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ENERGY SECURITY IN LATIN AMERICA

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BEFORE THE

COMMITTEE ON FOREIGN RELATIONS
UNITED STATES SENATE

ONE HUNDRED NINTH CONGRESS

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ENERGY SECURITY IN LATIN AMERICA

THURSDAY, JUNE 22, 2006

U.S. SENATE,
COMMITTEE ON FOREIGN RELATIONS,
Washington, DC.

The committee met, pursuant to notice, at 9:40 a.m., in room SD–419, Dirksen Senate Office Building, Hon. Richard G. Lugar (chairman of the committee) presiding.

Present: Senators Lugar, Chafee, Coleman, Martinez, Biden, and Nelson.

Also present: Senators Craig and Salazar.

OPENING STATEMENT OF HON. RICHARD G. LUGAR, U.S. SENATOR FROM INDIANA

The CHAIRMAN. This hearing of the Senate Foreign Relations Committee is called to order.

We are honored to have two distinguished colleagues before us on our first panel today. To respect their time commitments, we will call upon them for their testimony immediately. After they have completed their testimony, I will deliver an opening statement, as will the distinguished ranking member as he arrives, and then we have a remarkable panel to follow this morning.

Rollcall votes will come, three of them, at about 11 o'clock. So we will do our best to maneuver around them. We have some extraordinary opportunities today to learn about energy policy, Latin America, and the intersection of these with regard to our country.

It's a real privilege to call now upon the distinguished Senator from the State of Idaho, Larry Craig, to be followed by the equally distinguished Senator from the State of Colorado, Ken Salazar. Gentlemen, proceed as you wish. Your full statements will be made a part of the record. If you would summarize within a 5- or 10-minute period, that would be desirable.

Senator Craig.

STATEMENT OF HON. LARRY E. CRAIG, U.S. SENATOR FROM IDAHO

Senator CRAIG. Well, Mr. Chairman, thank you very much for allowing both of us to be here. I'm pleased to have Ken at my side as we discuss these important issues.

It is an opportunity to address both energy and Latin American issues, and I want to commend you and your insight in addressing this very timely and important set of topics, and for introducing S. 2435, the Energy Diplomacy and Security Act. Your bill will help move the Latin American region toward the center of this country's strategic planning, and reevaluate attitudes amongst some United States officials who currently limit our ability to diversify our energy supply and also to compete fairly with countries like China for resources in the hemisphere.

Mr. Chairman, you know I've always been fairly direct and blunt about these issues. Recent developments in Latin America are not in keeping, in my opinion, with the United States' energy, economic, or national security interest. For example, the nationalization of industries in Latin America is troubling.

Further, while this kind of backward-looking activity is contrary to our country's belief in the power of property rights and free enterprise in transforming developing economies, it is nevertheless very welcome to countries around the world with leftist-leaning governments and state-controlled industries. In particular, it is my firm opinion that the likes of China are exploiting these regressive developments right at our doorstep.

Whether or not that's true, I know China is preparing to plant oil rigs 50 miles offshore of our coastline. Venezuela has recently purchased 18 rigs from that country. Hugo Chavez has stated numerous times that he seeks to divert his oil exports away from the United States to China.

But, in any event, the fact remains that our policies, if they ever warrant that term toward Latin America, don't seem to be working. And it is arguably the case that China is inclined to exploit this precipitous decline in United States influence in Latin America. It is a product of failure. The result may be that some governments in Latin America are doomed to repeat past economic mistakes and thereby relive their failed turbulent histories, rather than join the expanding communities of modern and progressive democracies.

As it relates to China's engagement in Latin America, let me direct the committee's attention to two statements. In yesterday's New York Times, Thomas Friedman points out that China, too, thinks of Latin America as its backyard. In particular, Friedman states, "China is almost exclusively focused on extracting natural resources—timber, iron, soybeans, minerals, gas, and fish—to feed its voracious appetite and keep jobs and factories humming in China."

Additionally, the administration's own national security strategy paper points to China's energy resource hunger and states that China is "expanding trade, but acting as if they can somehow lock up energy supplies around the world or seek to direct markets rather than opening them up."

Mr. Chairman, I firmly believe your bill, S. 2435, of which I am a cosponsor, will change a policy toward Latin America of nonengagement on substantive issues that ought to be of mutual concern to the United States and its neighbors. The position is actually worse than merely benign neglect or nonengagement. At the same time that we fail to engage on drug interdiction, energy development, extradition, and similar criminal justice issues, we are actually antagonizing the populations of countries with whom we have a strategic interest in maintaining productive relationships.

Mr. Chairman, I will ask that the balance of my statement become a part of the record, and let me summarize and conclude.

I believe it is only through aggressive oversight and pushing bills like S. 2435 that we can change course and correct our policies in Latin America. Failure to constructively engage this region and to promote partnerships on energy and other issues between the United States and Latin American countries will condemn the United States to consistently poor outcomes on matters of importance to our citizens.

Whether it is affordable energy or the jobs that arise from soundly executed foreign policy or an orderly and legal immigration policy, we have a responsibility to be friends, neighbors, and to engage our neighbors to the south. I have no doubt that the region you are addressing today is just as important, if not more important, than the Middle East, where we seem to focus all of our attention today.

In my opinion, if we do not correct our course in Latin America, the long-term consequences to the United States will prove seriously adverse. I hope we do not wake up one day and realize that our focus has been too narrowly directed at the Middle East while equally important events, including the petropolitics of Latin America, are in the process of delivering a profound and negative impact on this country.

I thank you for allowing me to testify, Mr. Chairman.

[The prepared statement of Senator Craig follows:]

PREPARED STATEMENT OF HON. LARRY E. CRAIG, U.S. SENATOR FROM IDAHO

Mr. Chairman, thank you for this opportunity to address both energy and Latin America issues. I want to commend you for your insight in addressing these very timely and important topics, and for introducing S. 2435, the Energy Diplomacy and Security Act. Your bill will help move the Latin American region toward the center of this country's strategic planning by reevaluating attitudes among some U.S. officials that currently limit our ability to diversify our energy supplies and also to compete fairly with countries like China for resources in this hemisphere.

Mr. Chairman, let's call a spade a spade. Recent developments in Latin America are not in keeping with the United States' energy, economic, or national security interests. For example, the nationalization of industries in Latin America is troubling. Further, while this kind of backward-looking activity is contrary to our country's belief in the power of property rights and free enterprise to transform developing economies, it is nonetheless very welcome to countries around the world with leftist-leaning governments and state-controlled industries. In particular, it is my firm opinion that the likes of China are exploiting these regressive developments right on our doorstep.

Whether or not it is the fact that China is preparing to plant oil rigs 50 miles off our southern coastline, or that Venezuela has recently purchased 18 oil rigs from that country, or the simple fact that Hugo Chavez has stated numerous times that he seeks to divert his oil exports away from the United States and to China—the fact remains constant that our policies (if they even warrant that term) toward Latin America don't seem to be working and it is arguably the case that China is inclined to exploit the precipitous decline in United States influence in Latin America produced by that failure. The result may be that some governments in Latin America are doomed to repeat past economic mistakes and thereby relive their failed turbulent histories, rather than join the expanding community of modern and progressive democracies.

As it relates to China's engagement in Latin America, let me quickly point out two statements. In yesterday's New York Times, Thomas Friedman points out that China, too, thinks of Latin America as their backyard. In particular, Friedman states, "China is almost exclusively focused on extracting natural resources—timber, iron, soybeans, minerals, gas, and fish to feed its voracious appetite and keep jobs and factories humming in China." Additionally, the administration's own National Security Strategy paper points to China's energy resource hunger by stating that China is "expanding trade, but acting as if they can somehow lock-up energy supplies around the world or seek to direct markets rather than opening them up."

Mr. Chairman, I firmly believe your bill, S. 2435 (of which I am an original sponsor) will seek to change a policy toward Latin America of nonengagement on substantive issues that ought to be of mutual concern between the United States and its neighbors. The position is actually worse than one of merely negligent non-engagement. At the same time that we fail to engage on drug interdiction; the development of energy resources; extradition and similar criminal justice issues, we are actually antagonizing the populations of countries we have a strategic interest in maintaining productive relations with.

