

PROMOTING ENERGY SECURITY AND TACKLING CLIMATE CHANGE: MISSED OPPORTUNITIES AT THE CARTAGENA SUMMIT

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Executive Summary

- Even though the greenhouse gas emissions of Latin America and the Caribbean represent a small share of the global level, the region will be severely impacted by climate change.
- Some areas of Latin America are expected to experience severe water stress, which will affect the water supply and hydroelectric power generation. These challenges could lead to much greater reliance on fossil fuels than is currently the case. At the same time, with over one-quarter of the world's fresh water supplies, South America can comfortably expand its already high electrical generating capacity through hydropower.
- The establishment of the Energy and Climate Partnership of the Americas (ECPA) was a positive step forward in getting the region to act in concert on the issue of energy and climate change, but deserves greater attention and resources from the United States.
- The inability to establish a consensus on the role played by private investors in the energy sector was evident at the Sixth Summit of the Americas in Cartagena and continues to be a challenge for the region. The nationalization of energy companies, the latest case being YPF in Argentina, damages initiatives promoting private-sector participation in the integration of regional energy markets.
- When it comes to climate change issues, the United States lacks credibility, as it never ratified the Kyoto Protocol and thereby chose not to legally bind itself to reduce greenhouse gas emissions. In addition, a highly polarized political climate in the United States has led to a paralysis that prevents passage of federal climate change

legislation which would, among other things, establish a carbon emissions trading scheme at the national level.

- In the absence of federal climate change legislation, the U.S. State Department should encourage states such as California and those in the Regional Greenhouse Gas Initiative to enter into carbon offset agreements. This move would replicate the current U.N.- administered Clean Development Mechanism on a bilateral basis with interested foreign countries and subdivisions throughout the Western Hemisphere.

The Context

One of the most pressing issues affecting the future of countries in the Western Hemisphere is securing reliable and affordable energy resources that do not contribute to climate change or further degrade the environment. A report issued by the United Nations Commission for Latin America and the Caribbean (ECLAC) in December 2009 noted that while the greenhouse gas emissions of Latin America and the Caribbean represent a small share of the global level, the region will be severely impacted by climate change.¹ Furthermore, some areas of Latin America are expected to experience severe water stress, which will affect the water supply and hydroelectric power generation. This could lead to much greater reliance on fossil fuels than is currently the case. In general, the anticipated rise in sea levels due to melting polar ice will increase the number of people displaced and the land lost due to permanent flooding. Small Caribbean island states will be especially impacted. Climate change will also translate into significant and often irreversible losses in biodiversity, which is particularly serious in a region that encompasses several of the most bio-diverse countries in the world.

Energy has been on the agenda of almost every Summit of the Americas going back to Miami in 1994. Participants at the first summit proposed a Partnership for Sustainable Energy Use that sought to promote sustainable economic growth by means of the following projects:

- Facilitate financing by the multilateral lending agencies in energy projects—particularly those related to enhancing efficiency and developing non-conventional renewable energy resources
- Enhance the use of efficient and non-polluting energy technologies, both conventional and renewable
- Encourage market-oriented pricing to discourage wasteful energy use
- Promote, in cooperation with the private sector and isolated communities, rural electrification projects (including ones that, where appropriate, utilize renewable energy resources)

Although the Partnership for Sustainable Energy Use soon fell by the wayside, energy was a major topic of discussion at the Special Summit of the Americas on Sustainable Development held in Santa Cruz, Bolivia in 1996. There, a Hemispheric Energy Steering Committee was created to coordinate efforts in the following areas:

- Increasing investment in the energy sector
- Promoting cleaner energy technologies in electrical power markets
- Advancing regulatory cooperation and training
- Increasing the economic and environmental sustainability of the petroleum sector
- Creating new opportunities for natural gas
- Promoting energy efficiency

These same goals were also objectives of the Hemispheric Energy Initiative launched at the Second Summit of the Americas in Santiago, Chile in 1998. The initiative was mentioned at the Third Summit of the Americas in Quebec City in 2001, in the context of promoting policies and practices to advance the regional integration of energy markets. But by the time of the Fourth Summit of the Americas in

Mar de Plata, Argentina in 2005, the Hemispheric Energy Initiative had faded into oblivion, following the pattern of its predecessor, the Partnership for Sustainable Energy Use.

Given the importance of the hydrocarbons sector to the Trinidadian economy, and Trinidad and Tobago's role at the time as the most important source of imported liquid natural gas (LNG) in the Caribbean, it is not surprising that energy security was a central theme of the Fifth Summit of the Americas held in Port of Spain in 2009. The by-now-familiar pledges to promote cleaner, more affordable and sustainable energy systems and to foster energy efficiency and conservation were reiterated. Also apparent at the Trinidad Summit was the resurgence of resource nationalism in many Latin American countries, as well as a collapse of the market-oriented economic consensus that had previously marked meetings of Western Hemisphere heads of state during the 1990s.

The declaration issued at the close of the Trinidad Summit, for example, “reaffirm[ed] the sovereign right of each country to the conservation, development and sustainable use of its energy resources.” Another pledge—to encourage the sustainable development, production, and use of both current and next generation biofuels—elicited a lengthy footnote from the government of Bolivia that proposed “an alternative vision based on living well and in harmony with nature, developing public policies aimed to promote safe, alternative energies that guarantee the preservation of our planet, our “Mother Earth.”² Interestingly, the leaders gathered in Port of Spain broached the usually controversial subject of expanding use of nuclear energy and proposed interconnecting regional energy networks. Commitments were also made:

“to improve and enhance the collection and reporting of market data on oil and other energy sources in all countries to ensure smooth functioning of energy markets at the regional and global levels” as well as “to support the development and implementation of voluntary corporate social responsibility best practices in the energy sector.”³

While not as prominent on the hemispheric agenda as energy, past Summits of the Americas had raised the climate change issue, albeit under the broader environmental umbrella. For example, at the first summit in Miami in 1994,

the governments of the Western Hemisphere pledged to ratify and begin implementing the provisions of the U.N. Framework Convention on Climate Change, which had entered into force earlier that same year. A similar pledge was repeated in Santiago in 1998, as was another pledge urging ratification of the Kyoto Protocol (something which the United States, alone among all the countries in the Americas, never did). At the Third Summit of the Americas held in Quebec City in 2001, the 34 heads of state agreed on the following:

