

# Next Steps for the Transatlantic Climate Change Partnership

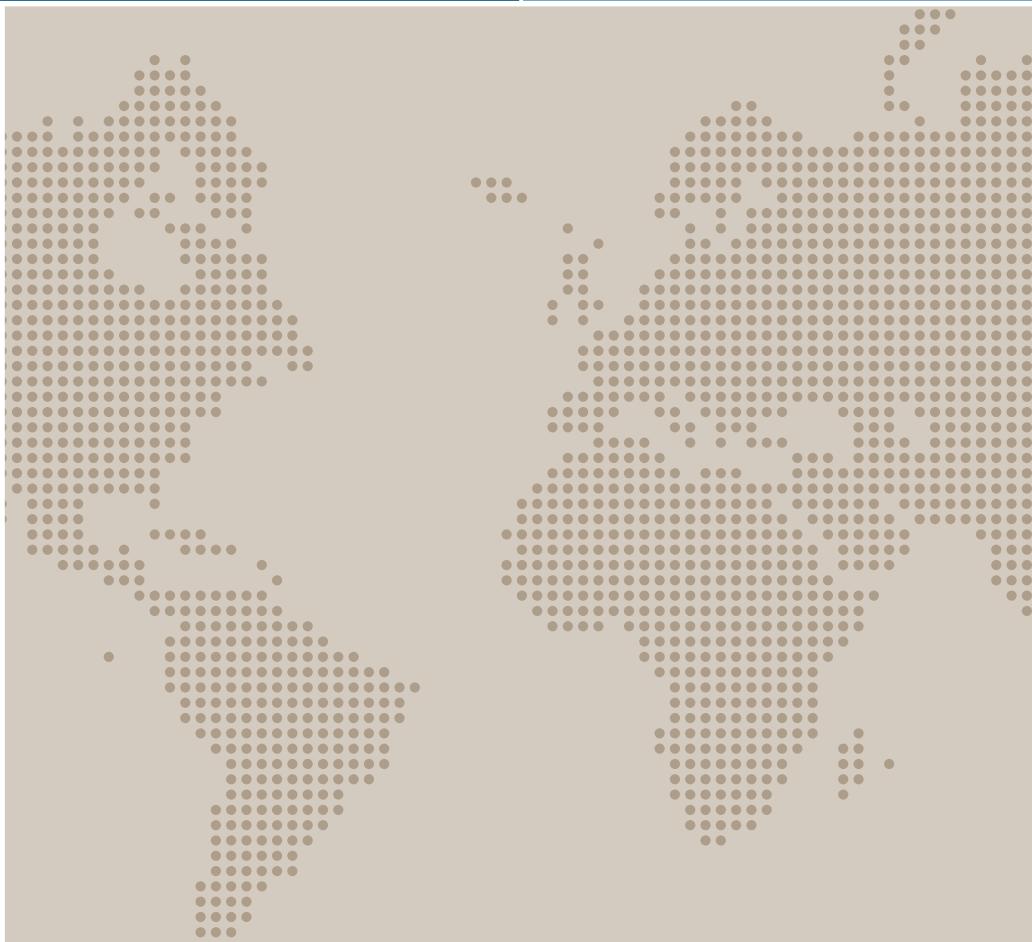
A Report of the Global Dialogue between the European Union and the United States

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PROJECT DIRECTOR  
**Simon Serfaty**

DECEMBER 2009



CSIS

CENTER FOR STRATEGIC &  
INTERNATIONAL STUDIES

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# FOREWORD

We are facing a decisive period for the institutions of the Euro-Atlantic community and the 34 countries that are members of either the European Union or NATO or both—with more yet to come. Issues of concern—security, economic, political, societal, and even planetary—have become increasingly bundled into circumstances that cannot be addressed by any nation alone, however powerful, or any single institution, however influential. Under such circumstances, capabilities, too, need to be bundled for use through comprehensive approaches that combine both hard and soft power into smart power, and also rely on both the states and the institutions, regional and global, that can best provide and combine the needed capabilities and will to ensure that tomorrow's solutions are effective for all.

It is with this belief that in early 2008 the Zbigniew Brzezinski Chair in Global Security and Geostrategy at the Center for Strategic and International Studies (CSIS) launched a new project entitled a Global Dialogue between the European Union and the United States. The dialogue was organized around five broad issues that represent serious and pressing challenges for and beyond the states of the Euro-Atlantic community but lend themselves especially well to ever-closer relations, consultation, and cooperation between the European Union and the United States:

- Issues of **stabilization and reconstruction**, and the problem of failing states;
- The dilemmas of **climate change**, including mitigation of its causes and adaptation to its impacts;
- The risks of **energy scarcity**, and strategies for sustainable **energy security**;
- Challenges in the **world economy**, and the new modalities of **global economic governance**;
- The need for strategic convergence, and the formation of a **Euro-Atlantic security strategy**.

The paper that follows was developed in the context of an especially significant conference scheduled to be held in Copenhagen, Denmark, in December 2009. In late November, U.S. president Barack Obama's decision to attend the meeting in spite of an extraordinarily demanding agenda reflected the universal significance of this meeting and its issues. This report examines the evolution of U.S. and EU policies on the way to Copenhagen, and the steps that will be needed past that meeting in and beyond 2010 to reinforce further a transatlantic partnership on climate change issues and give it the capabilities and will needed to address these issues effectively in current and future negotiations. As the authors of this report emphasize, “a major positive development in 2009 has been that the transatlantic gap has narrowed considerably compared to previous years,” and the report examines ways in which further progress can be made to reinforce

this trend for ever-closer cooperation and coordination of U.S. and EU decisions and actions in these areas.

This paper is the fifth in a series that began with *Enhancing Stabilization and Reconstruction Operations*, by Julian Lindley-French (and Robert E. Hunter), and includes *Transatlantic Cooperation for Sustainable Energy Security*, by Frank Kramer and John Lyman (with Robin Niblett), *A Shared Security Strategy for a Euro-Atlantic Partnership of Equals*, by Simon Serfaty and Sven Biscop, and *The Transatlantic Economic Challenge* by Bruce Stokes and Hugo Paemen. Although this is also the final paper in this series, we expect that each of these reports will continue to play a role in a U.S.-EU dialogue on the issues, which will continue in coming years as well.

I am deeply grateful to my friends and colleagues Christian Egenhofer, senior fellow at CEPS in Brussels, and David Pumphrey, senior fellow at CSIS here in Washington, for their willingness to commit their talent and experience to the preparation of this paper and for leading the discussions that led to its conclusions. I am equally grateful, as they both are, to their coauthors, Sarah Ladislaw, a CSIS senior fellow, and Anton Georgiev, a CEPS research fellow. They all join me in extending our thanks to the many leading experts on both sides of the Atlantic who shared their ideas and made suggestions privately or in the course of meetings specifically arranged for this project in Washington, D.C., and in Brussels. This was a large group, which makes it difficult to thank each participant individually, but we wish to extend our thanks to Julianne Smith, who was involved with this specific part of our project when she was director of the CSIS Europe Program and before she joined the Obama administration earlier this year.

Derek Mix, then my close collaborator at CSIS but now an analyst with the Library of Congress also made important contributions in assisting the direction of this project and our work on this paper, and we are grateful to him as well.

As with two preceding programs on EU-U.S.-NATO relations completed by the Brzezinski Chair in the 2004–2007 period, the Global Dialogue between the European Union and the United States was made possible by a grant from the European Commission. I am tremendously thankful for this continued support.

*Simon Serfaty  
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# NEXT STEPS FOR THE TRANSATLANTIC CLIMATE CHANGE PARTNERSHIP

*Christian Egenhofer, David Pumphrey,  
Sarah Ladislaw, and Anton Georgiev*

## Introduction

For much of the last two years the international community has worked toward developing an international agreement to lay out the basic framework of a new climate change regime. The slow progress to date does not result from a lack of effort or opportunity. The European Union has set forth ambitious goals and continues to urge all developed countries to follow suit. The United States, long viewed as the major obstacle to progress, has played a very active and productive role both in the negotiations (whether in the UN context or in other multilateral fora) and in its steps to establish a robust domestic climate change program since the start of 2009. Developing countries and emerging economies have also adopted promising domestic emissions reduction plans, and several developed countries, led by the United States, continue to push the largest of these countries to contribute those commitments to the negotiating process.

Throughout 2009, climate change has been at the top of the agenda at nearly every major international meeting, and major economies have met repeatedly, both inside and outside the UN negotiating process, to overcome deadlocks on key obstacles to an agreement. Yet, with many of the major issues up for debate still unresolved, these meetings have confirmed that developing and developed countries find it hard to reach a comprehensive agreement that will include, but not be limited to, resolutions on burden sharing and global financing.