Mr. Chairman, to be blunt, we have some resistance to overcome in this city to a new approach toward Latin America. While Republican and Democrat administrations have come and gone, many bureaucrats remain that harbor a strong institutional bias toward Latin America. That said, it is my opinion that many high-level bureaucratic officials in the State Department and the CIA have been misguided in their responsibilities in the region. No doubt Hugo Chavez is a worrying phenomenon. However, the questionable antics of our State Department during the coup d'etat in Venezuela in 2002 have, in my opinion, had dire consequences on our ability to appropriately influence not only Venezuela, but other countries in the region as well. There is no quicker formula for solidarity among Latin American governments than the appearance of interference and victimization by the United States.

Further, we have small groups in this country who seem to genuinely fear the likes of Chavez, Castro, and Morales and want nothing to do with them even if it involves the pursuit of U.S. national interests. This fear leads to comprehensive nonengagement, leaving the door open for further and unwanted influence in the region from other countries that do not have our well-being at heart. Those who fear these leftist leaders of Latin America must have no faith in the great concepts of America, capitalism, diplomacy, the power of engagement, and a human's will to be free. Additionally, those driven by fear in this country fail severely to see that isolation policies have never been successful. Unfortunately, these small, fear-mongering groups do not appear to be isolated in particular regions of our country. They also appear to be locked in at influential bureaucratic posts at the State Department and the CIA.

It is only through aggressive oversight and pushing bills like S. 2435 that we can change course and correct our policies in Latin America. Failure to constructively engage this region and to promote partnership on energy and other issues between the United States and Latin American countries will condemn the United States to consistently poor outcomes on matters of importance to our citizens—whether it is affordable energy, or the jobs that arise from soundly executed foreign trade policies.

I have no doubt that the region you are addressing today is just as important, if not more important, than the Middle-East where we are heavily involved today. In my opinion, if we do not correct our course in Latin America, the long-term consequences to the United States will prove seriously adverse. I hope we do not wake up one day and realize that our focus had been too narrowly directed toward the Middle East while equally important events including the petropolitics of Latin America were in the process of delivering a profound and negative impact on this country.

The CHAIRMAN. Well, I thank you very much for your testimony, Senator Craig, and for your leadership in energy policy, generally. I thank you for your specific reference to the legislation we have offered and its general concept, that our State Department must have officials who are engaged in the geopolitics of energy. That clearly includes Latin America, as well as the other areas that you have referenced. We must urgently reorganize our own efforts, both legislatively as well as administratively.

Senator Salazar, would you proceed with your statement.

STATEMENT OF HON. KEN SALAZAR, U.S. SENATOR FROM COLORADO

Senator SALAZAR. Thank you very much, Chairman Lugar, and thank you to Senator Nelson and Senator Martinez for the bipartisan leadership that you bring to this committee and to this United States Senate. I also very much enjoy working next to my colleague, Senator Craig, on so many issues, from veterans' affairs to energy issues, and it's always a pleasure to appear with him.

I come today to talk about energy security in Latin America, as a member of the Energy Committee and as someone who has long been involved in our struggle to understand the unsustainability of our own energy policies and practices here at home.

My home State of Colorado is home to the National Renewable Energy Laboratory, and my constituents care deeply about the issue of energy independence. From rural communities in the eastern plains excited about new ethanol and wind technologies, to the citizens who experienced the oil shale boom and bust cycle of the late 1970s and early 1980s, they all care about the issue of energy very deeply.

But I have also had the opportunity to think some about this relationship between foreign policy and energy security, and I appreciate the opportunity to briefly discuss some thoughts with the committee today. I worry every day, like all of us, about the horrible facts that we face with our dependency crisis today.

America consumes one-quarter of the world's oil supplies but has just 3 percent of world oil reserves. Roughly 22 percent of the world's oil is in the hands of countries under United States or U.N. sanctions. By some accounts, only 9 percent of the world's oil is in the hands of free countries.

As many of us speak about energy independence, about freeing the United States from an ever-escalating, zero-sum competition for resources with China and India, and of freeing the United States from our dependency on oil-rich regimes that are sometimes among the very worst actors on the international stage, this is a very serious topic that needs to be addressed.

I am pleased to be a cosponsor of Senate bill 2435, Chairman Lugar's Energy Diplomacy and Security Act of 2006, which is also cosponsored by Senator Biden and by Senator Craig. This legislation sees the urgent need to elevate energy issues on our diplomatic agenda, such as through an institutionalized Western Hemisphere Crisis Response mechanism. Last year's devastating hurricanes and their aftermath made plain the need for this kind of coordinated approach.

It also recognizes the opportunities inherent in this effort by calling for a Western Hemisphere Energy Cooperation Forum and Energy Industry Group. Those entities can help emphasize our shared interests with Canada, Mexico, Central and South America.

Those shared interests should be obvious, but too often they are obscured by political rhetoric, misperceptions, and old grievances. As I have often discussed with my colleague, Senator Martinez, the highly politicized and provocative policies of Venezuela's Hugo Chavez spring to mind when one thinks about the energy issues in the region, as does the Evo Morales decision to nationalize Bolivia's oil and gas fields.

In the Western Hemisphere, as elsewhere, control over energy resources can be translated into a certain type of political power, but this is not the whole story. We have much to learn from our neighbors in the Western Hemisphere. We can learn from Brazil's success with ethanol. We can learn from Canada's experience with oil sands.

And we in turn, as the United States, have much to offer to our neighbors. By serving as a catalyst for greater cooperation and a more strategic approach to energy security in the region, U.S. diplomacy can help energize the public and the private sectors to address some of the real problems, like inadequate electricity infrastructure investment in Latin America and other challenges that they face that hamper regional growth and create instability.

An energized approach to regional energy diplomacy, one that is respectful of the development needs of our neighbors, and one that takes the long-term view, would be a real asset in our efforts to build a more stable and a more prosperous world. I wish this committee all the best in its work on this issue, and I look forward to helping you as an active partner in these endeavors.

I am reminded, in conclusion, of the Alliance for Progress which President Kennedy formed in the 1960s. I spent about 4 months in Central America back in the early 1980s, and the people of Central America still remembered that Alliance for Progress that had been formed.

So I think as we look at our world ahead in this new century, that the relationship that we have with our neighbors to the south and through all of Latin America is going to be very crucial for us in our efforts to create a safer and more secure world. And I believe that the energy coalitions that we could form with these countries can create the foundation for the kind of alliance that we need to have with all of Latin America.

I thank you, Mr. Chairman. I thank you, Senator Nelson and Senator Martinez, for your attention this morning.

[The prepared statement of Senator Salazar follows:]

PREPARED STATEMENT OF HON. KEN SALAZAR, U.S. SENATOR FROM COLORADO

First I want to thank Chairman Lugar, Senator Biden, and the rest of the committee for inviting me to testify today; it is always a pleasure to work with my colleagues on both sides of the aisle who share an interest in energy security issues. And of course I always enjoy working alongside Senator Craig.

I come to today's topic of Energy Security in Latin America as a member of the Energy Committee, and as someone long involved in the struggle to address the unsustainability of our own energy policies and practices here at home.

My home State of Colorado is home to the National Renewable Energy Laboratory, and my constituents care deeply about energy issues—from the rural communities excited about new ethanol and wind technologies to the citizens who experienced the oil shale boom and bust cycle of the late 1970s and early 1980s.

But I have also had the opportunity to think through the relationship between foreign policy and energy security, and this opportunity to briefly join the discussions of the Foreign Relations Committee has helped to crystallize some of that thinking.

I worry about the horrible, realistic facts that we face with our depending crisis today. America consumes one-quarter of the world's oil supplies but has just 3 percent of world oil reserves.

Roughly 22 percent of the world's oil is in the hands of countries under United States or United Nations sanctions. By some accounts, only 9 percent of the world's oil is in the hands of "free" countries.

I often speak, as do many others, of achieving "energy independence"—of freeing the United States from an ever-escalating, zero-sum competition for resources with China and India, and of freeing the United States from our dependency on oil-rich regimes that are, sometimes, among the very worst actors on the international stage.