“to address the issue of climate change as a priority of action, working constructively through international processes in order to make necessary progress to ensure a sound and effective response to climate change; recognize the vulnerabilities in all our countries, in particular of Small Developing States and low lying coastal states, and the need to support the conduct of vulnerability assessments, the development and implementation of adaptation strategies, capacity building and technology transfer.”⁴

Eight years later in Port of Spain, all the assembled heads of state acknowledged the need to make deep cuts in greenhouse gas emissions “on the basis of equity, and in accordance with our common but differentiated responsibilities and respective capabilities.”⁵

The Energy and Climate Partnership of the Americas

Based on the prominent focus given to energy and sustainability issues at the Fifth Summit of the Americas in Port of Spain in 2009, it is not surprising that the United States proposed establishing an Energy and Climate Partnership of the Americas (ECPA).⁶ Unlike hemispheric projects of the past, where the U.S. delegation often dictated the agenda and expected other governments to follow, the Obama administration emphasized that ECPA was “voluntary, allowing governments, inter-American organizations, private industry, and civil society to lead or participate in initiatives that reflect their priorities.”⁷ Governments would be encouraged to work jointly or on their own to lead initiatives, finance activities, and create welcoming policy environments that encourage low carbon development. Countries would also be free to identify areas where they can contribute, need assistance, or might collaborate.

Interestingly, then-Senator Barack Hussein Obama, in the sole policy address he gave on Latin America and the Caribbean in May 2008 while campaigning for the presidency, proposed something similar to ECPA. Although that speech, given in Miami, focused heavily on U.S. relations with Cuba, Obama included a proposal to create an “Energy Partnership *for* the Americas.” Obama stated that, if elected, his administration would allow industrial emitters of greenhouse gases in the United States to offset a portion of their emissions by investing in low carbon energy projects in Latin America and the Caribbean. He also pledged to increase research and development of clean coal technology as well as the next generation of sustainable bio-fuels not taken from food crops, and to expand the use of wind, solar and nuclear energy throughout the Western Hemisphere. By the time of the Trinidad Summit, the word “for” had been substituted with “of,” to downplay any suggestion of the United States having a dominant leadership role. The change in terminology was consistent with the message that the Obama administration wished to project at the 2009 summit, namely that the United States was meeting with partners on an equal level and that “[t]here is no senior partner and junior partner in our relations; there is simply engagement based on mutual respect and common interests and shared values.”⁸

The proposal for an ECPA made at the Fifth Summit of the Americas in Port of Spain was followed by a meeting of some of the Latin American energy ministers in Lima in June of 2009, where a bilateral Peru-U.S. agreement was signed to establish a Regional Energy Efficiency Center. At the same time, the Mexican representatives agreed to fund a Regional Wind Center based in Oaxaca. Also, the U.S. delegation proposed a “Low Carbon Communities Program” through which the U.S. Department of Energy would “partner with countries in the region to provide technical assistance and limited funding to develop building standards and adopt modern urban planning strategies including transit-oriented development to achieve low carbon communities.”⁹

In the months following the June 2009 Lima meeting, additional proposals were added to ECPA, including the establishment of three important new institutions:

- an Energy Efficiency Training Center in Costa Rica (in conjunction with the Natural Resources Defense Council),
- a Biomass Center in Brazil, and
- a Geothermal Center in El Salvador that would receive financial support from the Inter-American Development Bank (IDB) and the U.S. Department of Energy.¹⁰

The first Energy and Climate Ministerial of the Americas, held in Washington, D.C. on April 15-16, 2010, was attended by representatives from 32 of the 35 governments in the Western Hemisphere. At this ministerial, the U.S. delegation announced that ECPA is premised on at least seven pillars (Secretary of State Clinton proposed adding the last two at the ministerial itself):

1. **Energy Efficiency** to promote best policy practices through assistance in developing building codes and other standards in the industrial and residential sectors, as well as training for energy audits.
2. **Renewable Energy** to accelerate clean energy deployment via project support, policy dialogues, scientific collaboration, and the clean energy technology network.
3. **Cleaner and More Efficient Use of Fossil Fuels** to promote clean energy technologies to reduce both conventional pollution and the carbon footprint of fossil fuels, as well as best practices on land use management.
4. **Energy Infrastructure** to foster modernized, integrated, and more resilient energy infrastructure, particularly electrical grids and gas pipelines.
5. **Energy Poverty** to target urban and rural energy poverty with strategies to promote sustainable urban development and improve access to modern clean energy services and appropriate technologies in rural areas that can improve public health and reduce fuel wood use that benefits forest management.
6. **Sustainable Forestry and Land Use** to reduce emissions from deforestation and forest degradation, and enhance carbon sequestration in the land use sector, including through the conservation and sustainable management of forests.

7. **Adaptation Assistance** to developing countries impacted by climate change.

At the 2010 Ministerial, the U.S. Department of Energy announced that it would be providing technical support, including hosting a workshop, to explore the potential for building a Caribbean-wide system using submarine sea cables to transmit electricity generated from renewable energy sources. The Energy Department also signed an agreement with the IDB to create an Energy Innovation Center to allow both entities to coordinate resources to facilitate regional projects and activities. The Center was expected to serve as a focal point for accessing the Bank's annual energy financing pipeline with an initial \$1.5 billion in capital for lending purposes.¹¹ In addition, the Energy Department announced a partnership between the National Renewable Energy Laboratory (NREL) in Golden, Colorado with scientists and technology experts in Colombia to help identify, evaluate, and promote technologies for sustainable biomass use in that country.

At the same meeting, the State Department released the names of three U.S. scientists who would serve as senior ECPA fellows and travel to countries throughout the Western Hemisphere providing advice, sharing experiences, and consulting with regional counterparts on clean energy, sustainable landscapes, and adaptation to climate change.¹² It was also announced that the U.S. Department of Agriculture would serve as the lead agency to coordinate U.S. government technical assistance to countries interested in sharing information to expand production and usage of sustainable biomass energy.

Since the April 2010 ECPA Ministerial, Canada has led a working group on heavy oil, but with representation from Brazil, Colombia, Mexico, the United States, and Venezuela. This group was formed to facilitate the exchange of information on best practices and technological innovation so as to reduce the environmental footprint of heavy crude extraction and development.

Among ECPA projects, Mexico leads a working group on energy efficiency that includes all of the countries of the Western Hemisphere and shares best practices and experiences to develop regional partnerships that promote efficiency and conservation.

