contrast, the Third UN Conference on the Law of the Sea (UNCLOS III), held from 1973 to 1982, aimed from the outset for agreement on a single package that comprehensively addressed all issues. Negotiations on the different elements proceeded in working groups with different configurations of countries. But, in the end, the working group outputs were all fed into a committee of the whole, which put together the overall package. After languishing for more than a decade, the treaty entered into force in 1994, after it was revised to address the concerns of some states about its seabed mining provisions.

By bringing all parties into a single negotiation, and enabling linkage and tradeoffs among issues, an approach that is closely integrated from the start may offer a quicker route to an ambitious, comprehensive climate agreement. The pace of integration, however, depends ultimately on the strength of political will.

IV. Approaches to Structuring a Multi-Track Framework

With these examples and design variables in mind, it is possible to envision a number of pathways toward a comprehensive agreement establishing different types of commitments among the major emitting countries. This section assesses three approaches occupying a range of positions along the flexibility/integration continuum—from most flexible and least integrated to least flexible and most integrated.

Individualized Commitments. At one end of the spectrum is an "individualized commitments" approach: countries would propose their own individualized commitments, and then negotiate with one another to reach a mutually acceptable package. In essence, each country would have its own "track." This is the approach taken to tariff negotiations under the General Agreement on Tariffs and Trade.[25]

Illustration: Individualized Commitments

- Countries agree to negotiate a new protocol under the UNFCCC.
- Countries negotiate general provisions regarding the negotiating process (for example, how commitments are to be proposed and what they must contain), as well as reporting, review and compliance.
- Each country puts forward its "offer" of the commitments it is willing to undertake (for example, involving emissions targets, sectoral policies, technology cooperation, financial assistance, or adaptation approaches).
- Countries adjust their offers based on what others are offering. This process continues until each is satisfied with the overall package of commitment offers.
- When all of the participating states are satisfied with the overall package of commitments, these commitments are memorialized in a schedule on a country-by-country basis.
- Every five years, a new round of negotiations is undertaken.

Allowing individualized commitments gives states maximum flexibility to tailor their international obligations to their specific national circumstances and interests. Their commitments can grow out of and reflect their national policy approaches, rather than having to conform to structures or types determined internationally.

There are, however, significant disadvantages. The flexibility afforded by this approach comes at the cost of complexity. Negotiating individualized commitments involves high transaction costs and makes it more difficult

to compare the levels of effort undertaken by different countries. For this reason, such negotiations are very difficult and tend to be possible only when other aspects of a regime are comparatively simple—for example, when the regime involves only a few countries. For example, the US-Canada Air Quality Agreement involved only two countries. By contrast, even a "big economies" approach to defining new climate commitments would involve 15 to 25 countries and, therefore, considerably greater complexity.

The GATT tariff negotiations may seem to provide a closer model, because they involve many countries, but they differ from the climate negotiations in two important respects. First, they involve only a single commitment type—tariff reductions—making comparisons among national offers easier. In addition, according to trade economics, states typically have an interest in reducing tariffs unilaterally, which reduces the importance of comparing commitments to ensure reciprocity. Even so, product-by-product tariff reduction negotiations have become so complicated that, since the Kennedy Round negotiations in the 1960s, there has been considerable pressure to move towards a formula-based approach, which would define, from the top down, a general formula for reducing tariffs on broad classes of products, rather than starting with national offers.

Because of the difficulty of comparing different packages of nationally defined commitments, a highly individualized approach is very unlikely to produce ambitious levels of effort. Countries likely would start out offering only no-regrets measures—that is, measures that make sense for them otherwise, for economic, national security or development reasons, and that they therefore are willing to pursue regardless of what other states do. With little consistency among commitment types, integrative features such as review and compliance mechanisms, which could help keep countries on track and encourage stronger efforts over time, would be difficult to construct and manage. Similarly, a common platform for international emissions trading would likely emerge more slowly, making the overall effort less economically efficient.