No one should mistake this as a quest for isolationism. Energy markets are global markets, and that is not going to change. David Victor recently published an oped about the much-touted success of Brazil's energy policies in the Houston Chronicle. He noted that Brazil's success involved removing buffers from standing between the people of Brazil and the reality of the international energy markets, thereby exposing an interesting paradox.

"Even as Brazil has become self-sufficient it has also, ironically, become more dependent on world markets. That's because the Brazilian Government has widely relaxed price controls so that the prices of fuels within the country are set to the world market. Thus Brazilians see real world prices when they fill up at the pump, and the decisions about which cars to buy and how much to drive reflect real costs and benefits of the fuel they consume."

So I recognize that the quest for energy security is not about pulling up the drawbridges and hunkering down. I also recognize that moving toward a new energy economy on a global scale promises not simply to remove obstacles and problems—it promises to enable new partnerships and opportunities that can strengthen important international relationships, serve as catalysts for new economic growth and development, and enmesh more and more of the world in a web of stabilizing relationships that are, literally and figuratively, empowering.

That is why I am so pleased to be a cosponsor of S. 2435, Chairman Lugar's Energy Diplomacy and Security Act of 2006, which is also cosponsored by Senator Biden and by Senator Craig.

This legislation sees the urgent need to elevate energy issues on our diplomatic agenda—such as through an institutionalized Western Hemisphere Crisis Response Mechanism. Last year's devastating hurricanes, and their aftermath, made plain the need for this kind of coordinated approach.

It also recognizes the opportunities inherent in this effort by calling for a Western Hemisphere Energy Cooperation Forum and Energy Industry Group. Those entities can help emphasize our shared interests with Canada, Mexico, Central and South America.

Those shared interests should be obvious, but too often they are obscured by politicized rhetoric, misperceptions, and old grievances. The highly politicized and provocative policies of Venezuela's Hugo Chavez spring to mind when one thinks about energy issues in the region, as does Evo Morales' decision to nationalize Bolivia's oil and gas fields. In the Western Hemisphere, as elsewhere, control over energy resources can be translated into a certain type of political power. But this is not the whole story. We have much to learn from our neighbors in the Western Hemisphere. We can learn from Brazil's success with ethanol. We can learn from Canada's experience with oil sands.

And we, in turn, have much to offer. By serving as a catalyst for greater cooperation and a more strategic approach to energy security in the region, U.S. diplomacy can help energize the public and the private sectors to address some of the real problems—like inadequate electricity infrastructure investment in Latin America—that hamper regional growth.

An energized approach to regional energy diplomacy—one that is respectful of the development needs of our neighbors, and one that takes the long-term view—would be a real asset in our efforts to build a more stable and prosperous world. I wish this committee all the best in its work on this issue, and look forward to being an active partner of yours in these endeavors.

The CHAIRMAN. Well, thank you very much, Senator Salazar. Thank you for that personal reference to your own experience in the past, as well as the work you now do on committees that are certainly allies of our efforts. This is not a jurisdictional problem in the Senate. It's one that offers opportunities for many committees, and we would like to play our role. We really thank both of you for contributing to that through your presence this morning.

We have, as you both have witnessed, both of our Senators from Florida. Before I excuse our two witnesses from the first panel, I would like to ask those Senators if they have questions or comments they would like to make.

Senator Martinez.

STATEMENT OF HON. MEL MARTINEZ, U.S. SENATOR FROM FLORIDA

Senator MARTINEZ. Mr. Chairman, thank you very much. I appreciate that, and I appreciate my colleagues being here on this important issue.

I couldn't agree more with Senator Craig's assertion that the importance of Latin America to our country sometimes is well understated. The fact is that it is a tremendous area of opportunity but also one in which, if we do not care about it enough, we may also encounter very great difficulties. I think there are great opportunities for cooperation. Obviously, political stability, rule of law, are essential for us to have the kind of relationships that are positive and that can be so fruitful, as we've seen with Mexico and Brazil.

On the other hand, when we have a disregard for human rights and private property rights, then we see the catastrophic end which can come, the example, obviously, Cuba. But also we see the very, very negative trends in Venezuela, which are not good for their own people or good for the relationships in the region, recently followed by Bolivia, what I think is unfortunate because it has caused tremendous disruption to many of their strong partners like Spain and other Latin American countries.

The example of Brazil is one that we should note because their shift to ethanol, which has allowed them to achieve energy independence, a country that does not enjoy large fossil fuel deposits, is something that I think we could take a great lesson from. What they have done with flex fuel vehicles as well as extensive use of ethanol is something that I think is a great lesson for us.

But thank you for holding this hearing, and thank you for the opportunity to speak.

The CHAIRMAN. Thank you very much, Senator.

Senator Nelson.

STATEMENT OF HON. BILL NELSON, U.S. SENATOR FROM FLORIDA

Senator NELSON. Mr. Chairman, I think it's worth noting that both the Senators have expressed concern about Hugo Chavez. And isn't it interesting that as he threatens to cut off his oil supply to the United States, a threat that at this moment I think is a hollow threat—simply because of his enormous investment and the fact that the refineries on the Gulf Coast are the kind of refineries that can process his grade of crude, and his infrastructure over the United States, all the Citgo gas stations are part of PDVSA—so it's probably a hollow threat right now.

However, the fact that he is threatening to cut off what is, in effect, 12 percent of our daily consumption of oil in the United States underscores the point that the two gentlemen have said: We ought to be looking to alternative fuels, so that we're not dependent on that foreign supply of oil, his, Venezuela's, or others.

And thank goodness that the Peruvian people suddenly said enough of this foreign meddling in their internal politics and their elections for president, and said, "We don't want another country to come in," as Venezuela, through President Chavez, was trying to do. So that gives us a glimmer of hope.

But both of these Senators have stated it well. The United States foreign policy ought to be much more heavily involved in Latin America, and one of the things that we can do indirectly is change our dependence on foreign oil, so that we don't have that daily dependence on Venezuelan oil.

Thank you.

The CHAIRMAN. Thank you, Senator Nelson. Let me just conclude by mentioning that Senator Craig has been very active, and we have tried to support his efforts. It is possible the Canadian firm, Iogen, will make an investment in his State of Idaho to produce cellulosic ethanol. This would be the first large production, and would offer indications of how that process is going to go.

I think it's a tremendously important investment. I know Senator Craig has addressed the Secretary of Energy, as I have, to try to get through the regulations that seem to need to get written to utilize the legislation Congress has already passed on loan guarantees. Do you have any up-to-date news, Senator Craig, that you can share with the committee on how that proceeds?

Senator CRAIG. Well, Mr. Chairman, thank you very much. Obviously ethanol is becoming a substantial success story in this country. To be able to go to a greater biomass like cellulose—straw, stubble, cornstalks and all of that—is a tremendous opportunity. You've explained it well.

In the EPAC legislation of last year we produced the necessary tools by which to help that happen. DOE and OMB are working closely right now to get those regs out. I did meet with our new OMB Director this week, and it was a most frank discussion because it's kind of like one department pointing at the other, both blaming each other. I said, "Blame game is overwith, guys. Go to work and get it done. The timeline is important for us, for this country, for this technology."

Mr. Portman agrees with that. I think he will move aggressively. He tells me he will do so. He is focused on those particular regulations. It's not just for Iogen and cellulosic development. It's for a broad range of other new technologies coming into the market that we're interested in, collectively. And so I think with your urging—and I tremendously thank you for your support in that—and your continued urging, I think they need to know that we're very intent on what they're doing. I think they now understand that, and that time is of the essence.

Thank you.

The CHAIRMAN. Well, thank you very much, Senator Craig. And I would just add, I have been in touch with our Hoosier friend, Al Hubbard, at the White House, so that he might be helpful likewise——

Senator CRAIG. Good.

The CHAIRMAN [continuing]. Because the President himself has spoken of the importance of cellulosic ethanol. I think our joint feeling is, this is the time to get on with it. This is really an important and urgent situation. But I thank you for your additional testimony.

Senator CRAIG. Well, thank you.

The CHAIRMAN. We thank both of you for coming and look forward to continuing to visit with you.