A major positive development in 2009 has been that the transatlantic gap has narrowed considerably compared to previous years—to such an extent that a joint EU-U.S. platform on many key elements now appears possible, perhaps even likely. This paper explores the current status of energy and climate policy in both regions—opportunities for, but also risks to, further progress—and suggests ways in which the United States and the European Union can find common ground for cooperation on key issues of shared interest for current and future negotiations. Major areas of shared interest and future cooperation include:

- *Carbon market and linking of emissions trading schemes (ETSSs)*: Quick progress toward linking the EU and U.S. carbon markets (“transatlantic emissions trading scheme”) is unlikely, but its eventual benefits cannot be ignored. The best option appears to be a surrogate linking of systems through price convergence as a result of arbitrage made possible through

international offsets including the reformed Clean Development Mechanism (CDM) among other mechanisms. It is important for this area of engagement to continue to evolve. As these systems link with one another, their success or failure becomes intertwined. Given a growing skepticism over the proper functioning of financial and commodity markets, it will be essential that countries with emissions trading regimes think carefully about how to create stability, effectiveness, and transparency in what has the potential to be one of the largest commodity markets in the world.

- *International offsets:* Both the United States and the European Union regard offsets as a useful though sometimes complicated tool for effective climate policy. Offsets reduce the cost of domestic emissions reduction by offering lower cost emissions reduction outside covered sectors or in non-covered economies. Offsets also allow for money from countries with robust climate policies to finance mitigation activities in developing countries, an important consideration for climate negotiations. All offsets, however, are not created equal, and their inclusion raises many complicated policy issues. Working under the climate policy being considered in the U.S. Congress and with current EU policies, the United States and the European Union must ensure the integrity and efficacy of all types of offset programs, including most notably the Clean Development Mechanism. Despite its shortcomings, the CDM is the most developed mechanism for, and successful generator of, international offsets currently available. Developing countries strongly support it as the largest source of financing for clean energy and energy efficiency investment, which they consider a major contributor to sustainable development and adequate investment. Theoretically, the CDM based on the UN Framework Convention on Climate Change (UNFCCC) could be replaced by domestically developed offset programs managed by individual countries, but developing countries are loath to move the mechanism outside UN jurisdiction. The continued success of offsets both inside and outside the CDM context depends on the perceived integrity of the offsets. The United States and the European Union have a common interest in building offset systems and programs that inspire investor and consumer confidence in the emissions reduction that come with offset purchases. Both also share the desire to see offset markets grow to include new and previously excluded types of offsets into the market. These objectives require careful attention and execution and provide a ripe area for transatlantic cooperation.
- *More transatlantic cooperation on monitoring, reporting, and verification (MRV):* The ability to assure compliance is the backbone for both an international climate change regime and the carbon market. Only with high levels of compliance will emissions trading systems achieve reductions in greenhouse gas (GHG) emissions efficiently, effectively, and equitably but also create the level of confidence and trust that linking will require. MRV and compliance systems are radically different between the European Union and the United States, requiring significant investment to increase the mutual understanding. The United States and the European Union have worked together on these issues for many years, but more can be done. For example, transatlantic discussions could involve the business community, and more

generally the issue could use a higher political profile. Such efforts could eventually serve to create the foundation for a mutually agreeable global compliance scheme or template.

- *Competitiveness:* The European Union and the United States face intense domestic pressure and debate on “competitiveness” and “carbon leakage.” Both are inclined toward “free allocation” and some “direct compensation” to protect domestic industries from the adverse effects of an uneven playing field, and they reserve the right to impose border tariff adjustments over time if other countries have not taken comparable action to reduce emissions. These border tariffs could have a negative effect on international trade flows, and both the United States and the European Union should explore alternative options such as the role of global sectoral agreements. Neither the United States nor the European Union can reach one of these alternative policy options without the participation of other major developed and developing countries, but a common position will certainly help strengthen the chance of reaching an eventual agreement with the broader international community.
- *From competitiveness concerns to new opportunities:* The United States and the European Union are grappling with competing notions about competitiveness as it relates to the competitive disadvantage borne by certain industries under carbon constraints. A larger question of competitiveness, however, deals with the strategic advantage to be realized by the creation of a low-carbon economy. To an extent, both the European Union and the United States have incorporated the latter notion into their domestic climate debate. While the argument has gained traction in the European Union, the United States remains split over whether the opportunities will indeed outweigh the costs. In order to maintain momentum toward the transition to a new clean energy economy, it will be important that the United States and the European Union provide evidence of these new opportunities and continue to insist on available competitive opportunities that outweigh competitive disadvantage. This type of economic transition is unprecedented in scope, pace, and scale, but success is critical. The European Union and the United States should work together to continue the momentum and success of these developments.

## Understanding the Policies and Politics of Climate Change

Over the past decade, the United States and the European Union have had different views on energy and climate change. With the advent of the Obama administration, a dramatic shift in U.S. policy has allowed the European Union and the United States to find much more common ground. Several key differences remain, however. Thus, their political economies and, therefore, the industrial and political considerations that shape their policies vary. The European Union is much farther along in building consensus among its member states than the United States is with individual states and their representatives in Congress. The EU policy position is much more established while the U.S. approach to climate change remains uncertain and hotly debated. This

section outlines the interests and objectives of both the United States and the European Union, as seen in their respective domestic political debates and the related international negotiations.

## After the EU Climate and Energy Package

EU climate change policy is based on the European Union's long-term target to limit global temperature increase to a maximum of two degrees Celsius above pre-industrial levels.<sup>1</sup> In order to achieve the medium-term GHG emissions reductions required of developed countries under this scenario, the EU Council formally adopted an integrated climate and energy package on April 6, 2009.<sup>2</sup> The legislative package operationalizes a set of EU targets—generally referred to as “20-20 by 2020”—to reduce GHG emissions and to increase the share of renewable energy sources in the European Union’s energy mix.<sup>3</sup> It includes the following key elements:

- *Emissions Targets:* Binding absolute emissions reduction targets include a unilateral “firm independent commitment” by all the 27 EU member states to reduce their emissions jointly 20 percent below 1990 levels by 2020. The package also establishes a more ambitious reduction target of 30 percent below 1990 levels by 2020, provided there is a global agreement that commits developed countries to “comparable emission reductions” and advanced developing countries to “contributing adequately.” The unilateral 20 percent target will be met by strengthening the EU Emissions Trading System (ETS) to reduce emissions 21 percent below 2005 levels in covered sectors<sup>4</sup> and by reducing emissions 10 percent in all other non-ETS sectors, including transportation, agriculture, waste, and buildings, through EU-wide and member state policies. To allow flexibility for member states to meet the 10 percent target in the non-ETS sectors, member states, along with their national policies, can make use of CDM credits, bank excess reductions, and trade emissions rights among themselves.

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<sup>1</sup> This target stems from the work done by the UN Intergovernmental Panel on Climate Change (IPCC) in their Fourth Assessment Report released in 2007. Associated emissions reduction targets and timetables also stem from the IPCC work.

<sup>2</sup> The climate and energy package should be seen in its entirety, including its mentioned elements, but also the Strategic Energy Technology (SET) Plan and new state aid guidelines. The European Union had already published the so-called SET Plan (European Commission 2007a) to strengthen research, development, and demonstration of new technologies including those relevant for addressing climate change. Finally, the EU review of the level and nature of allowed subsidies or state aid is ongoing. For a press statement on the Council’s adoption of the “climate-energy legislative package,” as well as links to all of its elements, see [http://www.consilium.europa.eu/uedocs/cms\\_data/docs/pressdata/en/misc/107136.pdf](http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/misc/107136.pdf).

<sup>3</sup> The targets also include a nonbinding energy efficiency goal of reducing primary energy consumption by 20 percent by 2020 compared to projections. These were adopted by the European heads of state and government at their March 8–9, 2007, spring summit (European Council 2007, 12–21).

<sup>4</sup> The EU ETS currently covers about 40 percent of the European Union’s total GHG emissions, which is expected to increase slightly from 2013 after implementing the expansions of its scope (aviation emissions, additional sectors and additional gases). See European Commission 2009c.

- *Renewable Energy Target*: A binding target of 20 percent renewable energy sources in the European Union's final consumption of energy by 2020, which includes a binding minimum 10 percent share of biofuels and other renewable transportation fuels in each member state's transport energy consumption by 2020.
- *Carbon Capture and Storage Goal*: A commitment to cofinance the construction of up to 12 large-scale power plants using carbon capture and storage (CCS) technology, as well as a legal framework for CCS.
- *Vehicle Emissions Performance Standard*: An emission performance standard of 120 grams CO<sub>2</sub> per kilometer for all new cars by 2015.

Growing EU concern over the future security of its energy supply served as a positive force toward the adoption of the climate change package in a very short period and with limited controversy. During the time the European Union was considering the package, EU countries were concerned because domestic resources were dwindling at the same time that many supplier countries seemed unable to increase production due to a lack of investments, were hostile toward the West, or were politically unstable. Europe's dependence on Russia for natural gas also raised the prospect of "excessive" leverage of supplier countries over some EU countries. In this situation, the European Union and its member states saw investment in renewable energy sources, pushing CCS technology for fossil and other fuels, and investment in nuclear energy in member states that wish to do so, as key elements of domestic and external policy options to move to a more sustainable and secure energy supply.

Shifting to a more secure, low-carbon energy future requires, however, a CO<sub>2</sub> price that is capable of providing a price signal to encourage investment into low-carbon technologies, most notably in the power sector, and complementary policies to push the development and deployment of new technologies into the marketplace.<sup>5</sup> The renewable energy policy was also sold as an opportunity to provide technological leadership in emerging technologies.