An individualized approach to defining commitments might represent one element of a comprehensive framework—appropriate, say, for the initial round of developing country commitments. However, it is not likely to be workable or desirable as a general method of developing commitments.

Parallel agreements. Another approach would be to negotiate a set of parallel agreements establishing different types of commitments (targets, policy commitments, etc.) and/or addressing different sectors (forestry, cement, aluminum, etc.).[26] The agreements would be components of an integrated framework with a common reporting and review system, dispute resolution mechanisms, and so forth. But countries could choose among the parallel agreements; none would require universal participation or acceptance. For instance, if there are separate agreements on the power, transportation, and land-use sectors, countries could choose to participate in one, two, or all three. This introduces a stronger degree of structure than the individualized commitments approach, with greater consistency in the type or focus of commitments, while still allowing countries considerable latitude in choosing which tracks to pursue.

Illustration: Parallel Agreements

- Countries agree to negotiate a new protocol, consisting of a general agreement and annexes on:
  - Track A: Targets and timetables
  - Track B: Sectoral policies
  - Track C: Technology cooperation
  - Track D: Adaptation measures
  - Track E: Financial assistance
- The general articles include:
  - An overall aim to reduce global emissions by a specified amount for a given commitment period.
  - A process by which countries can revise their national commitments.
  - A review process to evaluate whether a country has achieved the commitments it has made under the tracks in which it is participating.
- All countries participate in the negotiation of the general provisions of the agreement and the Track D and E annexes. Countries are permitted to elect whether to participate in the negotiations on Tracks A, B, or C.
  - Agreements can be reached sequentially. Agreement under one track is not contingent on agreement under other tracks.

Parallel agreements could be negotiated simultaneously (what might be regarded as a true parallel approach) or sequentially. Negotiating them sequentially would allow the regime to evolve gradually, its scope broadening to take in additional sectors or additional types of commitments. However, negotiating agreements simultaneously may allow some tradeoffs across agreements and, therefore, greater reciprocity. (Still, there would be only a limited degree of reciprocity unless all participating states are required to ratify the full set of agreements as a package.)

The principal advantage of a parallel agreements approach is that it allows countries to pick and choose among agreements, based on their national circumstances and level of political will. This strategy has been used successfully to address other environmental problems such as acid rain and marine pollution, and thus has a proven track record. This advantage, however, is also a significant source of weakness. By allowing countries to pick and choose which agreements to join, it is more difficult to negotiate across agreements and thereby achieve strong reciprocity and a higher overall level of effort.

Parallel agreements thus work best if they address discrete issues that are only loosely connected, such as the different types of long-range air pollution addressed by LRTAP or the different sources of marine pollution

addressed in the MARPOL annexes. They work less well in addressing a single integrated issue, such as climate change. While offering greater coherence than individualized commitments, parallel agreements are very unlikely to prove sufficient in the long term. They might offer a transitional approach toward developing a more integrated regime. The risk, however, is that pursuing parallel agreements as an interim strategy would delay, rather than speed, the emergence of a stronger framework.

Integrated commitments. A third approach would be for countries to agree at the outset on a limited number of tracks—and on which countries would negotiate within which tracks—with the aim of a single, integrated agreement in which all commitments are agreed as a package. As in the other approaches, there would be multiple commitment tracks and a common core of provisions on reporting, etc. But unlike the individualized commitments option, commitments would not vary so widely; instead, they would fall into several general tracks, with bounded types of commitments. And unlike the parallel agreements approach, there would be agreement at the outset of which states would be participating in which tracks, rather than allowing countries to pick and choose. In addition, there would be no agreement under any one track without simultaneous agreement under all other tracks.

An integrated agreement of this type could be composed of several different sections or annexes defining different types of commitments for different groups of countries. For example, countries with higher per capita GDPs might participate in an annex setting emission targets, countries in a second tier in an annex on policy commitments, and various combinations of the two in annexes defining commitments for particular sectors or for technology cooperation. Additional annexes could address adaptation or technology and financial assistance for developing countries.