The Chair would now like to call the second distinguished panel that will appear before the committee this morning: the Honorable Domingo Cavallo, chairman and CEO, DFC Associates, former Minister of the Economy for Argentina; Mr. Luis Giusti, senior adviser, Center for Strategic and International Studies in Washington, DC; Mr. Eduardo Pereira de Carvalho, president, Brazilian Association of Sugar Cane and Ethanol Producers, Sao Paulo, Brazil; and the Honorable David L. Goldwyn, president of Goldwyn International Strategies, LLC, of Washington, DC. Gentlemen, we are delighted to have you.

The CHAIRMAN. I am going to proceed now, as I indicated, with my opening statement. When Senator Biden comes to our hearing, we'll recognize him of course for that same opportunity.

The Foreign Relations Committee meets today to continue our examination of the ways in which energy is transforming geopolitics and threatening United States national security and economic prosperity. In previous hearings we have defined the severity of these threats, examined options for reducing United States oil dependence, and explored in detail how energy is affecting our relationships with other nations, including India, China, and the Persian Gulf states.

Today we meet to look at energy security in the context of our relations with Latin America. Mexico and Venezuela are two of America's top oil suppliers. Mexico has been a reliable energy partner. Venezuela, on the other hand, has made repeated threats to suspend oil supplies, and President Hugo Chavez has tried to use Venezuela's oil wells to gain political advantages in this hemisphere. His inflammatory rhetoric and actions, coupled with the precipitous nationalization of the natural gas sector by Bolivia, underscore the vulnerability of United States national security to the political manipulation of energy.

The Government Accountability Office has just completed a draft version of a report that I commissioned, that examines our country's vulnerability to an oil supply disruption by Venezuela. The report says that a 6-month disruption that removed, and I quote, "all or most Venezuelan oil from the world market," could raise oil prices by $11 per barrel and reduce U.S. GDP by $23 billion. Even more startling is the possibility the Venezuelan Government might follow through on its threat to shut down its wholly owned refinery system in the United States, operated by Citgo.

Even without a government disruption of the flow of oil from Venezuela, oil production in that country faces serious challenges that could impact the global price of oil and the United States economy. The GAO report points to a severe deterioration in the ability of Venezuela to meet its oil production targets in the foreseeable future. This has happened because the Venezuelan oil industry has allowed its technical and managerial expertise to deteriorate, and has failed to invest sufficiently in the maintenance of its oil fields.

The GAO study reinforces the urgent need to move away from reliance on volatile and sometimes hostile producers. According to the GAO, administration officials told them, and I quote, that "they do not have Venezuelan-specific contingency plans for a potential loss of oil." Instead, our response to a Venezuelan oil disruption would rely on the Strategic Petroleum Reserve and diplomatic efforts to convince other oil producers to increase production.

In March, I introduced, as has been mentioned by our Senatorial colleagues, the Energy Diplomacy and Security Act, S. 2435, which would realign our diplomatic priorities to address the new geopolitics of energy security. It would dramatically enhance our international energy activities, and move our policy away from the outdated notion that energy security is simply about finding more oil and gas.

Although global in scope, a particular priority of this bill is to stimulate partnerships in the Western Hemisphere. The high cost of energy imports, vulnerability to supply shocks, and the increased potential for conflict are concerns widely shared in the region.

The bill creates a standing ministerial-level Western Hemisphere Energy Forum, modeled on the Energy Working Group of the Asia Pacific Economic Cooperation Forum. The Energy Diplomacy and Security Act also calls for international partnerships among energy producers and consumers.

One area of energy cooperation that could be especially fruitful for our hemisphere is ethanol. The expansion of ethanol capabilities would improve the diversity and reliability of fuel supplies, create jobs in many countries, and help reduce greenhouse gas emissions. Brazil, long ago, saw the importance of ethanol and is now energy self-sufficient. Brazil and the United States can work together to improve our mutual energy security, and that of the region, by spreading our shared expertise. The current protective tariff on ethanol imports to the United States should be reconsidered in light of this mutual interest in improving energy security.

This morning, we are joined by two distinguished panels, and we have heard from the first, our colleagues Senator Larry Craig and Senator Ken Salazar. Both, I would point out, are members of the Energy Committee of the United States Senate and cosponsors of the Energy Diplomacy and Security Act. We appreciate the benefit of their energy expertise and their counsel as our committee continues to examine these issues, as does the Energy Committee.

On the second panel just before us, we will hear from four experts with deep experience in Western Hemisphere energy affairs. We welcome Dr. Domingo Cavallo, the former Economy Minister of Argentina, and currently chairman and CEO of DFC Associates; Mr. Luis Giusti, the former president of Venezuela National Oil Company, currently senior adviser at the Center for Strategic and International Studies; Mr. Eduardo Carvalho, formerly the Deputy Finance Minister of Brazil, currently the president of Brazil's Association of Sugar Cane and Ethanol Producers; and Mr. David Goldwyn, former Assistant Secretary of Energy for Policy and International Affairs, and currently the president of Goldwyn International Strategies.

We thank each one of you for coming to see us this morning. Let me say at the outset that your statements will be made a part of the record in full. I would like to hear from all of you, and we ask for you to summarize your comments within perhaps a 10-minute period of time. We will be liberal in interpretation because our desire is to hear you and to make sure that all of you are heard, prior to 11 o'clock, when we will have rollcall votes. So we will work our way around that as best we can, with as much continuity as possible.

We thank you for your patience with our legislative system and the duties that each one of us have, not only to hear distinguished witnesses but to vote at least three times on our armed services authorization bill this morning. I'll ask you to proceed in the order that I have introduced you, and that would be first of all Mr. Cavallo. Would you turn on your microphone, please.

STATEMENT OF HON. DOMINGO CAVALLO, CHAIRMAN AND CEO, DFC ASSOCIATES, LLC, AND FORMER MINISTER OF ECONOMY FOR ARGENTINA

Mr. CAVALLO. Chairman Lugar, Senator Martinez, Senator Nelson, Senator Chafee, thank you for this opportunity to discus with you a situation that impacts energy security.

As paradoxical as it may sound, the "Bolivarian" policies that the President of Venezuela describes as "integrationist" are destroying the very valuable comparative advantage that the Southern Cone of America had developed in the previous decade. Therefore, I predict that they will be self-defeating.

President Hugo Chavez's rhetoric and actions not only create a sense of vanishing security in the United States but also, through their influence on President Evo Morales of Bolivia, have a concrete negative impact on several South American countries. Their policies are destroying a very promising regional integration process that until recently benefited the energy-scarce economies of the region.

To make things worse, Argentina, which during the 1990s, led the regional energy integration process, has been trapped by misaligned energy prices in 2002. This has the effect of reinforcing the disintegration process fostered by President Hugo Chavez.

Chile and Brazil are already suffering the impact of regional energy disintegration. For the time being, the Argentinean Government does not acknowledge the negative effect on its economy because it has shifted the burden of the adjustment to Chile. Nevertheless, the country's business community is already foreseeing natural gas and electricity shortages ahead.

The sooner Argentina starts to work together with Chile and Brazil to revive the energy integration process of the 1990s by re-encouraging private investment in the energy sector, the better for reversing this trend and for opening the eyes of President Evo Morales and making him conscious of the bad advice and false promises he receives from President Hugo Chavez.

During the 1990s, energy supplies increased in the Southern Cone, thanks to significant investment in exploration and exploitation of hydrocarbons and in the generation, transmission, and distribution of electricity and gas. Energy availability and energy costs became an important source of comparative advantage for the region vis-a-vis other regions of the world.

This competitive edge had its origin mainly in the availability of reserves of natural gas in Bolivia and in Argentina, and acquired a regional dimension thanks to the rapid process of cross border energy integration. Availability of natural gas reserves strongly influences the cost of electricity generation because natural gas is the main, primary input for the production of electricity.

In my written statement I provide a description, with prices and quantities, of this very nice process of energy integration and the good results that it generated.

This favorable integration process began to change when, in the aftermath of the Argentine crisis in 2002, the Argentinean Government decided to impose a price freeze on natural gas tariffs at the "pesified" precrisis level. This, which would have been already problematic in the absence of any other developments, happened at the time when the international prices of energy began to surge.

In practice, this implied that the prices of natural gas in Argentina fell to one-third of its precrisis level at the same time when the international price of energy more than doubled. The consequences of these policies were to foster domestic demand and to discourage domestic supply.