The principal discussion in the EU Council and Parliament has been about costs and their distribution across member states and between industrial sectors, and also about whether industries would receive their emission allowances for free or would have to buy them. A striking feature of this discussion has been that neither industry nor EU governments has contested the overall ETS emissions cap of 21 percent by 2020 compared to 2005, as proposed by the European Commission. Such lack of opposition is due to widespread recognition among members of the significant long-term energy and climate challenges facing the European Union. It also results from burden-sharing arrangements that carefully distributed the burden of hard targets for the EU ETS and the non-ETS sectors, as well as for renewable, with a mixture of efficiency and equity

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<sup>5</sup> Within the next 25 years, the European Union is expected to invest in power at the size of its existing power generation capacity (e.g., approximately 600 gigawatts) to replace aging plants and accommodate demand growth in the power sector.

considerations reflecting a least-cost approach for the European Union as a whole, but with some adjustment to ensure that costs for member states remain roughly similar in per-capita terms.

## The New Push for Climate Policy in the United States

The United States has embarked on an intense political debate on how to address the risks of climate change. During the 2008 presidential campaign, energy and the environment received a great deal of attention. With record high oil prices, U.S. policymakers were concerned about the economic and national security implications of oil imports and the vast amount of money the United States was shipping overseas to pay for its “addiction” to oil. The Obama campaign sought to balance this concern for energy security with the pressing need to address climate change and the desire to move the country toward a new sustainable and decidedly “greener” energy system. With the onset of the financial crisis and economic downturn, this energy and climate platform became one of the administration’s key pillars for economic recovery, by educating a new generation of scientists, deploying and creating new technologies, and creating millions of new jobs.

Within weeks of coming to office, the new administration and Congress passed the American Recovery and Reconstruction Act of 2009. This \$780-billion stimulus bill contained a number of provisions intended to stimulate investment in energy efficiency and renewable energy, including an estimated \$72 billion in direct spending on support for low-carbon energy deployment, energy research and development, smart grid, energy efficiency, and transportation-related projects with an additional \$20 billion of tax incentives for renewable energy projects. This represents a 343 percent increase in the normal annual funding for clean energy.<sup>6</sup>

An analysis of the impact of the stimulus package, as well as some of the more recent energy policy changes made prior to the Obama administration (including the various standards, mandates, tax incentives and subsidies), shows that the existing framework is unlikely to move the U.S. energy system to a low-carbon platform on the order of what is recommended by the UN Intergovernmental Panel on Climate Change (IPCC).<sup>7</sup>

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<sup>6</sup> See D.J. Weiss and A. Kougantakis 2009.

<sup>7</sup> In recent years the United States has enacted three major pieces of legislation that can make important although not transformative contributions to reducing the amount of carbon used in the economy. The *Energy Policy Act of 2005* contained provisions to support the rebirth of the nuclear power industry and the *Energy Independence and Security Act of 2007* put in place higher efficiency standards for vehicles. An assessment of the effect of these policies can be found in Energy Information Administration (EIA), “An Updated Annual Energy Outlook 2009: Reference Case Reflecting Provisions of the American Recovery and Reinvestment Act and Recent Changes in the Economic Outlook,” U.S. Department of Energy, April 2009, [http://www.eia.doe.gov/oiaf/servicerpt/stimulus/pdf/sroiaf\(2009\)03.pdf](http://www.eia.doe.gov/oiaf/servicerpt/stimulus/pdf/sroiaf(2009)03.pdf).

The U.S. Congress has now begun a serious debate over new legislation that would put in place a long-term carbon policy. On June 26, 2009, the House of Representatives passed the American Climate and Energy Security Act of 2009. Known as the “Waxman-Markey bill,” named for the two congressmen who led the drafting process, the act establishes a goal for economy-wide GHG emissions in 2020 to be 20 percent below 2005 levels and 83 percent below 2005 levels by 2050. Similar to the EU ETS system, the bill puts in place a trading system for emissions allowances that will effectively price carbon in the economy and drive innovation toward a low-carbon economy. The cap-and-trade program seeks to reduce GHG emissions from covered sectors by 3 percent in 2012, 17 percent by 2020, 42 percent in 2030, and 83 percent by 2050 compared to 2005 levels.

The process of developing this bill revealed the depth of concerns in the United States about the economic impact of establishing a carbon price and over the harm it could cause energy-intensive and trade-exposed industries. Much of the debate centered on how to protect the consumer, existing industry groups, and the economy as a whole from a sudden increase in energy prices. Unlike discussions in the European Union, the U.S. debate is taking place during a time of low energy prices and concerns over economic recovery.

The method for allocating the emission allowances was a primary tool to contain costs in the implementation of the bill. Against the administration’s stated priority to auction all allowances, the bill gives away 85 percent of them to various groups. Another tool to help cushion the cost of the transition of the energy sector to low-carbon sources is the provision of generous amount of offsets to achieve the GHG targets. The bill provides that up to 1 billion tons of reductions can be gained through lowered emissions from domestic energy sources that are not covered by the bill—either emissions less than 25,000 tons per year CO<sub>2</sub> or in an uncovered sector. An additional 1 billion tons of offsets can be obtained by reducing emissions in foreign countries’ energy or forestry sectors. If domestic offsets are insufficient, an additional 500 million tons of international offsets can be used. These offset provisions are very important because in theory they afford the U.S. energy industry a less expensive way to reduce emissions when the cost of greater efficiency or moving to low-carbon sources of energy is still too high.

The offset portion of the bill is so generous that the 2020 emission target can be met completely through offsets rather than through reducing emissions in the energy sector (provided adequate offsets are available). The degree to which the energy industry will take advantage of offsets will depend on the cost and availability of offsets as well as the regulations that will be developed for their use. Depending on the stringency of offset qualifications and considering the historical rate at which offset projects have been processed in other offset markets, it is unlikely that there will be an adequate supply of domestic or international offsets to provide the upper limits of allowable offsets.

The Waxman-Markey bill contains several provisions designed to encourage the transition to low-carbon fuels. The bill includes a Renewable Electricity Standard that would require all utilities in the United States to have a growing percentage of renewable energy in their generation

mix. The target for the year 2020 is that 20 percent of their electricity generation come from renewable energy or energy efficiency by 2020. At least 15 percent of this total must come from renewable energy, with the remaining 5 percent coming from energy savings. The bill also calls for new national standards for buildings, which would be the first time the federal government has acted on national building standards.

Waxman-Markey also contains the first effort to establish national standards for CCS. Under the bill all new coal plants permitted after 2020 must use CCS, and plants permitted between 2015 and 2020 must adopt CCS by 2025. To further support CCS deployment, the bill provides for allowances to support firms that install CCS systems. The value of these allowances is estimated at \$60 billion through 2025, including about \$10 billion raised through a charge to electricity consumers. The bill provides for similar support to other clean energy sources and energy efficiency investment. The total investment through 2025 could exceed \$190 billion.<sup>8</sup>

The Waxman-Markey bill passed the House of Representatives by only seven votes. The compromises necessary to win passage caused many environmental observers to question the bill's effectiveness. In particular, the effort to reduce the cost impact for consumers weakens the price signals necessary to support meaningful energy efficiency investments. The heavy reliance on offsets also raises the risk that there will not be the kind of oversight needed to be certain that the offsets really reduce greenhouse gases. Most generally, the degree of compromise demonstrates that the political process does not believe that the American public is ready to accept significant near-term costs to avoid the longer-term and less clear costs of climate change.

The U.S. Senate released a draft bill on September 30, 2009, and passed it through the Environment and Public Works Committee on November 5. Only after passage of the Senate bill will the two houses of Congress meet to negotiate a compromise bill that can be signed into law. In the meantime, the Obama administration is positioned to regulate carbon dioxide through the Clean Air Act. The U.S. Environment Protection Agency officially declared dioxide a pollutant that endangers human health on December 7, 2009. The stated preference of the administration is for Congress to pass a cap-and-trade program, a much more onerous, costly, and controversial regulatory route that is widely viewed as a "stick" to encourage congressional action. Whether the Obama administration would back down from this approach if Congress fails to act is not clear.

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<sup>8</sup> This information is taken from a House of Representatives Committee on Energy and Commerce summary of the *American Energy and Security Act*. The estimates of the money available for clean energy and efficiency investments is based on Environmental Protection Agency (EPA) estimates of an allowance price of \$16 to \$21/ton CO<sub>2</sub> (2005 dollars).

# An Emerging Consensus for the Post-2012 Framework

For quite some time the international community was building up to the 15th Conference of Parties meeting in Copenhagen in December 2009 as an opportunity for moving forward to an international agreement on climate change. The European Union was perhaps at the forefront of encouraging other countries, particularly the United States, to engage early and often in ways that would facilitate success in these negotiations. In 2009, the new U.S. administration and Congress have been racing to get a domestic climate policy in place and have made significant strides in a short period of time. Many of the U.S. climate negotiators were also involved in the negotiations in the run-up to the Kyoto Protocol and remember its unanimous defeat in Congress as a key lesson of how not to proceed this time around. Thus the U.S. negotiating positions, while already formulated to a large extent, are constrained by progress on the domestic policy front. Nonetheless, the European Union and the United States are actively engaged in efforts to resolve some of the major issues—including the form of the agreement, emissions targets, financing, and technology—that will form the core of any new agreement in Copenhagen and beyond.