Brazil, in turn, leads an initiative focused on building environmentally sustainable low-income housing across Latin America and the Caribbean and reducing greenhouse gas emissions from solid waste. The American Planning Association provides technical assistance for the Brazilian housing initiative, with limited funding from the State Department.

Chile has aggressively used ECPA to address energy-related matters affecting the country and its neighbors. For example, Chile hosts a regional Renewable Energy Center that receives technical assistance from the U.S. Department of Energy and has an open-access web site portal called “Open Energy Info” to facilitate the regional exchange of information on renewable energy resources. Chile also participates, along with Argentina, Colombia, Peru, the United States, and Uruguay, in an ECPA shale gas initiative that exchanges information on how to safely exploit shale gas reserves and minimize negative environmental impacts. In addition, Chile has joined Colombia, Ecuador, Panama, Peru, and the United States in exploring ways to interconnect all the national electric grids from Panama to Chile, beginning with harmonizing their respective regulatory frameworks. The Union of South American Nations (UNASUR) is also pursuing a similar project, although Bolivia substitutes for Panama in that continental initiative.

Other ECPA projects include U.S.-based electric generator Southern Company working with a Colombian non-governmental organization to train disadvantaged secondary students for future careers in the energy sector. The U.S. Department of Energy is working with the Ecuadorean Ministry of Coordination of Production, Employment and Competitiveness in turning residues generated by industrial processes into valuable commodities or inputs.

For its part, the Organization of American States (OAS) oversees implementation of the Caribbean Sustainable Energy Program (CSEP) funded primarily by the European Union, with some contributions from the U.S. Department of Energy, to enable the tiny island nations of the Eastern Caribbean and the Bahamas to increase the sustainability of their energy supplies while reducing carbon emissions through the development and use of renewable energy and energy efficiency systems. The OAS also oversees implementation of a Caribbean-wide program funded by the Energy Department to facilitate regional dialogue on

long-term sustainable energy solutions, and to help national governments promote and implement sustainable energy policies and programs through short-term legal counseling and technical assistance. Overall, the OAS has emerged as a central clearinghouse for disseminating information on ECPA initiatives and bringing together potential public and private sector partners.

Finally, the U.S. Peace Corps has an ECPA initiative that supports energy-efficient practices and the use of alternative energy technologies, including small-scale home or school solar solutions, cook stoves, small wind turbines, and other energy efficiency solutions in Costa Rica, the Dominican Republic, Guyana, Honduras, Nicaragua, Panama, Peru, and Suriname. In Paraguay, the Peace Corps has also trained a group of small farmers to use a device called a bio-digester to properly treat organic waste and provide renewable energy and organic fertilizer.

The Hemispheric Opportunity

The Western Hemisphere has an abundant and diverse supply of both conventional and renewable energy resources. Roughly a third of the world’s proven reserves of oil are found in the Western Hemisphere.¹³ Latin America alone accounts for just under 14 percent of world oil output but only consumes about half that.¹⁴ Overall, Latin America and the Caribbean utilize about one-quarter of its total energy potential.¹⁵ The extensive exploitation of natural gas from shale rock in the United States is expected to sharply reduce U.S. dependence on foreign energy imports and even make it an exporter of liquefied natural gas (LNG). Large shale rock formations—and presumably vast reserves of natural gas that can now be unlocked through hydraulic fracturing or “fracking”—are found throughout Argentina, Brazil, Canada, and Mexico.

The discovery of major off-shore reserves of light oil and natural gas under miles of rock and salt formations in Brazil have the potential to make that country not only self-sufficient, but a major exporter of petroleum. Since 2006, Brazil has been self-sufficient in crude oil. Among the top ten energy-consuming countries in the world, Brazil is also the largest world economy whose energy matrix is the cleanest, with 85 percent of its electricity generated by hydropower and a whopping 60 percent of its total energy consumption coming from renewable sources.¹⁶

Furthermore, with over one-quarter of the world's fresh water supplies, South America can comfortably expand its already high electrical generating capacity through hydropower, although this may eventually run up against climate change-induced shortages.

Of course not all the Western Hemisphere's abundant and diverse energy resources are evenly distributed. Most of the Caribbean, with the exception of Trinidad and Tobago, relies on imported fossil fuels to generate electricity and meet transportation needs. A similar situation exists in Central America. Chile, Paraguay, and Uruguay are net energy importers on a continent that is otherwise a net exporter. What all these countries have in abundance is the potential to greatly utilize energy generated from the sun, wind and sea, as well as geothermal sources. Integrating the hemisphere's energy markets primarily through the interconnection of physical infrastructure such as electricity grids has the potential to fully utilize this panoply of energy resources and direct it to countries where the need is greatest. It can also help reduce greenhouse gas emissions. Interestingly, increasing reliance on natural gas, obtained from vast shale reserves, can play a useful role as a transitional fuel to renewable energy sources if it reduces current reliance on oil and coal. Natural gas emits slightly more than half as much carbon dioxide as coal and 70 percent as much as oil, per unit of energy output, while emissions of carbon monoxide are one-fifth as much as coal, and emissions of sulphur dioxide and particulates are negligible.¹⁷

In addition to being blessed with an abundance of diverse energy resources, the Americas are also home to a vast expanse of tropical rain forests that serve as a natural carbon sink for sequestering greenhouse gas emissions. In particular, the Amazon Basin stores an estimated 20 times the carbon content of the world's annual greenhouse gas emissions—some 49 billion metric tons of carbon—in the biomass of its tropical forest.¹⁸ At the same time, some of the world's largest contributors to global greenhouse gas emissions are found in the Western Hemisphere, including the United States, which now is ranked number two after recently losing its first-place position to China. Canada's emissions, while only one-tenth of its southern neighbor's, are expected to increase further as it develops its oil sand reserves in Alberta and Saskatchewan. Accordingly, the Western Hemisphere offers an opportunity to establish the

type of "cap-and-trade" initiative proposed by then-Senator Obama in 2008, whereby industrial emitters of greenhouse gases in North America can offset a portion of their emissions by investing in low carbon energy projects in Latin America and the Caribbean. By limiting such a program to the Americas, many of the shortcomings of the present U.N.-administered Clean Development Mechanism (CDM) established by the Kyoto Protocol are avoided, as described in greater detail below.