In the year 2005, Argentina already imported again 5 million cubic meters a day from Bolivia, and had to curtail exports to Chile. To this date, the most optimistic forecasts of energy production in Argentina predict that it will stop being a net exporter of gas by the year 2010, but most likely at the current rates of consumption Argentina will become a net importer earlier.

This new situation generated the surge in demand for Bolivian gas. The forecast predicts the level of demand of 68 million cubic meters per day in 2010, compared to 31 million cubic meters per day in 2005. This is because the entire region will become dependent on Bolivian gas. Peru, which has been investing in exploring and exploiting natural gas, intelligently chose to develop a facility for exporting LNG via the Pacific, so at this point it can only be expected to be a marginal source of supply for its neighbors via cross-border gas ducts.

The increased demand for its natural gas reserves could have allowed Bolivia to increase exports at more advantageous prices, if it had chosen to create the correct market incentives for further exploration and exploitation of its existing untapped reserves.

Unfortunately, President Evo Morales, following the advice of President Hugo Chavez, has chosen a policy path that will likely have the opposite effect. By breaking its contractual agreement with the private companies that had invested in exploration and exploitation of natural gas in the last decade, it has increased the uncertainty faced by private sector producers, and will likely generate disinvestment in the sector.

The combination of these policy choices in Argentina and Bolivia have had the effect of restricting supply and lethally harming the comparative advantage that had evolved in the previous years.

The advocates of these new energy policies in Latin America argue that Chavez's Venezuela will become the main regional supplier of natural gas at low prices and the supplier of capital and technology for Yacimientos Petroliferos Fiscales Bolivianos to expand its natural gas production. This is not warranted by the recent developments by Venezuela's own oil and gas production.

Oil production that had reached 3.5 million barrels per day in 1998 has dropped to 2.6 in 2005, and natural gas production dropped from 89 million cubic meters per day to 77 in the same period. This is not surprising because Venezuela under Chavez, rather than increasing human capital investment in the state-owned energy company, PDVSA, and creating incentive for private sector risk-taking, has done exactly the opposite.

In practice, the only state-owned company that could actually help Yacimientos Petroliferos Fiscales Bolivianos become an efficient energy producer is the Brazilian Petrobras, which has shown to be efficient and visionary. During the same period in which Venezuela reduced its energy production, Brazil, which is significantly poorer in nonrenewable energy resources, has increased its oil production from 1 million barrels per day to 1.5 million, and its natural gas production from 17 million cubic meters per day to 30 million.

But the Bolivian strategy, instead of choosing Petrobras as its partner, so far has made it its main victim. If, as it has already been announced by President Lula, Brazil encourages more investment in exploration of its own offshore gas reserves and succeeds in becoming self-sufficient in natural gas by 2008, or invests in regasification plants to access the LNG market, Bolivia may lose its main client. By then, President Evo Morales will realize that the advice of President Hugo Chavez was lethal.

Paradoxically, its only alternative for the future will be to encourage the production and exportation of LNG, as former Presidents Quiroga and Sanchez de Lozada had envisaged. Of course, that solution will require creating very favorable conditions for international private investment, because Bolivia will have neither the human nor the financial resources for such an endeavor.

[The prepared statement of Mr. Cavallo follows:]

PREPARED STATEMENT OF HON. DOMINGO CAVALLO, CHAIRMAN AND CEO, DFC ASSOCIATES, LLC, FORMER MINISTER OF ECONOMY FOR ARGENTINA

Chairman Lugar, Senator Biden and members of the committee, thank you for this opportunity to discuss with you a situation that impacts hemispheric energy security.

As paradoxical as it may sound, the “Bolivarian” policies that the President of Venezuela describes as “integrationist” are destroying the very valuable comparative advantage that the Southern Cone of America developed in the last decade.[1]

President Hugo Chavez’s rhetoric and actions not only create a sense of energy insecurity in the United States, but also, through their influence on President Evo Morales of Bolivia, have had a negative impact on several other South American countries. Their policies are destroying a very promising regional integration process that until recently benefited the energy scarce economies of the region. To make things worse, Argentina, which during the 1990s led the regional energy integration process, has been trapped by misaligned energy prices since 2002. This has the effect of reinforcing the disintegration process fostered by President Hugo Chavez.

Chile and Brazil are already suffering from the impact of regional energy disintegration. For the time being, the Argentinean Government does not acknowledge the negative effect on its economy because it has shifted the burden of the adjustment to Chile. Nevertheless the country’s business community is already foreseeing natural gas and electricity shortages. The sooner Argentina starts to work together with Chile and Brazil to revive the energy integration process of the 1990s by reencouraging private investment in the energy sector, the better the chances are for reversing this trend and for making President Evo Morales aware of the bad advice and false promises he receives from President Hugo Chavez.

THE REGIONAL ENERGY INTEGRATION PROCESS OF THE 1990S

During the 1990s, energy supply increased in the Southern Cone, thanks to significant investment in exploration and exploitation of hydrocarbons and in the generation, transmission, and distribution of electricity and gas. Energy availability and energy costs became an important source of comparative advantage for the region vis-a-vis other regions of the world. This competitive edge had its origin mainly in the availability of reserves of natural gas in Bolivia and in Argentina, and acquired a regional dimension thanks to the rapid process of cross border energy integration. Availability of natural gas reserves strongly influences the cost of electricity

[1] I would like to acknowledge the comments of Pablo Givogri, Raul Garcia, and Carlos Bastos.

generation because natural gas is the primary input for the production of electricity.[2]

This process was guided by several energy integration protocols signed by Brazil, Argentina, Uruguay, Paraguay, Chile, and Bolivia. Each country was committed to restructuring its energy sector according to a common vision and common regulatory principles. These were (a) promotion of competition, (b) attraction of private capital, (c) regulation of monopolist activities, (d) open access to transport facilities, (e) economic criteria for price setting, (f) independent regulatory authorities, and (g) encouraging the participation of many international actors.

This very promising process of regional integration is now in crisis. The policies of price freezes for natural gas and electricity in Argentina after the devaluation of 2002 significantly reduced investment carried out by the private sector in the energy sector. [3] More recently, as the consequence of nationalization of hydrocarbons in Bolivia, natural gas producers have announced the suspension of new investments. In summary, these recent policy decisions by the two key suppliers in the energy matrix of the region are destroying the natural comparative advantage that had been developed in the previous decade.

THE EFFECT OF PRIVATE INVESTMENT IN THE ENERGY SECTOR OF ARGENTINA

In the early 1990s, Argentina organized the energy sector in line with the principles of the signed integration protocols and, in a short period of time, became a net exporter of natural gas to the region. The production of natural gas in Argentina increased from 62 to 98 million m^3/day between 1995 and 2000. Thanks to this impressive increase in supply, Argentina stopped importing natural gas from Bolivia in 2000[4] and began exporting significant volumes to gas-strapped Chile (since 1997).[5] The market wellhead prices paid to natural gas producers that created the incentives for exploration and extraction of natural gas in Argentina was around $1.4 per mmbtu in the Neuquen basin. The City Gate prices that include transportation costs, ranged from $2.0 per mmbtu in the Greater Buenos Aires Area to $2.8 per mmbtu in Santiago. These prices were roughly half of the price of natural gas in the U.S. market. This price differential exemplifies the extent of the aforementioned comparative advantage in natural gas that had emerged in the Southern Cone.

THE EFFECT OF PRIVATE SECTOR INVESTMENT IN THE ENERGY SECTOR OF BOLIVIA

Bolivia, which as a consequence of expansion of natural gas production in Argentina, was losing its only foreign client, began negotiating with Brazil the export of volumes of natural gas that were four times bigger than those that it had been exporting to Argentina. At the end of 2001, the negotiated wellhead price of U.S. $1.2 per mmbtu in the Tarija basin[6] translated into a U.S. $3.0 per mmbtu in the San Pablo City gate. This was slightly higher than prices paid in Argentina and Chile but still substantially lower than prices in the United States. The exports of natural gas from Bolivia to Brazil reached 22 million m^3/day in 2005. Production in Bolivia increased from 9 to 31 million m^3/day between 2000 and 2005.