## A Sequel to Kyoto or New Agreement

A question to be resolved in the negotiations on an international climate agreement is whether a “post-Kyoto” framework should be attached to the Kyoto Protocol or be a new implementing agreement under the convention. Within the UN context, the negotiations are taking part on two parallel tracks—the Ad Hoc Working Group on the Kyoto Protocol and the Ad Hoc Working Group on Long-Term Cooperative Action. This structure is a product of the fact that the United States is not party to the Kyoto Protocol and does not have, therefore, an official negotiating capacity in the Kyoto Protocol discussions. While this may seem an arcane and insignificant negotiating detail, the form of the agreement is actually quite significant.

There is general agreement between the United States and European Union on the key elements and principles that will shape any post-2012 agreement: (1) a shared vision to reach the ultimate objective of the UN Framework Convention on Climate Change of stabilizing the concentration of GHG in the atmosphere, through binding medium- and long-term targets; (2) absolute emissions reduction commitments by developed countries; (3) fair and effective contributions or actions by developing countries supported by developed country financing and technology; (4) a mechanism for finance distribution that includes both public- and private-sector funds; (5) cooperation on technology research, development, diffusion, deployment, and transfer; (6) efforts to address adaptation including finance and technologies for adaptation; and (7) strong monitoring, review, and verification provisions. Other key areas of discussion are the significant emissions reductions that can be achieved by addressing emissions from deforestation and enhancing carbon sinks by sustainable forest management and land use practices, as well as emissions from international aviation and maritime transport. An important future question will be whether and how to incorporate both sources into the carbon market.

The United States proposes that the post-2012 agreement take the form of a new implementing agreement (not subject to the Kyoto Protocol) patterned after the framework put forward in the Bali Roadmap. Several developing countries prefer to amend the existing Kyoto Protocol in the hope of softening the restructured framework (particularly the increased expectations placed on rapidly emerging developing countries) proposed in the Bali Roadmap.

In order to move the negotiating process forward, the European Union and the United States appear to have finally developed a consistent approach to the questions of whether to work from the Kyoto Protocol in the negotiations or to develop a new framework. From the U.S. perspective, the Kyoto framework is not the relevant starting point for developing an international agreement that reflects current realities.

Recognizing this and the need for incorporating meaningful actions by emerging economies, the European Union is in favor of an essentially new agreement vehicle rather than an extension of the Kyoto Protocol. The form of the agreement is a very active and fluid part of the negotiations and a common EU/U.S. position on this issue is important to achieving workable outcome.

## **Emissions Reduction Targets and Trajectories**

One major area of contention in the negotiations is the question of emission reduction targets and trajectories. Rapidly emerging developing countries have begun to understand that they must constrain emissions at some point soon if the world is to meet any type of meaningful climate goal that would lower the risks of severe impacts from climatic changes. Developing countries, however, want to see aggressive medium- and long-term emissions reduction targets from developed countries before committing to any action. The European Union has put forth a target within the lower end of the range of what many developing countries require, while the United States' mid-term target is perceived by both Europeans and developing countries as too weak. This divide threatens to derail the negotiations and form a schism between the U.S. and EU negotiating positions.

In 2007, the Intergovernmental Panel on Climate Change released their most conclusive and thorough assessment of the pace and nature of climate changes, including an assessment of what actions are necessary to slow the pace of global climate change (mitigation) and to adapt or build resiliency to the unavoidable impacts (adaptation), what degree of temperature rise would yield what type of impacts, and what level of emissions reductions are necessary to bring about the greatest chances of not exceeding a given temperature rise.

There is no formal agreement to limit temperature rise to a specific level, but there is a broad consensus that limiting temperature rise to 2 degrees Celsius above pre-industrial levels is the most attractive outcome, assuming that level to be still possible. In order to reach and not exceed the 2 degree temperature rise target, the IPCC states that global emissions must be reduced between 50 and 80 percent from 1990 levels by 2050. To support this goal there is broad consensus that developed countries should reduce their GHG emissions in absolute terms.

Developed countries, recognizing the need to take a leadership role and assume the majority of emissions reductions, generally agree about the need to reduce their emissions by over 80 percent by 2050 compared to 1990 levels. Both the EU and U.S. targets achieve this goal. The Waxman-Markey bill foresees an 83 percent reduction by 2050 compared to 2005. The European Union's (political) target is 80 to 95 percent by 2050, compared to 1990.

More complicated is the 2020 target. The European Union advocates a 25 to 40 percent reduction target on aggregate for developed countries (in line with IPCC findings) and has proposed reducing its own emissions by 30 percent provided other developed countries accept equitable or—in EU language—comparable reductions. At first sight this does not compare well with the targets discussed in the United States: during and since his campaign, Obama pledged to reduce U.S. emissions by 14 percent from 2005 levels by 2020, which would translate roughly to a return of U.S. emissions to 1990 levels by 2020. The Waxman-Markey bill offers to cut emissions by 17 percent under the cap-and-trade program (a 20 percent economy-wide goal by 2020, again compared to 2005).<sup>9</sup> Against a 1990 base year, this would amount to about a 4 percent reduction. On a 2005 baseline, however, the U.S. reduction does not compare badly with the EU unilateral commitment, which constitutes around a 13 percent reduction or 24 percent reduction<sup>10</sup> (under the stated 20 percent and 30 percent targets noted above). The U.S. climate negotiators assert that comparability should not be measured on a 1990 baseline alone and that the U.S. and EU actions are comparable on a 2005 baseline, per capita basis, and in terms of the price estimates for reaching compliance.

The European Union certainly will want some recognition of its “early action,” which is most visible when measured along a 1990 baseline, as EU governments will need to explain this position to their stakeholders who start feeling the costs of climate change policy. Moreover it will most likely restrict the European Union’s ability to move to a 30 percent reduction target, which it has pledged to do if an international agreement is achieved. The U.S. climate negotiators’ view seems to be that it is more important to have robust yet realistic targets that will yield successful outcomes than overly ambitious aspirational targets that are unlikely to be met. If the initial targets prove easy to reach, then more ambitious targets and complementary policies can be introduced.

The perceived lack of ambition in developed country targets is an issue for developing countries, which have consistently argued that the proposed EU goal of 25 to 40 percent reductions by 2020 compared to 1990 is the minimum they consider as adequate. This view is predicated on the science that shows higher emissions in 2020 resulting from delayed action by Annex I countries reduces the ability to meet the 2 degrees Celsius warming limit and may even constrain it

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<sup>9</sup> Pew Center on Global Climate Change 2009, 41.

<sup>10</sup> Our calculations, based on the starting point of 7.9 percent reduction of EU-27 GHG emissions in 2005 compared to 1990 as in the inventory report submitted to the UNFCCC (European Environmental Agency 2007).

entirely.<sup>11</sup> Even if this can be seen as posturing ahead of negotiations, there is still a wide gap to close.

Though some parties to the negotiations still see a transatlantic gap on the level of ambition in the short and medium term, the gap has been closing quickly. While the EU target is closer to what science seems to suggest as the minimum needed to avoid dangerous climate change and what developing countries would expect from developed countries, there is little immediate prospect that the U.S. target will be significantly strengthened. This will require EU governments to explain why the European Union should pursue an ambitious target of its own, especially as an assumption. Yet, it is doubtful that EU policymakers and analysts could influence the U.S. political debate on such an issue. The Obama administration will not commit internationally beyond Congress' target to avoid the fate of the Kyoto Protocol that was never sent for ratification in Senate. Ultimately, the European Union will have no alternative to accepting the U.S. target if it wishes to maintain a common position relative to the developing countries. Divisions between the European Union and the United States would allow developing countries to play one side against the other and would most likely result in a triple effect: developing countries getting away with limited commitments, the European Union finding itself isolated among developed nations, and the United States giving in to domestic policies at the expense of international negotiations.

## **Financing Developing Country Actions**

Developing countries also insist that developed countries finance mitigation or adaptation activities they undertake. Cost estimates in the developing world vary widely. It is also unclear how much developed countries will be able to contribute in public-sector funds above and beyond traditional development assistance. At issue in the negotiations are the levels and types of financing and the mechanisms for managing and distributing funds. The United States has presented concrete proposals on the financing mechanism while the European Union has offered a certain level of financing through carbon markets and public finance. The United States is not likely to put forth any such number that would be legally binding until its climate legislation becomes law, but some sort of commitment will be required. Here too a common U.S.-EU position would advance the discussion.

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<sup>11</sup> Calculations show that if global emissions were to return to the level of 1990 by the year 2020, the chance that 2 degrees Celsius warming might be exceeded is estimated as roughly 1 in 6, which rises to 1 in 4, if global emissions are still 40 percent above 1990 in 2020. Delaying emission reductions by the Annex I group by 10 years, from 2020 to 2030, results in significantly higher cumulative greenhouse gas emissions and increases the rate of emission reduction in future decades. The probability of exceeding 2 degrees Celsius warming is increased by about 15 percent for such a delay, from a base probability for the two non-delay scenarios of 14 percent (6 to 32 percent) and 27 percent (14 to 48 percent), respectively. A delay thus results in an increased risk that is not compensated for by steeper reductions in later years (Hare, Schaeffer, and Meinshausen 2009).