A CDM for the Western Hemisphere

Under the current multilateral CDM, credits are issued to a developed country and its companies in return for financing projects in the developing world. These may include building a more expensive thermal plant fueled by natural gas, or a hydro dam to generate electricity instead of a cheaper coal powered generator. Both reduce global greenhouse gas emissions and would not have been built but for the funding from the rich country donor. The credits received through the CDM are then used to offset mandated emission reduction targets at home. The CDM was set to expire at the end of 2012, but received a reprieve until 2015, when the Kyoto Protocol is expected to be replaced by a legally binding agreement that requires all countries to reduce their greenhouse gas emissions.¹⁹ Given that the United States never ratified the Kyoto Protocol and Canada did not agree to the CDM's extension beyond 2012, a new CDM limited to the Western Hemisphere would serve as the perfect bridge program until such time as a new global initiative comes into force. Alternatively, it could act as a regional initiative if a global accord proves unattainable.

One significant advantage of a new CDM limited to the Western Hemisphere is that it would be less susceptible to the type of fraud that plagues the current U.N.-administered system.²⁰ This is not only because of the smaller number of countries involved, but also because of the plethora of potential institutions in the Western Hemisphere that can administer more effectively a hemispheric carbon offset program. For example, the Andean Development Corporation (CAF) already oversees a Latin American carbon market through the registration and issuance of certified reductions in the transportation sector. The CAF has also signed contracts for carbon emission sales with public and private

agencies, including Spain's Ibero-American Carbon Initiative, and a number of investment funds resulting in new energy generation facilities that use renewable resources, forestry related activities, and an expanded biofuel production. While the CAF, on its own, might not have the resources and personnel to administer a CDM for the entire Western Hemisphere, this task could be divided among different sub-regional entities with a proven track record of reliability. Whereas the CAF might be assigned the Andean region of South America (including Chile), similar roles could be entrusted to the Central American Bank for Economic Integration, the North American Development Bank, and the Caribbean Development Bank, respectively, in those three sub-regions. Furthermore, a CDM for the Mercosur countries could be assigned to the Financial Fund for the Development of the Rio de la Plata Basin (FONPLATA).

A CDM limited to the Western Hemisphere might also neutralize Brazil's refusal—premised on historical sovereignty concerns about “internationalizing” the Amazon—to permit use of the current multilateral CDM to fund any type of forest conservation or reforestation projects in the Amazon. This is a serious bottleneck because Brazil is home to 65 percent of the Amazonian rain forest.²¹ Brazil might be less resistant to an effort to utilize projects in the Amazon to gain carbon offsets under a CDM limited to the Western Hemisphere. Evidence of this can be garnered from the Memorandum of Understanding (MOU) on Cooperation Regarding Climate Change that Brazil and the United States signed in March 2010. Under this MOU, both countries have agreed to cooperate in reducing emissions from deforestation and forest degradation pursuant to the U.N.'s Reducing Emissions from Deforestation and Forest Degradation (REDD)-plus program.²² The goals sought through REDD-plus are compatible with ECPA's sixth pillar of Promoting Sustainable Forestry and Land Use, described above, which seeks to reduce emissions from deforestation and forest degradation, as well as to enhance carbon sequestration in the land use sector.

A hemispheric CDM could free Caribbean island states from their heavy dependence on imported crude oil and refined petroleum for transport and electricity generation which has made them among the most heavily indebted nations in the world on a debt-to-GDP basis.²³ Although there is a wide mix of renewable energy resources such as hydro

(including exploiting strong ocean currents), solar, wind and geothermal available on different islands, exploiting them to generate energy is complicated by miniscule markets. This makes it difficult for private investors to recoup a return on their initial investment within a reasonable time frame. Accordingly, without the existence of some type of external incentive, the money to develop such projects is unlikely to appear. That scenario changes in the context of a hemispheric cap-and-trade program where, for example, a Canadian or U.S. utility company seeking a carbon offset might be willing to invest in an electric generation facility in Dominica that makes use of the country's extensive geothermal potential.

The Challenges

Promoting reliable access to energy resources, particularly fossil fuels, throughout the Western Hemisphere is hampered by the fact that countries such as Mexico constitutionally prohibit foreign ownership rights in the hydrocarbons sector. In addition, the region has been plagued by a resurgence of resource nationalism in recent years that has curtailed foreign investment and technology transfer and has reduced output. This inability to establish a consensus on the role played by private investors in the energy sector was even evident at the Sixth Summit of the Americas in Cartagena. There, Argentine President Cristina Fernández de Kirchner rushed home early and promptly nationalized 51 percent of Repsol-YPF, thus reducing Repsol's ownership stake from approximately 57 percent to just over 6 percent.²⁴ This nationalization damages any initiative promoting private sector participation in the integration of regional energy markets at the regional or hemispheric level.

Complications also exist with respect to connecting the different electrical grid systems. Existing cross-border infrastructure for gas and electricity in South America is the result of an *ad hoc* approach to energy trade between neighboring countries and not a result of policies and rules designed to facilitate long-term cooperation and network development.²⁵ That may explain why Colombia—considered the electricity powerhouse for the Andean region—exported approximately 1000 gigawatt hours of electricity to Ecuador and about 300 gigawatt hours to Venezuela in 2009, out of a total production of 57,618 gigawatt hours.

This amount is considerably less than Argentina's exports to Chile and Uruguay that same year, despite its notorious self-inflicted energy problems, and even less than Brazilian exports to Argentina and Uruguay.²⁶ In contrast, Central America provides an example of longer-term strategic thinking that is regional in scope.

During the 1990s the IDB financed the interconnection of the national energy grids of Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama, thereby improving the reliability of service and reducing consumer rates. As a result, a Regional Electricity Market or *Mercado Eléctrico Regional* (MER) was established following entry into force of the Framework Treaty on the Electricity Market of Central America in January 1999. This Framework Treaty, and two subsequent protocols, opened the domestic market of the six Central American countries to regional operators with respect to the generation, transmission, and sale and purchase of electricity. Two institutions—with supranational authority to make binding decisions that are binding on national governments and may supersede conflicting domestic legislation—were established to oversee the regional electricity market. These two institutions are the Regional Commission on Electricity Interconnection or *Comisión Regional de Interconexión Eléctrica* (CRIE) and the Regional Operating Authority or *Ente Operador Regional* (EOR). The CRIE is tasked with ensuring that the national governments fulfill the commitments made in the 1999 Framework Treaty and subsequent regulations, while the EOR oversees actual operations of electrical interconnections and directs surplus energy flows to where they are needed most.