POLICY REVERSAL IN ARGENTINA

These favorable integration forces began to change when, in the aftermath of the Argentine crisis in 2002, the Argentinean Government decided to impose a price

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[2] Gas interconnections reached around 7,000 kilometers in extension connecting Argentina, Bolivia, Brazil, Chile, and Uruguay.

[3] The government intervention in the gas market deepened in 2004 when gas prices were segmented by end-user category and activity. After the 2002 devaluation and domestic rates "pesification," gas prices were split between the domestic and the external market. Until such date, gas prices for both markets had evolved with virtually no noticeable differences among them. The government's agreement with producers in 2004 determined a further split in gas prices within the domestic market prices. Such domestic price split distinguishes the captive distributors' market (residential, commercial users)—which maintains the same rate—from the deregulated clients market (mostly large users buying directly from the producers).

[4] Imported volumes decreased significantly during 1999—1.1 million m^3/day compared to 1998 volumes—4.7 million m^3/day.

[5] Exports to Chile from Argentina increased from 1.9 MMm^3/day in 1997 to 12.0 MMm^3/day in 2000.

[6] The base wellhead price of the gas to be exported through Bolivia to Brazil (BTB) pipeline was U.S. $0.95 per million btu for a volume from 8 to 16 MMm^3/day. For additional volumes up to 30.08 MMm^3/day the established base price is U.S. S1.20 per million of btu. These prices are adjusted through a formula related to the price of an international fuel oil basket.

freeze on natural gas tariffs at the "pesified" precrisis level.[7] This, which would have been already problematic in the absence of any other developments, happened at the same time when the international prices of energy began to surge. The prices of natural gas in Argentina fell to one-third of its precrisis level at the same time that the international prices of energy more than doubled. The consequence of this policy was an increase in domestic demand and a decrease in domestic supply. In the year 2005, Argentina imported 5 million m^3/day from Bolivia, and had to curtail exports to Chile. The most optimistic forecasts of energy production in Argentina predict that it will stop being a net exporter of gas by the year 2010. But most likely, at the current rates of consumption, Argentina will become a net importer earlier.

INCREASED DEMAND FOR BOLIVIAN NATURAL GAS

This new situation generated a surge in demand for Bolivian gas. The forecasts predict a level of demand of 68 millions m^3 per day in 2010 compared to 31 million m^3 per day in 2005. This is because the entire region will become dependent on Bolivian gas. Peru, which has been investing in exploration and exploitation of natural gas, intelligently chose to develop facilities for exporting LNG via the Pacific, so at this point it can only be expected to be a marginal source of supply for its neighbors via cross border gas ducts.

The increased demand for its natural gas reserves could have allowed Bolivia to increase exports at more advantageous prices, if it had chosen to create the correct market incentives for further exploration and exploitation of its existing untapped reserves. Unfortunately, President Evo Morales, following the advice of President Hugo Chavez, has chosen a policy path that will likely have the opposite effects. By breaking its contractual agreements with the private companies that had invested in exploration and exploitation of natural gas in the last decade it has increased the uncertainty faced by private sector producers and will likely generate disinvestment in the sector.

EXPENSIVE CONSEQUENCES OF POLICIES IN BOLIVIA AND ARGENTINA

The combination of these policy choices in Argentina and Bolivia have had the effect of restricting supply and lethally harming the comparative advantage that had evolved in the previous years. Once these policies have worked out all their effects, the costs of energy for industrial consumers of natural gas and electricity power plants in the main industrial areas of the region will be close to the levels paid by their counterparts in the United States. The reason is that natural gas users in these areas will have to purchase LNG from foreign markets at international prices which are roughly equivalent to alternative sources of energy like fuel and diesel oil.

VENEZUELA'S FALSE PROMISES

The advocates of these new energy policies in Latin America argue that Chavez's Venezuela will become the main regional supplier of natural gas at low prices and the supplier of capital and technology for YPFB (Yacimientos Petroliferos Fiscales Bolivianos) to expand its natural gas production. This is not warranted by the recent developments of Venezuela's own oil and gas production. Oil production that had reached 3.5 million of barrels per day in 1998 has dropped to 2.6 in 2005, and natural gas production dropped from 89 millions m^3 per day to 77 in the same period.[8] This is not surprising because Venezuela, under Chavez, rather than increasing human capital investment in the state-owned energy company, PDVSA, and creating incentives for private sector risk taking, has done exactly the opposite.

PETROBRAS COULD HAVE HELPED YPFB

In practice, the only state-owned company that could actually help YPFB become an efficient energy producer is the Brazilian Petrobras, which has shown to be efficient and visionary. During the same period in which Venezuela reduced its energy production, Brazil, which is significantly poorer in nonrenewable energy resources, has increased its oil production from 1 million barrels per day to 1.5 million and

[7] Wellhead gas prices for the distribution market were indirectly frozen as a consequence of suspending the pass through gas price mechanisms to end users rates—contemplated in the licenses awarded by the Government of Argentina.

[8] Furthermore, only 15 trillion of cubic feet (TCF) gas reserves are not associated with oil and could be develop as an additional source of natural gas for exports. Of these, 11 TCF are already committed to a LNG project. So, Hugo Chavez is offering gas that Venezuela actually will not have available.

its natural gas production from 17 millions m^3 per day to 30. But the Bolivian strategy, instead of choosing Petrobras as its partner, so far has made it the main victim.

IN THE MEDIUM TERM BOLIVIA WILL SUFFER

If, as it has already been announced by President Lula da Silva, Brazil encourages more investment in exploration of its own offshore gas reserves and succeeds in becoming self-sufficient in natural gas by 2008, or invests in regasification plants to access the LNG market, Bolivia may lose its main client. By then, President Evo Morales will realize that the advice of President Hugo Chavez was lethal. Paradoxically its only alternatives for the future will be to encourage the production and export of LNG as former Presidents Quiroga and Sanchez de Lozada had envisaged. Of course, that solution will require creating very favorable conditions for international private investment, because Bolivia will have neither the human nor the financial resources for such an endeavor.

WELLHEAD NATURAL GAS PRICES IN THE SOUTHERN CONE

[US$/MMBTU]

At Wellhead	Precrisis—prices before devaluation (2001)	Segmented markets—2008
Tarija Basin (Bolivia)		
Exports to Brazil	1,23	3,00
Exports to Argentina	—	3,00
Noroeste Basin (Argentina)		
Residential and Small Users (commercial, small industries)	1,21	0,40
Other Users (CNG and users with consumption >300 m^3/day)	1,21	0,98
Deregulated Market (large users)	1,18	1,51
Exports	1,26	1,89
Import from Bolivia at Border	—	3,24
Neuquina Basin (Argentina)		
Residential and Small Users (commercial, small industries)	1,44	0,48
Other Users (CNG and users with consumption >300 m^3/day)	1,44	1,04
Deregulated Market (large users)	1,39	1,64
Exports	1,48	2,05
Austral Basin (Argentina)		
Residential and Small Users (commercial, small industries)	1,03	0,34
Other Users (CNG and users with consumption >300 m^3/day)	1,03	0,87
Deregulated Market (large users)	0,98	1,45
Exports	0,96	1,81
Santos Basin (Brazil)	1,58	3,60

CITY GATE NATURAL GAS PRICES IN THE SOUTHERN CONE

[US$/MMBTU]

At City Gates	Precrisis—prices before devaluation (2001)	Segmented markets—2006
Greater Buenos Aires (GBA)		
By TGN System		
Residential and Small Users (commercial, small industries)	1,96	0,65
Other Users (CNG and users with consumption >300 m^3/day)	1,96	2,07
Deregulated Market (large users)	1,93	2,63
Import from Bolivia	—	4,45
By San Martin Pipeline		
Residential and Small Users (commercial, small industries)	1,97	0,66
Other Users (CNG and users with consumption >300 m^3/day)	1,97	2,11
Deregulated Market (large users)	1,92	2,76
San Pablo		
Gas from Bolivia	3,02	4,82
Gas from Domestic Production	1,89	3,91
Residential, Commercial, Industries	3,02	4,82
Power Generation	2,59	3,92

CITY GATE NATURAL GAS PRICES IN THE SOUTHERN CONE—Continued

[US$/MMBTU]

At City Gates	Precrisis—prices before devaluation (2001)	Segmented markets—2006
Santiago		
Gas from Neuquina Basin (all users)	2,81	3,44

The CHAIRMAN. Thank you very much, Mr. Cavallo.