The UN Framework Convention on Climate Change (Article 6) explicitly states that developed countries will “provide...financial resources, including transfer of technology” to cover the “agreed full incremental cost” of reducing emissions and adapting to climate changes. Developing countries have consistently supported this principle, though interpretations of how much financing developed countries must provide and how those funds should be provided vary. Developing countries tend to argue that developed countries should provide the full cost of mitigation and adaptation efforts and prefer that the funds be allocated through a new mechanism, likely under the United Nations, with developing country control. Developed countries, on the other hand, see the total amount of financing as a much smaller portion of the total cost of mitigation and adaptation. They also prefer for the funds to be distributed through existing channels of financial and development assistance such as the World Bank and the International Monetary Fund, where developed countries still hold much of the organizational control. Many developed countries have also suggested that global financing for climate change efforts should not only come from developed countries but from larger developing countries as well, to promote global buy-in for the fund and recognize the difference between rapidly emerging developing countries and lesser developed countries. Finally, developed countries have also suggested that the fund must have some accountability and transparency provisions, whereby recipient countries pledge to take action (either adaptation or mitigation related) and show proof of execution as part of qualifying for funds or continuing to receive future funds. Most developing countries reject this type of system and prefer a system whereby the fund exists outside these traditional development agencies and the requisite checks and balances and relies on an automatic payment from government coffers or surcharge on developed country emissions reduction revenues (like a tax on a cap-and-trade program).

The United States, joined by several other developed countries, made it clear that the funds provided to developing countries were unlikely to reach the 1 percent of GDP per year threshold advocated by some developing countries. Moreover, the vast majority of the funds would not come from public-sector financing but through private-sector investments facilitated by global carbon markets.

The United States and Europe share similar positions on global financing issues. The European Union has been able to go one step further than the United States in articulating an overall level of financing to developing countries (\$100 billion per year by 2020) necessary for net global incremental investment for mitigation and adaptation but has been unable to decide how much of that should come from the European Union (European Commission 2009b).<sup>12</sup>

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<sup>12</sup> The European Commission provided a blueprint on climate finance that was meant to support an ambitious Copenhagen deal and unblock the deadlock in international negotiations. The needed international contribution ranged between €22 billion to €50 billion per year, with the balance coming from two other sources: domestic public and private finance (20 to 40 percent) and flows leveraged by the international carbon market (European Commission 2009a, 3). These flows could potentially reach €38

Absent domestic action on climate legislation, the United States may not make concrete commitments on levels of financing. The European Union and the United States, however, agree on many of the core issues in the financing debate: public- and private-sector money must be included; the mechanism for delivering funds should be through existing financial institutions; funds could come from developed as well as some major developing economies; and the funding mechanism must have transparency and accountability measures.

These financing issues are vital to a successful outcome for a global agreement on emissions reduction targets and actions. Yet details will need to be settled only after agreement of U.S. legislation has been reached. Meanwhile, agreement about the types of financing that will count (UNFCCC, Climate Fund, bilateral, multilateral, private sector, etc.) and how those funds will be managed is possible. The European Union and the United States share a very similar position on the mechanism and sources of financing they should use to make progress toward agreement on a financing framework leaving the overall level of financing to be determined at a later date. Although developing countries have adopted a hard line thus far in the negotiations, the practical reality of the matter is that absent an agreement, there will be a less-consolidated approach to making funds available for mitigation or adaptation assistance.

## A Climate Technology Vision

Technology development and deployment is critical to achieving global climate goals and is, therefore, a key issue in climate change negotiations. While many of the emissions reduction goals can be reached with the widespread deployment of existing low-carbon and energy efficient technologies, technological advancement would reduce the cost and ease the transition to a low-carbon energy future. Within the context of the climate negotiations, technology issues are subject to the same developed/developing country tensions as emission reduction targets and financing. The European Union and the United States now share a common position on technology issues that can help solidify their negotiating stance: both recognize the need for wide-scale deployment of clean energy technologies around the world, but they also support efforts to protect intellectual property rights and encourage public- and private-sector mechanisms for new technology creation and policies for domestic deployment.

Issues of mitigation costs and technological advancement used to be at the core of the disagreement among the United States, the European Union, and much of the rest of the world during the Bush administration. U.S. policies during that period clearly favored investment in energy technology, in the hope of a technological breakthrough, over early and aggressive action

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billion per year in 2020, especially if facilitated by a new sectoral crediting mechanism. From 2013 on, the public finance burden is to be shared among both developed and advanced developing countries “on the basis of ability to pay and responsibility for emissions” (European Commission 2009a, 3). Initial international public financing of €5 billion to €7 billion per year in the period 2010 to 2012 would also be needed.

to reduce emissions using existing technologies. During these years, the United States worked with the European Union and many other countries to form international technology partnerships aimed at long-range goals on specific technologies like hydrogen, carbon sequestration, greater efficiency, and the next generation of nuclear reactors. The level of investment in energy technology research and development, however, fell well short of what is necessary to bring about real transformation.

The tide in the United States has shifted. The current administration views investment in clean energy and energy efficient technologies as one part of a much broader strategy to address climate change. There is also widespread recognition that investment in energy technology must increase significantly to achieve the necessary transformation. The Obama administration, the states, and much of the Congress also view technological advancement as the future of the U.S. economy. Early in 2009, the federal government invested unprecedented amounts of money to support energy technology investments as part of the American Recovery and Reinvestment Act (stimulus package).<sup>13</sup> The will to spend more money on technology, however, appears to be present in some parts of Congress as well. Pending climate legislation also includes substantial increases in funding for a variety of clean energy technologies and several provisions to encourage the deployment of energy technologies throughout the economy, including a cap-and-trade program, renewable energy standard, and efficiency mandates. Among proponents of effective domestic climate change policy there is widespread recognition that both the “push” of technology investment and the “pull” of market forces, government policies, and a price on carbon are necessary to advance technology goals.

The “EU vision” on technology has been slow to emerge, but it is now taking shape. It is recognized that technology plays a fundamental role in advancing efforts to address climate change on three fronts:

- accelerating the deployment of existing low-carbon technologies, both to bring down the costs of technologies and to reduce emissions, which requires more ambitious government policies;
- developing and deploying new breakthrough technologies for the longer term (beyond 2030), which requires stepping up the speed and scale of innovation; and,

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<sup>13</sup> These funds primarily went to the U.S. Departments of Energy and Treasury to support clean energy and energy efficiency research, development, demonstration, and deployment. The Department of Energy, through recent legislation and some of the current administration’s proposals, seeks to improve its innovative capacity by creating new frontier research centers, centers of excellence, and a home for cutting-edge/high-risk research (ARPA-E). The administration is also seeking to solidify increased levels of technology spending through the budget process. The Obama administration’s funding priorities for FY2010 pledged nearly \$14 billion for energy technology, research, and development, a significant increase over previous years.

- avoiding the lock-in of high-carbon technologies in developing countries (i.e., estimating the incremental costs of making future low-carbon energy investments in developing countries and emerging economies and paying for them, which requires dealing with equity issues and, among others, financial transfers.

Domestically, technology policy has been integrated into a climate and energy package that supports the rapid development and deployment of promising technologies such as CCS, biomass and biotechnology, and other renewable energy and end-use energy technologies or hydrogen systems. There is recognition that pricing strategies through cap and trade alone will not be sufficient to provide long-term incentives for all the breakthrough technology development and deployment needed for the stabilization of emissions. Most recently the European Union has started its own long-term technology mapping exercise through the EU Strategic Energy Technology Plan. Similar to the United States, domestic responses are regarded as the backbone of technology policy for addressing climate change. This opens the door for bilateral cooperation, which most likely will remain a major, if not the most important, pillar of technology and innovation policy. Internationally, the European Union and the United States are currently exploring existing international initiatives both within and outside the UNFCCC to identify possible key elements of a complementary global technology track in the post-2012 framework—including UNFCCC-based or related initiatives (e.g., Expert Group on Technology Transfers, Global Environmental Facility, or Clean Development Mechanism); non-UNFCCC-based initiatives (e.g., G-8, G-8+5, G-20, the International Energy Agency, the Asia-Pacific Partnership on Clean Development and Climate, the Major Economies Forum on Energy and Climate, or global sectoral industry approaches); the specific instruments of technology-based agreements; and finally, collaborative projects at the international or bilateral level.

The European Union and the United States agree to lead an effort to remove trade barriers to clean energy technologies through the World Trade Organization (WTO). Both are also actively engaged in encouraging developing countries to adopt policies that allow new technologies to take hold and flourish. These efforts are extremely important to resolve the technology issues within the international negotiation context and ensuring more rapid and widespread deployment of clean energy technologies.

## **Areas for More Common Action**

The European Union and the United States have staked out positions on many of the key issues to reaching a global climate agreement for the post-2012 period. The European Union is farther along when it comes to defining the specifics of those policies as its domestic climate policy is further developed. The United States, on the other hand, is somewhat constrained by the uncertain future of its own climate policies. Despite the delay in U.S. policy development and the differences of opinion on some issues between the United States and European Union, there are several areas where continued U.S.-EU cooperation can advance efforts to deal with climate change significantly. By focusing on areas of mutual interest, opportunity, and foresight, the

European Union and the United States can continue to move forward regardless of the outcome of the negotiations.