Within each track, there would still be room for considerable differentiation of commitments. For those countries taking emission targets, for example, specific target levels could vary widely, as they do under the Kyoto Protocol. Likewise, within the policy commitments track, specific commitments could be highly differentiated. One country might commit to an energy intensity or renewable energy target; another might commit to measures to reduce deforestation. The individualized commitments approach described above would, in essence be, one track within an integrated package of commitments. Countries could have commitments under more than one track depending on their particular circumstances.

A critical feature of this approach would be defining at the outset the terms of engagement—the specific tracks under which each country or group of countries would negotiate. The Berlin Mandate, which launched the negotiations that led to the Kyoto Protocol, spelled out very clearly both the type of commitment to be negotiated (quantified emission targets) and the countries to which it would apply (industrialized). While a negotiating mandate need not specify the full complement of commitments that any one country would be expected to negotiate, it would need to set out certain minimum expectations.

Illustration: Integrated Commitments

- States adopt a negotiating mandate with the goal of a comprehensive package of commitments. The mandate identifies different commitment tracks and specifies which countries or groups of countries are to negotiate within each track.
- Each track is defined by a different commitment type (i.e., targets and timetables, policy commitments, sectoral standards, etc.). Within each track, commitments can be further differentiated.
- Countries agree on common metrics for assessing and comparing the levels of effort being proposed under different tracks, and adjust their proposals based on what others have offered.
- Commitments under all tracks are adopted as a package.
- The agreement also includes common provisions applying to all countries, including:
  - Reporting requirements.
  - Compliance and enforcement mechanisms.
  - Criteria for graduating from one commitment track to another commitment track.
  - A process for periodically negotiating new commitments.

The critical advantage of an integrated commitments approach is that it allows states to make linkages across different commitment types. By providing greater reciprocity, an integrated package would make possible a higher overall level of effort. Undertaking this approach requires a higher degree of political alignment. Because agreement on particular tracks would be contingent on agreement among all participants on the entire package, a small number of countries could block overall agreement. On the other hand, by providing greater confidence that all major players are contributing their fair share, an integrated commitments approach would help strengthen political support in many countries for climate action, and isolated holdouts would feel stronger international pressure to join, or at least not impede, the global effort.

While the political hurdles may be high, the integrated commitments approach is the one most likely to deliver broad-based action on the scale needed to address climate change. Given the urgency of the challenge, it should at the very least be the aim of the next round of international climate negotiations.

V. Conclusions

Ten years after the negotiation of the Kyoto Protocol, with the risks of climate change ever more apparent, yet with global emissions rising ever more steeply, the future of the international climate effort remains highly uncertain. The existing commitments by industrialized countries under the Kyoto Protocol expire after 2012. In theory at least, negotiations are now underway to set new commitments for countries with Kyoto targets, a group that includes neither the United States nor developing countries. While the European Union has unilaterally pledged deeper emission cuts, in hopes of inducing others to follow suit, other industrialized countries are openly ambivalent about assuming new commitments unless the United States and the major emerging economies do as well. As presently structured, the negotiations are unlikely to succeed and incapable of producing a comprehensive post-2012 agreement. What is needed is a new negotiation under the Framework Convention—to which all the major economies are parties—either encompassing or linked to the ongoing negotiations under the protocol.

In order to broaden the negotiations, it will be necessary to introduce new flexibility by allowing a range of commitment types, not only Kyoto-type targets. Experience in other multilateral realms has shown the importance of such flexibility in achieving broad participation. At the same time, experience has shown that too much flexibility can result in too little effort. In other contexts, agreements that initially offered a high degree of variability have tended to evolve toward greater consistency and integration. With closer integration came greater reciprocity of effort, enabling governments to assume stronger commitments.

Typically, this progression took time. In the case of climate change, however, there is little time to spare. Achieving the steep reductions in global emissions needed to stabilize GHG concentrations at safe levels requires immediate and ambitious efforts by all major emitting countries. A slowly evolving regime will not suffice. Rather, the challenge is to construct an international framework that, from the start, strikes an appropriate balance between flexibility and integration—flexible enough to secure broad participation, yet integrated enough to deliver strong, sustained action.