I would like to proceed now with our second witness, Mr. Giusti.

STATEMENT OF LUIS E. GIUSTI, SENIOR ADVISOR, CENTER FOR STRATEGIC AND INTERNATIONAL STUDIES, WASHINGTON, DC

Mr. GIUSTI. Thank you very much, Mr. Chairman. It's an honor to share the floor with you and the rest of your colleagues.

I'd like to start with a brief backdrop. The discussion about oil independence has taken center stage in this country, but that independence, understood as self-sufficiency, is not the real issue, not only because it's not feasible but because the business of oil is global. The high prices of recent times result not from the large imports of oil into the United States, but from the fundamentals and perceptions of the global oil market.

Today, crude oil inventories in OECD countries are at a 20-year high, and global inventories are at an 8-year high. The futures market has been in "contango" since October 2004, meaning that future prices are higher than pump prices, which has triggered sustained stockpiling. On the other hand, growth in demand for oil has been slowing down, 3 million barrels a day in 2004, 1 million barrels a day in 2005, and so far this year about 800,000 barrels a day, indicating that the high price is having an effect on consumption.

Then why are prices so high? The most important factor is the erosion of spare capacity. Having been large in the past, 15 million barrels a day in 1985, 9 million barrels a day in 1991, and 8 million barrels a day still in 2002, it is now down to 2 million barrels a day.

But can we expect the future development of new large spare oil production capacity for us to feel comfortable again? Most likely the answer is no, because with the exception of Saudi Arabia, nobody is planning to build it. The spare capacity enjoyed in the past was not planned for. It resulted from an overestimation of long-run demand. Inadvertently, we developed a comfort cushion.

Perhaps now the world will have to develop a new perspective of the meaning of inventories. The director of the International Energy Agency, Claude Mandil, has gone to great length and efforts to convey the message that strategic stocks of OECD are enough to cover 18 months of an eventual absence of Iranian exports, 2.7 million barrels a day, but to little avail.

The conclusion is that the oil market is global, and oil is generally fungible. For that reason, in analyzing supply stability, it would be shortsighted to look at oil flows from Latin America into this country in isolation, or for that matter any other oil imports from other regions or countries. The United States will continue to be a large importer of oil, and those imports can only increase. Stability and security will always depend on the global fundamentals, irrespective of where the imported oil comes from.

Having said that, I'm going to address the three points that you asked me to comment about in your letter. The first one has to do with reliability of supplies from Venezuela, a point that has been already mentioned several times this morning.

Let's start with capacity. Currently Venezuela's production capacity stands at 2.6 million barrels a day, but since that number includes 1.1 million barrels a day being produced by the private companies that operate the joint ventures, it can be deduced that the PDVSA capacity is 1.5 million barrels a day, and that represents a severe drop of 1.8 million barrels a day since this government, the current government, has been in office. This is a result of poor management, weak technical capacity, and weak execution capacity, mostly deriving from the dismissal of 18,000 workers.

However, and I think this is a very important point, despite this diminished capacity during the 7 years of the current Venezuelan Government, oil from that country continues to flow to the United States at a rate of about 1.4 to 1.5 million barrels a day, in line with the tradition of many years of trade. I would argue that despite the aggressive political discourse against the U.S. Government, oil exports to this country have a high priority in the slate of Venezuelan sales.

As part of the political agenda, President Chavez continuously threatens the U.S. Government with suspending exports to the United States, and has indicated that those exports would most likely be diverted to China. This was mentioned by your colleague, Senator Nelson.

The 1.5 million barrels a day of Venezuelan oil imports into this country are the result of many dozens of contracts with clients in the United States that have been buying Venezuelan oil for decades. Many of those clients have refineries capable of processing sour and heavy feedstock, which constitutes the largest portion of Venezuelan oil.

The continuity of those exports to the United States is of utmost importance for Venezuela, despite anything that is contained within the political discourse of the Venezuelan Government. Exporting that oil to China is practically impossible, because the refining network in China is mostly primitive and incapable of receiving those volumes of sour and heavy crude.

It would take several years of bilateral, coordinated joint planning and investment to turn such an initiative into reality, and this, by the way, is not happening. And it would be absurd to build this capacity to export to China at the expense of the most profitable option for those exports, which is none other than the United States. It would take new oil to be developed for this initiative.

Nevertheless, in the unlikely event of a suspension of those shipments, Venezuela would have to sell the crude at other destinations, and oil being generally fungible, oil from other places would come to the United States shores. It would naturally generate logistical complications and at least temporarily increase costs, but eventually the necessary adjustments would take place and everything would return to normalcy.

It is true that imports of Venezuelan oil are very important to the United States, but it is a fact that Venezuela needs badly its oil exports to the United States, and especially the current government, in order to finance its huge expenses.

Finally, the threat of a shutdown of Citgo refineries occasionally included in the political speech of the Venezuelan Government is empty talk. Citgo operates through a network of some 14,000 retail outlets, but it does not own any of them. It only owns refineries, terminals, and pipelines. An arbitrary shutdown of Citgo refineries would imply breaching thousands of contracts without justification, posing an unmanageable and costly legal situation for Venezuela.

I would argue that the only risk represented by the present Venezuelan administration concerning oil supply to the United States is not current, it's not of today. It relates to frustrated expectations of building up new barrels in the future. This is a direct consequence of the diminished operational and financial capacity of the national oil corporation. In addition, plans and projects of expansion coming from private international companies operating in Venezuela are losing momentum as a result of the frequent changes of rules and the difficult surrounding environment these companies have to face, so a significant increase of that country's production is unlikely.

The second topic you assigned to me was resource nationalism. In the history of oil we will find a secular inclination of oil countries to get a larger share of the revenues. However, attracting the capital required has implied moderating that appetite in order to allow the oil companies to assume calculated risks and make an attractive profit.

The very high prices that we are seeing now have generated huge revenues, leading every oil country to consider ways of capturing a larger portion of the windfalls. Even the United States and the United Kingdom and Canada have discussed the idea of higher or new taxes. Despite the somewhat questionable justification of some actions aimed at changing taxes and contracts, the initiatives of seeking to renegotiate terms are understandable and are within the realm of manageable and acceptable. As a reference, in no country is resource nationalism stronger than in Saudi Arabia, yet it is perhaps the most reliable supplier in the world.

What is certainly unacceptable is to take actions like the recent unilateral expropriation of the hydrocarbons industry in Bolivia. The only other case in which we have seen abusive actions, never to that degree, of course, is in Venezuela.

In the case of Ecuador, for example, the government has insisted that the seizing by the government of Block 15 of Oxy should not be interpreted as equivalent to the Bolivian case. They argue that the affair is purely legal and related to an alleged violation of contract by the international oil company. Well, time will soon tell what is the case.

And the last point, and I'll try to be brief on this, that you assigned me was, what about opportunities for increased United States and Latin American cooperation?

And I would like to remind you that there was a spinoff of the Summit of the Americas in 1994. It was called Energy Integration of the Americas. A lot of work was carried out to try to identify barriers for a larger integration, like political hurdles, tariffs, quotas, logistics, and eventually undertake the necessary forums, with the ultimate objective of having a seamless energy platform that would benefit all countries and in addition facilitate and improve commercial activities.

We could say a lot more about this, but there is no time here. We can discuss as we go along, but my view is that salvaging the initiative of 1994 could be an excellent way of having a fresh start that should be in every country's best interest.

However, I am sure you will agree with me in stating that the dialog cannot compromise the basic principles of business, a market-based approach, public-private cooperation, respect for property rights and contracts, and the right balance among policy, regulations, and operations and business. Although this would probably mean that we would have a few casualties, because maybe some would not like to come to discuss under those terms, countries such as Brazil, Colombia, Chile, Peru, Trinidad-Tobago, and even Ecuador, could lead the way, together with the United States to the north, of course. Their leaders are thinking creatively, and have instituted effective measures to develop their respective resources in productive ways. The presence of Canada would certainly enhance the initiative.