### **Creating a Global Carbon Market**

The European Union has for some time made emissions trading the centerpiece of its international negotiation strategy, as well as its domestic mitigation efforts. The United States has long been familiar with the cap-and-trade mechanism that underpins emissions trading (the United States first implemented this system to control sulfur dioxide emissions) and has one functioning emissions trading regime in the Northeast states. A functioning emissions trading system ensures least-cost abatement. The (market) price of carbon is equal to the lowest marginal abatement cost among all controlled sources, thereby ensuring that the environmental goal is met at least cost. At the same time, the resulting carbon price in emissions trading schemes provides an important carbon price signal for investors.

If properly designed, a cap-and-trade scheme will create incentives for companies to reduce emissions in the most cost-effective way, will reward carbon efficiency, and create incentives for new and innovative approaches to reduce emissions. The incentive for efficient abatement will arise from the “opportunity cost” of using allowances. Passing through the greenhouse gases costs in the form of an allowance price will create a consumer incentive to reduce the use of GHG-intensive goods. At the same time, it will increase producers’ cash flows to invest in abatement technologies. In a (theoretical) situation whereby all competitors are subject to similar carbon constraints and markets function properly, a cap-and-trade system is the most suitable tool to achieve climate change targets at the lowest possible cost. The price signal will be distorted, however, if GHG costs cannot be passed through domestically or globally. In this case, the market structure, especially price elasticity of demand, inhibits globally trading industries’ ability to pass through fully or even partially. As a result European, U.S., and global product prices will not reflect the opportunity costs of allowances and therefore the cost of carbon in domestic emissions trading schemes. Failure to pass through would erode benefits from GHG abatement, as well as producers’ competitiveness, transfer allowance value abroad, and ultimately lead to carbon leakage.

Hence, a laudable objective is to ensure that a similar carbon signal exists in as many key markets as possible. Such a price signal would feed through a broader portion of the global economy. There are a number of ways to establish a global carbon signal—each with its own difficulties.

The Kyoto Protocol sought to establish an intergovernmental emissions trading system. Industrialized governments accepted absolute emissions limits (i.e., caps) and were allowed to trade government-to-government in emissions rights. The Kyoto regime included absolute caps only for industrialized countries. The Kyoto emissions trading system for industrialized countries, combined with massive trade of CDM or other offsets, would create a global carbon price that would feed through the developing countries. In practice, however, the CDM has been hampered by such problems as high transaction costs, regional concentration of CDM credits, questionable

emissions benefits, and long lead times for project approval. There is no immediate prospect that developing countries would agree on absolute caps, or at least economy-wide legally binding GHG-intensity limits, the precondition for a global trading scheme based on the Kyoto Protocol model. Yet the CDM model, subject to reforms, is likely to continue to play an important role. The difficulty of establishing a Kyoto-style global price signal has led many to propose a more direct, economically efficient taxation route.

From a purely economic perspective, a straightforward step toward a global “level” pricing of carbon would be for the European Union and United States to impose an import tax on the content of CO<sub>2</sub> of all imported goods that do not have their own cap-and-trade system or equivalent measures. Such border measures can theoretically be made WTO compatible, and practical issues of how to calculate and levy such a tax can be overcome. Further analysis is needed, however, to assess comparability—that is, what “equivalent measures” mean (Gros et al. forthcoming). However, such an approach would cause major strains to the global trading regime and would be implemented only after careful analysis of political and economic implications.

The most likely outcome and useful place for eventual U.S.-EU cooperation is an incremental approach. A global or almost global carbon price could also emerge through linking of domestic emissions trading schemes such as the ones from the European Union, the United States, and/or Australia. Such formal linking, however, would require minimum harmonization between the linked schemes to avoid economic distortions between the economies. Linking means that the linked schemes would import design features from each other, such as price stabilization mechanisms or sector coverage (e.g., forestry, nuclear) or system effects.<sup>14</sup> Given that emissions trading design is a difficult balancing act of different national and local interests (Ellerman and Joskow 2008), it is hard to see how to achieve even minimum harmonization between the EU ETS and the emerging U.S. cap-and-trade program (Tuerk et al. 2009; Behr and Witte 2009). The recent discussions in the U.S. House and Senate, as well as the debate on the EU energy and climate package, witness this condition. Another more realistic option for a global carbon market to emerge in the near term may be for market participants to search for arbitrage possibilities between different carbon commodities. Such arbitrage is already happening as most national or regional climate change strategies—and notably emerging emissions trading schemes—foresee the use of project type of mechanisms either in the form of the Kyoto Protocol projects mechanisms or similar domestic projects such as those in the United States or Australia. As long as domestic or regional emissions trading schemes allow for the use of credits from projects, the possibility of arbitrage is ensured (see discussion on offsets, below).

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<sup>14</sup> Such a system effect is that in the European Union import gas and oil prices are linked. For example, during the oil price hike in 2007–2008, EU gas prices went up to such a degree that more coal was burned, pushing up allowance prices. No such connection exists in the United States, but the effect would feed through in the trading scheme.

It is unlikely that a global carbon market will emerge quickly, but its potential benefits cannot be ignored. The best option appears to be a surrogate linking through price convergence as a result of arbitrage made possible through offsets between different trading schemes. While the United States is still far from a national cap-and-trade program, discussions about how to link this market with other markets are already taking place and are even helping to shape legislation. It is extremely important that this area of study and engagement continue to evolve. As these systems link with one another their success or failure becomes intertwined. Given a growing skepticism over the proper functioning of financial and commodity markets, it will be essential that countries with emissions trading regimes think carefully about how to create stability, effectiveness, and transparency in what has the potential to be the largest commodity market in the world.

### **The Pivotal Role of International Offsets**

Both the United States and the European Union regard offsets as a useful though sometimes complicated tool for effective climate policy. Offsets reduce the cost of domestic emissions reduction by offering lower cost emissions reduction outside covered sectors or in non-covered economies. Offsets also allow for money from countries with robust climate policies to finance mitigation activities in developing countries (an important consideration for climate negotiations). All offsets, however, are not created equal, and inclusion of offsets brings with it a myriad of complicated policy issues. Under the climate policy being considered in the U.S. Congress and with current policies in the European Union, the United States and the European Union must work together to ensure the integrity and efficient functioning of all types of offset programs, including especially the Clean Development Mechanism (CDM).

One of the central features of the Kyoto Protocol was the creation of a CDM that alongside the Joint Implementation (JI) and International Emissions Trading of Assigned Amount Units (AAUs) would form the backbone of the international emissions trading regime. Such a system was considered essential to achieve cost effectiveness and ensure cooperation by the corporate sector. Since the Kyoto Protocol had set absolute caps, global emissions trading was an almost logical consequence not only to reduce total compliance costs, but also to ensure equal marginal abatement costs across parties. The CDM would be the principal tool for abatement options in the non-Annex I parties or developing countries.

As the result, the objectives of the CDM—as set by the Kyoto Protocol—are to help Annex I parties in meeting their emissions targets and to assist non-Annex I parties in achieving sustainable development and financing the reduction of emissions. In short, the CDM promises cost effectiveness for developed countries by reducing the marginal abatement costs, as well as money for developing countries to embark on a more sustainable economic development model. While these two objectives are the criteria against which the CDM should be judged first and foremost, it has also been hoped that the flexible mechanisms could trigger investment, speed up technology transfer, and ultimately help bring countries onto a lower carbon trajectory.

To date, the CDM is the only arrangement engaging developed and developing countries alike. More importantly, the CDM was instrumental in raising awareness about CO<sub>2</sub> and opening up a way for developing countries to enter into a carbon market, requiring only minimal domestic capacity and institutional set up. In addition, the CDM has attracted active participation of the private sector both from developed and developing countries.

The CDM has been widely criticized for its lack of delivering real and measurable reductions while providing “excessive” rents to host countries and project developers. Very often the “additionality” of projects has not been proven, meaning that the project would have happened even without the possibility to sell credits to the carbon market. At the same time, some project developers have managed to sell credits from extremely low-cost projects like hydrofluorocarbon (HFC) projects at manifold higher prices (e.g., in the EU ETS or through government procurement programs). The difference between the price for an EU allowance or government procurement and the extremely low abatement cost of some projects in developing countries has created economic rents for developers. Some of these same issues will plague all domestic and international offset programs.

There have been continuous efforts to improve or reform the CDM, in addition to creating new flexible mechanisms that better target subsets of its many objectives, such as leading to real reductions, enhance investment, and being built on a robust international institutional framework.<sup>15</sup> Even in its current form, the CDM invites simplification of baseline setting and potential extension of the scope (e.g., by adding eligible activities). In addition, new mechanism options are being discussed, like sectoral crediting and bilateral offset programs.