This balance is best achieved through an "integrated commitments" approach in which the major economies negotiate a comprehensive package comprised of different commitment types, or tracks. The "integrated commitments" approach is characterized, in particular, by two critical elements. First, countries must agree upfront on terms of engagement specifying the different commitment types and to which countries they will apply. Second, all tracks must be agreed as a single comprehensive package. This allows countries the flexibility of different commitment types while promoting a balanced, and therefore more ambitious, outcome.

In such an approach, the Kyoto negotiations could become one track in a multi-track negotiation leading to a comprehensive post-2012 package with elements under the Convention, the Protocol and, possibly, new instruments as well.

Politically, launching such a negotiation requires, first and foremost, a willingness on the part of the United States to negotiate commitments. There is growing momentum in Washington toward the enactment of mandatory federal policies to limit and reduce U.S. emissions. Once those limits are in place—most observers now agree the question is when, not if—the United States will have a strong incentive to help construct a stronger international framework to ensure that other countries contribute their fair share to the global effort. Still, the United States' readiness to negotiate, while essential, is only one hurdle. Persuading China, India and the other major emerging economies to begin negotiating commitments may prove a far greater challenge.

In all countries, the most critical ingredient in setting the pace and scale of effort is the gathering of political will. On this, as on any other global challenge, an international policy framework is more an expression than a source of the political will that arises within national contexts. Yet this is not strictly a one-way street. The effort to construct the international framework, and the shape it takes, can serve either to strengthen or to deter the will of nations. Ideally, the international framework not only captures and capitalizes on the collective political will, but also drives it further. That, in broad stroke, is the aim of the integrated multi-track approach described here. Through its flexibility, it seeks to gather together any and all efforts emerging around the globe. And, by integrating these efforts in a mutually re-enforcing compact, it seeks to encourage nations to be yet more ambitious, producing a collective effort greater than the sum of its parts.

Notes

1. See generally Aldy, Barrett and Stavins (2003); Baumert et al. (2002); Bodansky (2004); Aldy & Stavins (2007).

2. A different type of multitrack approach is explored in Barrett (2007).

3. Lewis and Diringer (2007).

4. Bodansky (2007).

5. Pew Center on Global Climate Change (2005).

6. *Ibid* at p. 19.

7. For more on potential adaptation approaches in a post-2012 framework, see Burton et al. (2006).

8. Pew Center on Global Climate Change (2005) at p. 9.

9. Lewis and Diringer (2007); Figueres (2005).

10. The Clean Development Mechanism allows the certification of emission credits for emission reductions resulting from projects in non-Annex I (developing) countries. These credits can be applied by Annex I (developed) countries toward their emission targets. The twin objectives are to promote "clean" investment in developing countries and to provide developed countries with low-cost emission reduction options.

11. IEA (2006); UNFCCC (2007).

12. On the trade regime generally, see Trebilcock and Howse (2005).

13. Similarly, enforcement does not pose the same challenge in trade as it does in the climate context. The bilateral nature of trade gives countries greater incentive and ability to punish other countries for violating trade rules, through retaliatory trade restrictions. In contrast, climate change is a collective action problem: violations by one country harm other countries collectively, so individual countries have less incentive and ability to target retaliatory measures against the particular violator.

14. For an elaboration of different commitment types, see Bodansky (2003).

15. "No-lose targets" are non-binding: if a country exceeds its emissions target, there is no compliance consequence, but if its emissions are below its target, it can sell its surplus emission allowances to other countries.

16. Bodansky (2007); OECD (2005); Schmidt et al. (2006).

17. Lewis and Diringer (2007); Winkler et al. (2002).

18. For sulfur dioxide, the United States agreed to reduce its national emissions by 10 million tons from 1980 levels by 2000, and to achieve a permanent national emission cap of 8.95 million tons for electric utilities by 2010, while Canada agreed to reduce its emissions in seven provinces to 2.3 million tons per year by 1994 and to cap its emissions at that level through 1999. For nitrogen oxides, the annex contains a mix of national emission limits and performance standards for stationary and mobile sources.