One important aspect of the 1999 Framework Treaty was that it authorized the establishment of a new company that could either be a wholly state-owned, or a public-private partnership, to build and operate a single 1800-km transmission line from the Guatemalan-Mexican border (so as to interconnect with the Mexican electricity grid) to Panama. This is known as the Electrical Interconnection System for the Countries of Central America or *Sistema de Interconexión Eléctrica para los Países de América Central* (SIEPAC). Construction on SIEPAC finally began in 2007 and is expected to enter into full operation, after a number of delays, sometime in 2012.

Despite the existence of an elaborate institutional framework that is empowered with supranational authority, the actual amount of electricity traded among the Central American countries to date has been minimal. National governments appear reluctant to permit long-term contracts for the international sale of electricity that might put access to domestic electricity supplies at risk. This apprehension may change with SIEPAC. Another troubling aspect about the Central American electricity market is its high dependency on fossil fuels to generate power and the negative impact this has on global efforts to reduce greenhouse gas emissions. Ironically, this phenomenon responds to the widespread privatization of electricity in individual Central American countries in the 1990s. The private sector prefers to invest in electric generation projects that utilize fossil fuels because of shorter gestation periods that ensure a quicker return, and because the initial capital investment cost is anywhere from one-half to two-thirds less than it is for most hydropower equivalents.²⁷

With respect to climate change issues, the United States lacks credibility, as it never ratified the Kyoto Protocol, and thereby chose not to legally bind itself to reduce greenhouse gas emissions. In addition, a highly polarized political climate in the United States has led to a paralysis that prevents passage of federal climate change legislation which would, among other things, establish a carbon emissions trading scheme at the national level. This U.S. national scheme could form the basis of the proposed CDM limited to the Western Hemisphere.

The dearth of political leadership has resulted in the lack of hemispheric consensus on how to achieve energy security, effectively interconnect energy infrastructure, and enact legislation, at the national level, to support a regional cap-and-trade mechanism that would significantly reduce global greenhouse gas emissions. No government or group of major economies in the Western Hemisphere has stepped forward to assume a leadership role and adequately fund initiatives designed to implement any of these goals.

In this regard, the absence of the United States is particularly conspicuous. In the two years since ECPA's official launch, Washington has committed less than \$150 million to fund ECPA projects throughout the Western Hemisphere. If climate change poses as serious a threat to the planet

as many scientists believe, this paltry sum will do little to stave off impending global catastrophe. Although the U.S. economic recovery remains tenuous and its fiscal situation is precarious, the monies appropriated to ECPA to date by the U.S. government are embarrassingly meager. By way of comparison, the United States in recent years has spent approximately \$4.4 trillion dollars on two wars in Afghanistan and Iraq.²⁸ If the richest country in the Americas has failed to make any serious investment to fund initiatives under ECPA, it is highly unrealistic to expect other governments to make up the difference. It speaks volumes that neither President Obama, in his speech to the heads of state gathered at the Sixth Summit of the Americas, nor a senior member of the U.S. delegation, raised ECPA.

Meager Results from the Sixth Summit of the Americas on Energy and Climate Change

The Sixth Summit of the Americas meeting in Cartagena in April 2012 focused on interconnecting the physical infrastructure of the Western Hemisphere at the national, regional, and sub-regional levels. In his opening address, Colombian President Juan Manuel Santos set forth the goal in this way:

“working, with the support of multilateral institutions, to develop programs and projects for physical infrastructure and electrical interconnection to integrate the Americas” and “establishing appropriate coordination to prevent and respond to natural disasters..., including those caused by climate change.”²⁹

One of the specific mandates coming out of the Cartagena Summit was to “promote and/or optimize electrical interconnection and foster the development of renewable energy generation in the Americas.”³⁰ Given the disappointing results produced by previous efforts in Latin America to connect national electricity grids across borders, it is perplexing that this topic received such prominence in Cartagena, other than the fact that, if it came to pass, it would be economically beneficial for Colombia. Not only will the type of interconnection that is proposed from Panama to Chile require a herculean effort to complete and absorb huge amounts of capital, it will also require major changes to domestic laws in order to ensure some level of harmonization that can facilitate cross-border sales of electricity.³¹ Furthermore, it is

unclear from where the electricity will be generated. It is presumed to come from Colombian hydroelectric dams, but the future viability of this resource is threatened by climate-induced melting of Andean glaciers. More realistic is the mandate “to encourage the transfer of available technologies in energy under voluntary and mutually agreed terms, as well as the exchange of best practices.”

Surprisingly, given its inclusion as a mandate from previous Summits of the Americas, the Cartagena Summit was silent on the issue of conservation and energy efficiency. Energy efficiency is the cheapest and easiest way to reduce greenhouse gas emissions. Efficiency and conservation will lead to more significant reductions in greenhouse gas emissions over a shorter period of time than the gains from enhanced reliance on renewable energy alternatives, such a solar and wind power combined, due to current technological constraints. The International Energy Agency estimates that greater efficiency could reduce current greenhouse gas emissions by two-thirds, while the McKinsey Global Institute thinks energy efficiency could get the world halfway toward the goal, espoused by many scientists, of keeping the concentration of greenhouse gases in the atmosphere below 550 parts per million.³² The only reference to climate change arising from the Cartagena Summit is a toothless, boilerplate mandate under the heading of “Disaster Reduction and Management” that calls on the governments of the Western Hemisphere to “work with regional, sub-regional, and international financial institutions with the aim to strengthen financing mechanisms for adaptation to climate change.”³³

Recommendations

The Sixth Summit of the Americas in Cartagena was most notable for the failure of the United States to exert any leadership role on the crucial issues of energy security and climate change. In his official address, President Obama made only passing reference to forging clean energy and climate partnerships in the Western Hemisphere, and never mentioned the ECPA. This was a remarkable omission as the ECPA has been the U.S. government’s official submission for fulfilling the energy and climate change related mandates arising from the Trinidad Summit in 2009.³⁴ By downplaying energy and climate change, Washington risks ceding the initiative—at least in South America—to

UNASUR. Although UNASUR has been active on the issue of energy security, including the need to expand the use of renewable and alternative energy resources, as well as enhance energy efficiency and conservation, it has been conspicuously silent with respect to specific projects to address climate change. Even on the energy security front, issues of ideology and political alignment have hampered UNASUR's progress. Accordingly, there is still a need for Washington to focus on hemispheric energy security and climate change issues.