Yet, it remains difficult to see how offset mechanisms can disappear altogether. The CDM, despite its shortcomings, is the most developed mechanism and successful generator of international offsets to date. Developing countries strongly support the largest source of financing for clean energy and energy efficiency investment, which they view as a major contributor to sustainable development and adequate investment. Theoretically, the UNFCCC-based CDM could be replaced by domestically developed offset programs managed by individual countries, but developing countries are loath to move the mechanism outside UN jurisdiction. The continued success of offsets both inside and outside the CDM context depends on the perceived integrity of the offsets. The United States and the European Union have a common interest in building offset systems and programs that inspire investor and consumer confidence in the emissions reductions that come with offset purchases. Both also share the desire to see offset markets grow to include new and previously excluded types of offsets into the market. These two objectives require careful attention and execution and provide an area ripe for transatlantic cooperation.

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<sup>15</sup> Section (on CDM reforms and new flexible mechanisms) based on Noriko Fujiwara, *Flexible Mechanisms in Support of a New Climate Change Regime: The Clean Development Mechanism and Beyond*, CEPS Task Force Report (Brussels: Centre for European Policy Studies, November 2009).

## **Monitoring, Reporting, and Verification in Carbon Markets**

An effective and efficient compliance mechanism is the backbone for both an international climate regime and the carbon market. Only with a high level of compliance will emission trading systems achieve reductions in GHG emissions efficiently, effectively, and equitably, and create the necessary confidence and trust to create linkage in carbon markets.

However MRV and compliance systems are different in the European Union and the United States. Increased U.S.-EU cooperation will not only foster mutual trust, but it can also help develop best institutional, legal, and technological practices (Kruger and Egenhofer 2006). Ultimately, there may be additional variations on these models as other countries begin to adopt domestic emissions trading schemes, thus possibly leading to a global best practice, which in return could influence other national schemes and help the convergence of national compliance elements and the creation of a “common currency.”<sup>16</sup>

Further dialogue will be needed between U.S. and EU experts to permit a better understanding of the unique features of the respective models and how these can be used to improve national or global practice. A first step would be to understand the extent to which different approaches might lead to different results. For example, would reported emissions from an installation differ if different national methodologies were applied? A second consideration would be to identify the MRV issues that arise when different national trading programs are linked. Due to a high level of decentralization, the first years of EU ETS implementation served to an extent as a laboratory for understanding these linkages. MRV is the basis for confidence underlying carbon markets and emissions reduction activities. Developing closer ties on MRV processes serves the interests of both the United States and the European Union.

## **Forestry**

Forest projects can play an important role in fighting climate change. Sustainable forest practices can mitigate the effects of climate change by helping to capture CO<sub>2</sub>. Deforestation is one of the leading causes of GHG increases, representing one-fifth of the world’s total emissions. Conversely, tropical rainforests are so diverse that they can store up to 200 tons of CO<sub>2</sub> per acre. In addition, sustainable old growth forests help shape stable, healthy ecosystems that are less susceptible to forest fires and are essential for biodiversity preservation. Thus, focusing on forests will be a critical part of addressing climate change.

Reducing Emissions from Deforestation in Developing Countries (REDD) was the first forestry program developed to fight climate change. The theory behind REDD is similar to that of Clean

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<sup>16</sup> Things are already happening. The International Carbon Action Partnership (ICAP) has commissioned a report on national and global MRV issues to which both EU and U.S. officials provide input. ICAP is a forum to share experience and knowledge to help establish a well functioning global cap-and-trade carbon market. It is made up of countries and regions that already have introduced or are pursuing mandatory cap-and-trade systems. See <http://www.icapcarbonaction.com>.

Development Mechanism, and REDD projects create carbon credits comparable to Certified Emissions Reduction (CERs). Developed countries can buy forest carbon credits from developing countries to help meet their emission targets, because it is generally cheaper to help reverse deforestation than to reduce emissions internally. REDD projects involve preserving forests in areas where the forest would be destroyed in a business-as-usual situation. Carbon credits are awarded based on whether deforestation is halted beyond historical averages. Deforestation is intertwined with more complex global problems, so the REDD programs also aim to support developing countries as they improve their governance systems and create economic and social programs that combat harmful land-use change. REDD projects are financed by the World Bank and contributions to grant programs by developed countries. While REDD faces numerous and complex problems (baseline, monitoring and verification system, comprehensive national forest policy, sovereignty issues), 37 developing countries in Asia, Central and South America, and Africa have been selected to be REDD participants and are being prepared to fully implement REDD programs by 2012.

International forestry programs play a vital role in the legislation that recently passed the U.S. House of Representatives. The bill allows for up to 1.5 billion tons of international carbon offsets per year, and the Environmental Protection Agency (EPA) predicts that 60 to 80 percent of these will be provided by the forestry sector. The EPA also predicts that forestry offsets could reduce the price of the cap-and-trade allowances by half by creating cheap, cost-effective emissions reductions.

Forestry offsets are included in two distinct provisions of the bill. First, the legislation mandates that 5 percent of the pollution allowances be set aside to fund forestry programs.<sup>17</sup> The bill also provides incentives for private firms to invest in forestry offsets to receive carbon reduction credits. The legislation sets up a detailed framework of requirements but may be amended in the U.S. Senate as the program has many questionable characteristics, such as the capacity to carry out effective program oversight, the permanence of offsets created from forestry,<sup>18</sup> concerns over additionality and leakage, the ability to create a functioning program in the two-year timeframe proposed in legislation, and questions of how forest credits will affect the overall carbon credit market.

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<sup>17</sup> Called “set-aside” funding, the percent dedicated to forestry decreases to 3 percent between 2026 and 2030 and to 2 percent between 2031 and 2050. The legislation mandates that the set-aside money be used to buy at least 720 million tons of carbon reductions from 2025 and 6 billion tons overall, and the administrator must increase the set-aside percentage allotted to forestry if these targets are not met. The reductions incurred from the set-aside funding exist on top of the mandatory pollution cap.

<sup>18</sup> Forest offsets are particularly controversial because forests can be accidentally destroyed, releasing all of the sequestered carbon. Inadvertent forest destruction and carbon release, such as in forest fires, are called “toxic offsets.” Because forestry offsets represent such a large portion of carbon reduction, the release of sequestered carbon could potentially undermine the entire cap-and-trade reduction scheme.

Although the forestry sector was included in the Kyoto Clean Development Mechanism, only one of the thousand registered reforestation projects has been approved as a CDM. That is because the European Union does not allow carbon credits from forestry projects in their trading scheme. There has been some worry that a massive inflow of forestry credits could deflate the ETS price, thereby undermining incentives for low-carbon investment in the European Union and notably the power sector. Today's maximum potential global supply stands at five to six Gt CO<sub>2</sub> (around 20 percent of global CO<sub>2</sub> emissions). More specific estimates include predictions that in 2025 measures costing less than \$6, \$14, and \$27 per ton CO<sub>2e</sub> could sequester a total of 44, 98, and 137 Gt CO<sub>2e</sub>, respectively (Sohngen 2005).

The review of the EU ETS directive has initiated a new debate on forestry. Besides risks of price collapse in the ETS and worries about too much offsetting compared to purely domestic reductions, the liability problems related to nonpermanence of credits (similar to the CDM) and the future linking of trading systems have surfaced. As a result, the revised ETS directive (2009/29/EC) still does not include the potential use of REDD credits projects by EU companies.

Avoiding deforestation is, however, incentivized in the ETS directive by listing it among the activities for which at least 50 percent of the allowance auction proceeds in member states should be used (Article 10). This sends an important message that the European Union is serious about tackling emissions from deforestation as stated in its earlier climate change strategy (European Commission 2007b). An important element has been keeping the door open without prejudging international negotiations on the issue by firm commitments in either direction. To this effect, the directive states that a new assessment is to be made after the conclusion of an international agreement, especially if a new internationally recognized system for REDD has been established (Article 28).

Forests must be taken into consideration to meet any reasonable global emissions reduction targets. The United States, European Union, and the developing world all have an interest in overcoming the challenges to incorporating forest practices in mitigation policies.

### **Competitiveness: Looking beyond the Short Term**

Both the European Union and the United States have dealt extensively with issues of competitiveness within the context of domestic policy formulation as well as international negotiations. Scholars on both sides of the Atlantic have spent considerable time outlining common ground on the competitiveness concerns that threaten to derail domestic policy effort and climate negotiations as well as disrupt the global trade regime. At the same time, new notions of competitiveness can add a potentially positive dynamic to the debate. Both concepts of competitiveness offer key areas for U.S.-EU cooperation.

- *Competitive Disadvantage:* Climate change competitiveness concerns most often refer to the competitive disadvantage some companies experience when carbon control or emissions reduction policies are instituted in some countries and not others. Under these circumstances, companies subject to tighter carbon constraints bear higher production costs than their global

competitors. This uneven playing field not only hurts the competitiveness of particular industries, causing economic and political concerns for the countries with relatively aggressive climate policies, but it can also lead to a problem known as carbon leakage, where industries leave countries with carbon constraints in favor of countries with less onerous environmental regulations. Carbon leakage undermines the environmental or emissions reduction goals of climate policies. Both the European Union and the United States have experienced political pressure from constituents concerned about competitiveness and carbon leakage.