19. Similarly, the GATS allows each country to decide for itself which service sectors to include in its schedule of specific commitments.

20. Philibert (2005).

21. Castells and Ravetz (2001). The RAINS model is an integrated assessment model of alternative emission control strategies.

22. Miles (1998).

23. Many existing proposals for the post-2012 climate architecture include graduation criteria. See Bodansky (2004) at pp. 13-16.

24. Lewis and Diringer (2007).

25. Reinstein (2004).

26. Sugiyama et al. (2004).

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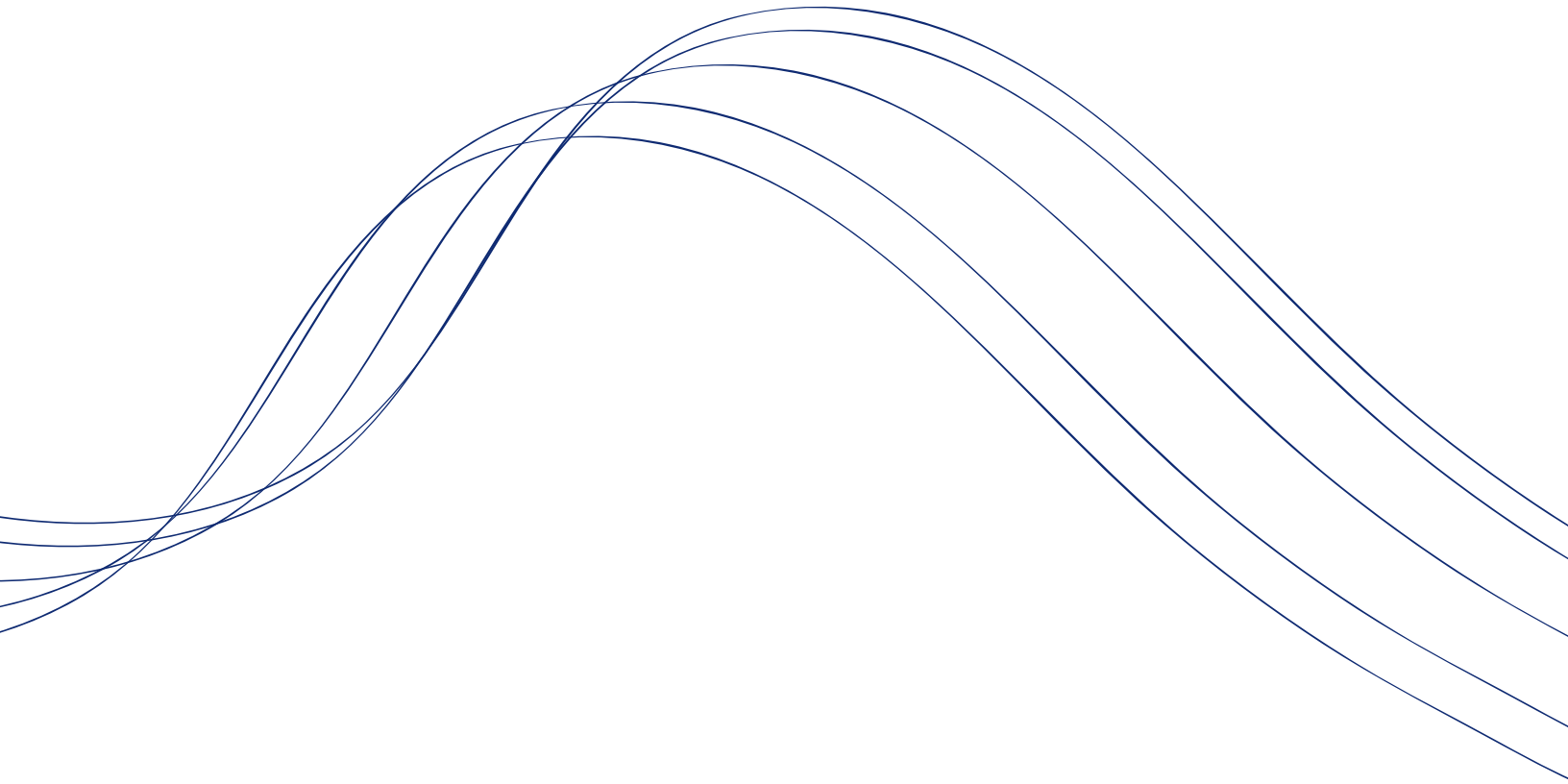