1. Propose Carbon Offset Agreements at the State and Provincial Levels

In the absence of federal climate change legislation, the U.S. State Department should promote and assist states such as California and those in the Regional Greenhouse Gas Initiative, such as Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island and Vermont, that have cap-and-trade programs to enter into carbon offset agreements. These would replicate the current U.N.-administered CDM on a bilateral basis with interested foreign countries and subdivisions throughout the Western Hemisphere. Sacramento has already taken the lead on this front when the state's Air Resources Board released proposed regulations in May 2012 to link California's cap-and-trade program to the Province of Quebec to form a joint carbon market to reduce greenhouse gas emissions. California has also been working with a number of other Canadian provinces—including British Columbia, Manitoba and Ontario—within the Western Climate Initiative on approaches to linking their emissions trading. Furthermore, California has been at the forefront in signing bilateral agreements under REDD-plus with the states of Acre in Brazil and Chiapas in Mexico for pilot projects to protect their rainforests in return for carbon credits. California has also approached a number of other Brazilian and Mexican states, as well as several provinces in Indonesia and Nigeria, to devise programs through which international forestry credits can be eligible for trading under California's cap-and-trade system.

2. Reshape the ECPA Portfolio

The Obama administration should renew its commitment to the ECPA by giving the ECPA portfolio to the new Bureau of Energy Resources at the State Department and

requiring that the Special Envoy and Coordinator for International Affairs (who heads that Bureau) work closely with the Secretary of Energy. Equally as important is the need to adequately fund projects that fall under ECPA's umbrella. In order to obtain the best return on its investment in a relatively short period of time, it is imperative that the federal government work in partnership with the private sector firms throughout the Western Hemisphere to develop energy efficiency mechanisms, including cleaner and more efficient use of fossil fuels. As President Obama himself often mentions, energy efficiency initiatives are the low-hanging fruit in the push to reduce greenhouse gas emissions. Meanwhile, efforts to enhance energy efficiency and promote conservation are the least likely to engender political pushback from other nations in the Western Hemisphere, unlike more ambitious efforts to integrate energy markets.

3. Leadership in Galvanizing Science and New Technologies

The Energy Department should encourage and coordinate the efforts of universities and scientific think tanks throughout the Americas to develop new sources of renewable energy and to enhance the efficiency of existing energy resources through the development of new technologies. The focus needs to be on joint technology development and licensing rights so as to facilitate the subsequent rapid diffusion of new technologies.³⁵

Conclusion

The planet cannot wait for the White House to seek the most propitious political moment to make significant reductions in greenhouse gases. The Obama administration should not wait for a multilateral agreement to replace the Kyoto Protocol, or hope to convert short-sighted members of the U.S. Congress who prefer to ignore the looming catastrophe that the vast majority of the international scientific community indicates will happen if we do not seriously tackle climate change now. Accordingly, the Obama administration should go beyond acknowledging the abundance of opportunities our neighbors in the Americas offer and embark upon a serious initiative to engage them in a hemispheric effort to enhance energy security and reduce greenhouse gas emissions that can serve as a global prototype.

Footnotes

¹ A full copy of the report entitled “Economics of Climate Change in Latin America and the Caribbean: Summary 2009” is available at: http://www.eclac.cl/publicaciones/xml/3/38133/2009-851-Summary-Economics_climate_change-WEB.pdf. The report emphasizes solid evidence showing that climate change will have a significant economic impact on the agricultural sector in Latin America and the Caribbean. However, these impacts are heterogeneous by country and demonstrate nonlinear behavior. Some countries, or parts thereof, will thus enjoy temporary windfalls as a result of moderate increases in temperature and changes in precipitation, although the negative impacts will prevail in the long term for everyone. The same report also notes that while Latin America’s carbon dioxide emissions from the energy sector are increasing as per capita income rises, current emissions are primarily attributable to changes in land use patterns, such as increased deforestation, and not from energy consumption. However, this could dramatically change if future water shortages due to climate change lead to a decreased reliance on hydropower. The lower levels of carbon dioxide indicate less reliance on fossil fuels than in other parts of the world. In the case of the Caribbean, while 97 percent of carbon emissions are the result of energy consumption, emission levels are insignificant on a global scale.

² Organization of American States (OAS), *Declaration of Commitment of Port of Spain: Securing Our Citizens’ Future by Promoting Human Prosperity, Energy Security and Environmental Sustainability*, April 19, 2009, p. 11, fn. 1. Available at: http://www.summit-americas.org/GA09_CD/v_summit_decl_comm_en.pdf. Bolivia’s concerns were premised on “the view that the development of cooperative policies and arrangements intended to expand biofuels in the Western Hemisphere can adversely affect and impact on the availability of food and raise food prices, increase deforestation, displace populations due to the demand of land, and ultimately aggravate the food crisis.” In addition, biofuel expansion “would directly affect low-income persons, especially the poorest economies of the developing countries.”

³ *Ibid.*, pp. 12-13. In terms of developing and implementing a voluntary code of corporate responsibility, particular emphasis is to be given to “initiatives that enhance dialogue among government, industry, local communities, indigenous groups, and non-governmental organizations, to enable all stakeholders to better understand, participate in and benefit from energy sector activities.”

⁴ OAS, *Plan of Action of the III Summit of the Americas*, April 2001, p. 21. Available at http://www.summit-americas.org/iii_summit/iii_summit-poa.eng.pdf.

⁵ OAS, *Declaration of Commitment of Port of Spain* (April 2009).

⁶ A press release put out by the White House on April 19, 2009 noted only that: “President Obama invited countries of the region to participate in an Energy and Climate Partnership of the Americas; a voluntary and flexible framework for advancing energy security and combating climate change. Countries will be encouraged to suggest tangible ideas for cooperation, including on energy efficiency, renewable energy, cleaner fossil fuels, and energy infrastructure.” The White House, Press Release, “The United States and the 2009 Summit of the Americas: Securing Our Citizens’ Future.” Available at: <http://www.whitehouse.gov/the-press-office/2009/04/19/2009-summit-americas-securing-our-citizens-future>.