Numerous studies have dealt with the question on whether the EU ETS could actually lead to an increase in global GHG emissions due to carbon leakage.<sup>19</sup> Over these discussions, there has been an emerging EU consensus that a number of sectors could claim a risk of carbon leakage (as a combination of CO<sub>2</sub> being a significant factor in variable costs and being subject to international competition). The new EU ETS directive has further defined “carbon leakage” to avoid ambiguity. It mandates the European Commission to draw up a list of sectors “significantly exposed to carbon leakage” by the end of 2009. In essence, the directive has identified a hierarchy of three possible measures: first, free allocation until a global agreement with global carbon pricing is agreed; next, free allocation could also be abolished if so-called global sectoral agreement in sectors subject carbon leakage can be agreed; and if this does not suffice, there is a possibility to implement border measures like the imposition of carbon costs on importers.

The United States, on the other hand, has no official position yet on the issue of competitiveness and carbon leakage under existing law. Nonetheless, competitiveness concerns are a major part of the climate debate in Congress. The pending U.S. legislation provides free allowance to energy-intensive and trade-exposed industries from competitive disadvantage brought on by a lack of comparable carbon constraints in other countries. The bill also seeks to determine when and if carbon leakage has taken place and protects affected industries by instituting a border tariff adjustment. The Obama administration and several leading trade groups have expressed their concern that these types of border tariffs could be enormously disruptive to global trade flows and possibly cause a protracted trade war. Nonetheless, it is difficult to see how a climate bill could pass in Congress without competitiveness provisions given the number of legislators who represent communities that rely on energy-intensive industries.

Free allocation of allowances in effect amounts to a subsidy, thereby undermining the ETS’s objective to pass through full carbon costs. It could, however, be justified by the fact that carbon prices are distorted already because costs for GHG emissions cannot be passed through globally. In this case, the market structure, especially price elasticity of demand,

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<sup>19</sup> See, for example, Carbon Trust 2004; Reinaud 2005 and 2008; McKinsey and Ecofys 2006; Hourcade et al. 2007; Matthes and Neuhoff 2007.

inhibits globally trading industries' ability to pass through their additional costs in full or even partially. Firms that cannot pass through the allowance price partly or fully end up "paying" for the allowance price, reducing producers' competitiveness and transfer allowance value abroad.

Free allocation, however, allows only for compensation of direct effects—costs arising due to the fact that emissions need to be covered by an allowance. It does not address the vulnerabilities of those sectors that result from indirect effects—through higher input costs, notably higher power prices as a result of the ETS. In the European Union, therefore, member states have been given the possibility to provide financial compensation to sectors on the European Commission's lists. Currently the commission is adapting EC state aid guidelines to allow for this.

- *From Competitiveness Concerns to New Opportunities:* Both the United States and the European Union are grappling with competing notions about competitiveness. As discussed above, companies and policymakers are concerned about the adverse impacts that climate policy will have on near-term economic growth and competitiveness vis-à-vis other companies and countries. The larger question of competitiveness, however, deals with the strategic advantage to be realized by the creation of a low-carbon economy. Both the European Union and the United States have, to some extent, incorporated the latter notion into their domestic climate debate. While the argument has gained traction in the European Union, the United States remains split over whether the opportunities will outweigh the costs.

Once the need to address climate change is accepted, there is a possibility to reframe the climate change debate from a "cost" to a "benefit" perspective. In the European Union and possibly beyond, this has been the achievement of the 2006 Stern Review on the economics of climate change, which argued that the costs of inaction largely exceeds the costs of action. It then went through the costs and benefits of mitigation and adaptation measures. The European Commission press release on the occasion of the publication of the legislative proposal of January 23, 2008—later to become the climate and energy package—entitled "Boosting growth and jobs by meeting our climate change commitments" (European Commission 2008c) started off with the assumption that the proposed—and later implemented—targets "provide a unique business opportunity for thousands of European companies."<sup>20</sup> The analytical underpinning has been provided by the Integrated Impact Assessment accompanying the Package (European Commission 2008a and 2008b).

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<sup>20</sup> EC president José Manuel Barroso stressed the need to "provide the right policy framework for transformation to an environment friendly European economy and to continue to lead the international action to protect" the planet. The package was presented as not only responding to the climate change challenge, but to tackle "energy security and...[as] an opportunity that should create thousands of new businesses and millions of jobs in Europe." Stavros Dimas, EC commissioner for environment, argued that

Climate change and clean energy have figured more prominently and earlier in the European Union's industrial strategy. In 2007, the European Commission's mid-term review of industrial policy concluded that EU industry is well placed to respond to competitiveness, technological, and climate challenges and turn these into an opportunity. According to this document, Europe's environmental industries are at the global forefront of technologies generating a turnover of approximately 2.2 percent of EU GDP and employing 3.4 million people. EU industrial policy has focused on incentives to unlock the full potential of low-carbon and resource-efficient goods, technologies, and services in the European Union. At the same time, the strategy does not ignore "competitiveness" and considers a number of instruments including border measures. One much cited success story is Denmark, which has used policies to build up one of the biggest renewable energy sectors in the world, currently comprising 15 percent of the total energy supply: Denmark has the lowest energy intensity in the European Union, the result of a concerted effort that includes stringent building and appliance codes, public service campaigns on energy use, a public sector that sets an efficiency example, extensive combined heat and power generation, high taxes on energy consumption and negotiated agreements on energy savings with industry (Murphy et al. 2008, 23–24). The general strategy advocated in 2007 has been reinforced since by the various recovery packages of the European Union and its member states.

The Obama administration included development of a low-carbon economy as one of the three main policy priorities and pillars of the future U.S. economy. Investing in clean energy infrastructure and technology was also a large portion of the stimulus package, the largest single increase in clean energy investment in history.<sup>21</sup> The House climate bill includes programs and incentives to retrain workers and encourage green job growth. At the state and local levels, green jobs and new, clean-technology business ventures are being promoted and heralded as a sign of the new economy. The national debate on climate legislation, however, still shows much skepticism that these new opportunities will yield "net" economic growth and "net" job creation. Thus, during the House debate, concern over losing jobs and competitive advantage to China was one of the prevailing themes of the opposition—even though, ironically, China is likely to out-compete the United States in new clean energy ventures if Washington fails to make clean energy development a priority.

In order to maintain momentum toward the transition to a new clean energy economy it will be important for the United States and the European Union to provide evidence of these opportunities and continue to rebut the idea that they are at a competitive disadvantage. This type of economic transition is unprecedented in scope, pace, and scale, but success is critical.

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the package "gives Europe a head start in the race to create a low-carbon global economy that will unleash a wave of innovation and create new jobs in clean technologies." See European Commission 2008c.

<sup>21</sup> The White House, "Remarks by the President Challenging Americans to Lead the Global Economy in Clean Energy," <http://www.whitehouse.gov/the-press-office/remarks-president-challenging-americans-lead-global-economy-clean-energy>.

The European Union and the United States should work together to continue the momentum and success of these developments.

## Summary

Climate change was possibly the area where disagreement between the United States and the European Union was most pronounced during the administration of President George W. Bush. With the Obama administration, the two sides of the Atlantic have begun finding common ground on climate change. In fact, while the U.S.-EU gulf had previously been widest on matters of climate change, this is now the area where a rapprochement between the United States and Europe is taking place most quickly. Nevertheless, the political economies of both the European Union and United States remain markedly different and areas of tension still exist, mostly spurred by the fact that the European Union is farther along in building a domestic consensus and policies than the United States.

A joint transatlantic climate change agenda, if not partnership, is important for reaching and implementing a global agreement. Admittedly a transatlantic partnership will not be sufficient to achieve an international agreement with the increasingly influential emerging economies. Yet it remains an important driver if any such agreement is going to be concluded under the best and most favorable conditions.

This, however, makes the European Union (and Japan and other OECD countries that might reinforce the partnership) dependent on progress within the United States. While the European Union and EU stakeholders might be able to influence the United States and its domestic discussions on the margins, they will have limited influence on the direction or the speed of U.S. consensus-building efforts in Congress. On the other hand, breaking ranks would mean that the current Annex I or at least OECD country bloc would be weakened, and the chances of reaching consensus diminished.

This paper has analyzed areas critical to the international negotiations. There are many areas where a consensus is gradually emerging, a consensus that over time will be conducive to deeper cooperation. These areas include the institutional framework, short- and medium-term targets, financing of developing country actions, and the framework for global technology cooperation.

This paper has also identified and addressed several areas of common interest and possible cooperation on such issues as: linking carbon markets; the pivotal role of international offsets and the nature and scope of additional flexible mechanisms; forestry and REDD; competitiveness issues, including “green growth”; and common compliance rules in the global carbon market.

However, there are no key areas where the European Union and the United States can make major or near-term breakthroughs on the negotiations or on the transition to a secure, low-carbon economy. Thus, the foundation of a transatlantic partnership on climate change is a need for persistence. Cooperation should be focused on ensuring each other’s mutual success in implementing domestic climate programs, keeping momentum behind the bottom-up emergence

of climate policies in other countries, working together on areas of common interest especially when it comes to improving or putting in place new programs that serve the global interest, and most of all, continuing to make progress on the international climate negotiations by not allowing the perfect to be the enemy of the good and finding incremental ways toward a more comprehensive agreement.

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