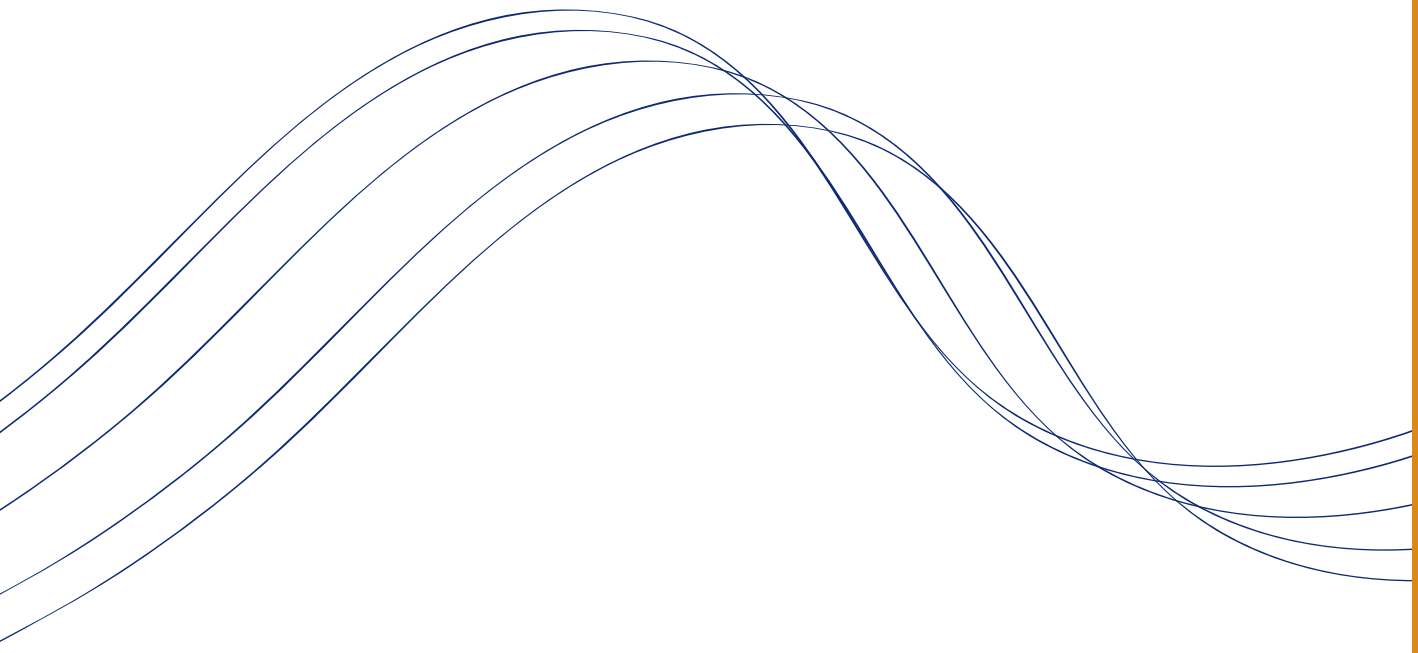


This paper describes an integrated multi-track approach to fashioning a post-2012 international climate change framework. It is part of a Pew Center series expanding on key recommendations of the Center's *Climate Dialogue at Pocantico.* The Pew Center was founded in 1998 to bring a cooperative approach and critical scientific, economic, and technological expertise to the global climate change debate. We inform this debate through wide-ranging analyses in the areas of policy (domestic and international), economics, environment, and solutions.



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