⁷ United States Department of Energy, *ECPA-Open Invitation and Flexible Framework*. Available at: <http://energy.gov/node/1939/office-policy-and-international-affairs/initiatives/energy-climate-partnership>.

⁸ OAS, “Official Remarks of United States President Barack Obama at the Opening Ceremony of the Fifth Summit of the Americas,” April 17, 2009, p. 2. Available at http://www.summit-americas.org/V_Summit/remarks-usa-en.pdf. More cynical observers have pointed out that this emphasis on an “equal partnership” was intended to mask the fact that the recently inaugurated Obama appeared in Port of Spain empty handed. Given the collapsing economy he inherited from outgoing President George W. Bush, two major foreign wars, and a financial services sector teetering on bankruptcy, the United States was in no condition to propose any type of initiative that would involve significant contributions of time and capital. Regardless of the pragmatic reasons for this change in approach, for a region long plagued by the hegemonic power wielded by the United States, Obama’s new tone was wildly popular and even elicited an effusive embrace of Obama by Venezuelan President Hugo Chávez.

⁹ U.S. Department of Energy, Press Release: “Americas’ Energy Leaders Take Action to Realize Energy and Climate Partnership of the Americas,” June 16, 2009. Available at <http://www.energy.gov/articles/americas-energy-leaders-take-action-realize-energy-climate-partnership-americas>. The emphasis on “limited funding” practically ensures that this proposal will meet the same fate as the Clean Cities partnership proposed by the Clinton administration back in 1999. That initiative with similar objectives but limited to Chile collapsed from a lack of funding at a time when the federal government enjoyed a healthy fiscal surplus.

¹⁰ A full list of the initiatives falling under the ECPA umbrella is available at: <http://www.ecpamerica.org>.

¹¹ The IDB originally hoped to increase this credit line to \$3 billion by 2012. That never happened. Ironically, the bulk of the money within this credit line has been supplied by countries from outside the Americas, including Japan, South Korea and Spain.

- ¹² Sadly this program soon collapsed, as the U.S. government failed to adequately fund it, and the three American scientists lost interest and began pursuing other opportunities.
- ¹³ British Petroleum, *BP Statistical Review of World Energy*, June 2012, p. 6. Available at <http://bp.com/statisticalreview>.
- ¹⁴ José Miguel Insulza, "Energy and Development in South America," in C. Arnson et al. (eds.), *Energy and Development in South America: Conflict and Cooperation* (Washington, D.C.: Woodrow Wilson International Center for Scholars, 2008), p. 9.
- ¹⁵ Lila Barrera-Hernández, "South American Energy Network Integration: Mission Possible?" in M. M. Roogenkamp, et al. (eds.), *Energy Networks and the Law: Innovative Solutions in Changing Markets* (Oxford: Oxford University Press, 2012), p. 61. Natural gas's reserves-to-production ratio exceeds 130 years in Bolivia, Ecuador, Peru, and Venezuela.
- ¹⁶ United States Energy Information Agency, *Brazil Country Analysis Brief*, February 28, 2012. Available at <http://www.eia.gov/emeu/cabs/Brazil/pdf.pdf>. By way of comparison, renewable energy sources, including solar, wind, geothermal and biomass, as well as hydropower, generated only 13 percent of the electricity in the United States in 2011, while renewable sources contribute to approximately 8 percent of total energy consumption. One reason for Brazil's high reliance on renewable energy resources is that almost the entire passenger vehicle fleet is now equipped with flex fuel engines that allow Brazilian drivers to run their cars exclusively on ethanol.
- ¹⁷ M. Wolf, "Prepare for the Golden Age of Gas," *Financial Times*, p. 9, February 22, 2012.
- ¹⁸ Centre for International Governance Innovation (CIGI), *Blueprint for a Sustainable Energy Partnership for the Americas* (Waterloo, Ontario: CIGI, 2009), p. 9. Available at <http://www.cigionline.org>.
- ¹⁹ At the U.N. Conference on Climate Change (COP 17) in Durban, South Africa in December 2011, some 35 industrialized countries agreed to extend their Kyoto Protocol mandates (and, as a consequence, their participation in the CDM) until such time as a new climate change agreement is concluded by all U.N. member states. The deadline for achieving such an agreement, which will include the United States and all major developing countries committing to legally binding reductions in greenhouse gas emissions, is 2015.
- ²⁰ Research conducted by two Stanford University law professors in 2008 found that a large fraction of the credits generated under the CDM did not represent genuine reductions in greenhouse gas emissions, as many projects that "reduce" emissions would have been built anyway and at a far lower cost. Even worse, the CDM creates perverse incentives for developing countries to increase carbon emissions as a way of generating CDM credits that can then be offered to developed nations desperate to find offsets for their own pollution-inducing activities. See Michael Wara and David Victor, *A Realistic Policy on International Carbon Offsets*, Program on Energy and Sustainable Development Working Paper # 74, Freeman Spogli Institute for International Studies (Stanford University: April 2008). Available at http://fsi.stanford.edu/publications/a_realistic_policy_on_international_carbon_offsets/.
- ²¹ CIGI, *Blueprint for a Sustainable Energy Partnership for the Americas*. Interestingly, because Brazil's emissions primarily come from the burning of tropical rain forests, this practice does **not** contribute to new global greenhouse emissions *per se*, as live trees naturally remove carbon from the air and, when burned, are simply releasing back into the atmosphere what they initially took out. So there is no net gain or loss. See Burton Richter, *Beyond Smoke and Mirrors: Climate Change and Energy in the 21st Century* (New York: Cambridge University Press, 2010), pp. 68-9. "Since plants get the carbon for their growth from the carbon dioxide in the atmosphere and release it on burning, they do not give any net increase in greenhouse gas as long as they are grown without fertilizers and other modern agriculture technology." The real problem, of course, is the soot released by the mass burning of trees, which creates havoc in the atmosphere in terms of trapping or keeping out solar rays as well as the previously mentioned loss of a natural means for sequestering new carbon dioxide emissions from the heavy global use of fossil fuels.
- ²² REDD is an effort to create a financial value for the carbon stored in forests, offering incentives for developing countries to reduce emissions from forested lands and invest in low-carbon paths to sustainable development. REDD-plus includes the role of conservation, sustainable management of forests, and enhancement of forest carbon stocks as a way to potentially generate financial flows from the developed world to developing countries under any new multilateral climate agreement to replace the Kyoto Protocol with a new multilateral agreement no later than 2015. At the December 2011 U.N. Climate Change conference in Durban, South Africa, standards were issued for financing REDD-plus projects (including the use of market and non-market sources).
- ²³ Anthony T. Bryan, "Trinidad and Tobago," in Sidney Weintraub (ed.), *Energy Cooperation in the Western Hemisphere: Benefits and Impediments* (Washington, D.C.: Center for Strategic and International Studies, 2007), p. 381. Approximately 93 percent of the Caribbean's energy consumption is fossil fuel based, while only 4 percent comes from renewable energy.

- ²⁴ Repsol is a privately held Spanish energy company with assets worldwide.
- ²⁵ Barrera-Hernández, "South American Energy Network Integration: Mission Possible?" 2012. For the most part, the development of existing interconnected facilities has been a state-sponsored undertaking backed by individual agreements over the sale of electricity or gas.
- ²⁶ Comisión de Integración Energética Regional, *Síntesis Informativa Energética de los Países de la CIER: Información del Sector Energético en Países de América del Sur, América Central y El Caribe, Datos del Año 2009*, 2010, p. 15. Available at <http://www.cier.org.uy>.
- ²⁷ CIGI, *Blueprint for a Sustainable Energy Partnership for the Americas*, p. 10. One criticism leveled at SIEPAC is that with a transmission capacity of 300 megawatts, it will not have a major impact on a system with 10,000 megawatts of capacity.
- ²⁸ A recent comprehensive academic study put the actual costs of both the Iraq and Afghan wars through the end of 2011 at \$4.4 trillion, counting expenses such as veterans' medical benefits. By contrast, the Congressional Budget Office's most recent estimation was just \$1.5 trillion. See J. Brinkley, "Iraq Outlook Looks Dim After U.S. Troop Pullout: Some Predict Another Brutal Dictatorship," *Político*, February 27, 2012.
- ²⁹ OAS, "Remarks by President Jose Manuel Santos at the Opening of the Sixth Summit of the Americas," April 23, 2012. Available at http://www.summit-americas.org/SIRG/2012/041412/statement_santos_inaugural_en.pdf. In a not-too-veiled admonition to U.S. climate skeptics who have, so far, managed to scuttle efforts to enact federal climate change legislation, Santos noted that "[n]o one can deny the reality of climate change and the urgent need to prepare to face it and mitigate its effects."
- ³⁰ OAS, *Mandates Arising from the Sixth Summit of the Americas*, p. 1, May 23, 2012. Available at: http://www.summit-americas.org/SIRG/2012/041412/mandates_sc_en.pdf.
- ³¹ Chile's electricity grid is not interconnected but divided in three parts.
- ³² *The Economist*, "The Elusive Megawatt," May 10, 2008. The U.S. Environmental Protection Agency (EPA) allocated 33 percent and 38 percent of greenhouse gas emissions from energy use in the United States to the transportation and building sectors respectively. See Richter, *Beyond Mirrors and Smoke: Climate Change and Energy in the 21st Century*.
- ³³ OAS, *Mandates Arising from the Sixth Summit of the Americas*, p. 4.
- ³⁴ OAS Summit Implementation Review Group, *Report of the United States Government on Implementation of Mandates from the Fifth Summit of the Americas*, May 27, 2010. Available at http://www.summit-americas.org/nat_rep/2010/USA_en.pdf.
- ³⁵ CIGI's *Blueprint for a Sustainable Energy Partnership for the Americas* proposed an energy and environment hemispheric research initiative that looked at three specific models: (1) the Alberta Oil Sands Technology and Research Authority (AOSTRA); (2) a project funded by the Bill and Melinda Gates Foundation that included Amyris Biotechnologies (a University of California at Berkeley startup) to develop a synthetic malaria drug distributed in the developing world on a not-for-profit basis, but whose bio-fuel applications were sold commercially; and (3) the International Energy Agency's so-called implementing agreements. The rationale for doing so was to avoid the dilemma whereby governments invest heavily in both basic and applied research, as well as provide generous loan guarantees during the commercialization phase, but often have no intellectual property rights to the successfully developed technologies. This phenomenon inhibits the technology's subsequent dissemination. See CIGI, *Blueprint for a Sustainable Energy Partnership for the Americas*.

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The author's history of hemispheric initiatives on energy and climate change leaves readers with the question of why sustained pronouncements at the summit meetings since 1994 had continually failed. Examination of the causes of failure might focus on the following: the absence of hemispheric homogeneity, growing resource nationalism, and lack of sufficient hemisphere-wide financial resources. OAS will not solve the key challenges of advancing energy security and combating climate change, because it has neither the juridical competence nor the funds to oblige the member states to carry out the repeated recommendations. Summits of the Americas are useful as a gathering of hemispheric leaders, during which time several bilateral meetings can take place—but they should not raise hopes for realistically solving serious problems. We should view the summits as rhetorical opportunities for advocacy, not vehicles for advancing pragmatic action.

Solutions lie within the competency of the Inter-American Development Bank (IDB), which has the means both to gather interested parties together and to fund identifiable projects. Conscious of the importance of these issues, the IDB currently finances Energy Innovation Centers to facilitate regional projects. Among them are the Regional Energy Efficiency Training Center in Costa Rica, the Geothermal Center in El Salvador, and a Biomass Center in Brazil. If hemispheric solutions cannot be achieved to confront the challenges of energy and climate change, then pursuit of specific bilateral programs is a realistic and achievable way forward.

The U.S. Department of Energy, the Natural Resources Defense Council and other private U.S. entities are more likely to participate in discrete, bilateral projects than in grand hemispheric ideas. Clearly defined bilateral tasks would stimulate the talent and resources of peoples to use their scientific knowledge and investments effectively to advance energy and environmental projects.

The author's recommendation to pursue carbon offset agreements at the state level may provoke a constitutional challenge on the grounds that only the federal government

has the authority to negotiate international agreements. However, the author is proposing joint carbon markets, not binding treaties. The proposal is more akin to commercial and transportation agreements between states than international laws. California leads the way with its proposed linkage of a cap-and-trade program with the Province of Quebec. If this goes forward, then we can expect numerous other joint carbon markets. These state-to-state agreements have the advantage of recognizing and assuming global responsibilities, but enacting them at the local level. This may lay the groundwork for resolving other strategic global problems.