There is no silver bullet here, but hard work along the described lines could translate into a more balanced and reliable regional energy network. This, by the way, would be entirely consistent with section No. 4 of the EDSA, Energy Diplomacy and Security Act, which refers to strategic energy partnerships.

Thank you very much, Mr. Chairman.

[The prepared statement of Mr. Giusti follows:]

PREPARED STATEMENT OF LUIS E. GIUSTI, SENIOR ADVISER, CENTER FOR STRATEGIC AND INTERNATIONAL STUDIES, WASHINGTON, DC

I. BACKDROP

As a result of the tightness of the oil market during the last 4 years, the world as a whole, and certainly the United States, has been affected by extremely high oil prices. This has a detrimental effect on our day to day, reflected by the prices we pay for gasoline and diesel at the pump, as well as heating oil and gas for our homes.

As a result, the discussion about oil independence has taken center stage in this country. But that independence (understood as self-sufficiency) is not the real issue. Not only because it is not feasible, but because the business of oil is global. The high prices of recent times result not from the large imports of oil into the United States, but from the fundamentals and perceptions of the global oil market.

It would take much longer than the time assigned to this testimony, to explain why and how we got to where we are today. However, it is worthwhile to point out briefly that today crude oil inventories in OECD are at a 20-year high and global inventories are at an 8-year high. The futures market has been in "contango" since October 2004 (meaning that future prices are higher than prompt prices), which has triggered sustained stockpiling. On the other hand, growth in demand for oil has been slowing down (3 million BD in 2004, 1 million BD in 2005, and 800,000 BD in the first half of 2006), indicating that the price is having an effect on consumption. Then, why are prices so high? The most important factor is the erosion of spare capacity. Having been large in the past (15 million BD in 1985, 9 million BD in 1991 and 8 million BD in 2002), it is now down to 2 million BD. A second factor is the tightness of the refining network in a time of strong demand for high quality refined products, which is driving prices up along the whole supply chain.

But, can we expect the future development of new large spare oil production capacity for us to feel comfortable again? Most likely the answer is "no," because with the exception of Saudi Arabia, nobody is planning to build it. The spare capacity enjoyed in the past was not planned for. It resulted from an overestimation of long-run demand. Inadvertently we developed a "comfort cushion." Perhaps the world will have to develop a new perspective of the meaning of inventories. Currently, global oil stock cover runs at 72 days (commercial stocks), which should be a strong reason for comfort. Maybe a somewhat larger stock cover will replace the absence of spare capacity. Additionally, the director of the IEA has gone to great length and efforts to convey the message that strategic stocks of OECD are enough to cover 18 months of an eventual absence of Iranian exports (2.7 million BD), but to little avail. In the event of a major disruption, how much a difference would it make between having say 76 days or 71 days of stock cover? That difference would be immaterial, but it can mark a difference of $4–$5 per barrel in today's oil market.

The conclusion is that the oil market is global and oil is generally fungible. For that reason, in analyzing supply stability it would be shortsighted to look at oil flows from Latin America into this country in isolation, or for that matter any other oil imports from other regions or countries. The United States will continue to be a large importer of oil and those imports can only increase. Stability and security will always depend on the global fundamentals, irrespective of where the imported oil comes from.

II. A BRIEF LOOK AT OIL AND GAS IN LATIN AMERICA

Following is a summarized description of the characteristics of the most important countries in connection with oil and gas in Latin America.

Chile

Chile has meager oil reserves of 150 million barrels, and its oil production is 18,400 BD, while its consumption is 225,000 BD, the deficit being covered by imports, mainly from Argentina and Brazil, but also from Nigeria and Angola.

Colombia

In 1999, oil production in Colombia stood at 820,000 barrels per day. However, as a result of lack of investment production, has fallen to 530,000 BD and the country faces a future sustained decline. Proven oil reserves have fallen to a very modest 1.6 billion barrels and proven gas reserves are scarcely 4 trillion cubic feet. Fears have risen that the country will become a net importer by 2010. On the other hand, more than 80 percent of Colombian territory remains unexplored and its basins hold a large hydrocarbons' potential (possible reserves have been estimated at 47 billion barrels), but for many years the country failed to attract new investment due to the poor internal security environment, coupled with unfavorable energy investment terms. Nevertheless, during the last 2 years the Colombian Government has turned the trend around by putting in place a much more attractive framework for investments in exploration and production. The most important reform was the creation of a regulatory agency (Agencia Nacional de Hidrocarburos), in charge of regulation and administration. A large portion of Ecopetrol's portfolio was carved out and assigned to the agency. This new framework plus a more attractive model for investment, in addition to the much improved political stability and security resulting from the effective policies of President Uribe, have oil companies flocking to the country. It should be expected that very soon Colombia would become a producer of growing importance in the region and perhaps an important oil exporter.

Peru

Peru's oil reserves are very small at 253 million barrels and it barely produces 100,000 BD, while it consumes 160,000 BD. But it is rich in free gas reserves, with some 16 Tcf. These reserves will be tapped by the Camisea project, the most ambitious project in the history of Peru. Consisting of the extraction, transportation, and distribution of natural gas, this project is a fundamental factor of Peru's energy strategy. By tapping into a reliable, low-cost energy source, Camisea will not only provide direct benefits to electricity end-users, but it will also improve the country's competitiveness and increase its technical capacity. The project will help alleviate Peru's trade deficit by converting the country from energy importer into an exporter by 2007. Direct investment in the project will be around $2 billion. Part of the gas volume will go as LNG to the North American west coast.

Trinidad—Tobago

Unlike the rest of the islands in the Caribbean basin, Trinidad/Tobago is hydrocarbon rich and is the largest producer of oil and natural gas in the region. Oil reserves are a modest 1 billion barrels and oil production is 130,000 BD, but gas reserves are 26 Tcf and current gas production is 2,700 MMcfd. Since the 1970s, Trinidad/Tobago has embarked in several successful initiatives that have expanded its local gas industry as part of a government strategy to promote industrialization. Its large natural gas reserves have enabled the country to become the most industrialized in the Caribbean. The energy sector represents 72 percent of total exports, and the country's political stability and attractive geology, as well as its proximity to the high demand United States, Latin America, and Europe, have supported high levels of foreign direct investment. The country has established a large LNG infrastructure and today has three liquefaction trains with 10 mtpa, plus a fourth one about to come on stream. Immediate plans contemplate building two additional trains. Together with Nigeria, Trinidad/Tobago dominate the Atlantic LNG market.

Brazil

Brazil has a population of 175 million, fifth largest in the world and its economy of $452 billion is the 13th in the world. After years of efforts in exploration, mostly offshore, Brazil has reached an oil production of 2.0 million BD. However, its sustained economic growth has increased oil demand to a level of 2.2 million BD, with the deficit covered by imports from Africa, the Middle East, and minor volumes from Argentina. Great credit for the large increase in oil production goes to its national oil company Petrobras, which has become a world class oil company and a leader in deep water drilling. In recent years, the company has gone international in E&P. Current oil reserves stand at 11 billion barrels. Its gas reserves are a modest 8.8 Tcf, with production of 1,100 MMcfd being less than the 2,300 MMcfd of demand. The deficit is covered by imports from Bolivia and Argentina.

The recent actions by the Bolivian Government cast shadows over the longer term gas trading to Brazil, a country that will very likely be looking for alternatives, including LNG imports. An additional highlight is that the country is the world's largest producer and exporter of ethanol. Over half of all cars in the country are flex fuel, meaning they can run on 100 percent ethanol or on an ethanol-gasoline mixture. Ethanol in Brazil is made from sugarcane, which prospers in the country's tropical climate. The current high prices of oil, natural gas, and hydrocarbon products have prompted the government to mandate all gasoline for domestic consumption to contain 25 percent ethanol. Also, Brazil has plans for sizable nuclear developments. Two plants are already in operation and a third one is under construction. There is a large accumulation of stranded gas in the north, in a place called Urucu. The hydrocarbons industry in Brazil is well organized, with a strong institutional framework, including a regulatory agency. Practically every big international oil company has acreage and/or other interests in the country. This has been crucial for supplying the needs of a very large country, although great challenges lay ahead.

Argentina

Argentina has oil reserves of 2.7 billion barrels and it produces 700,000 BD, while oil consumption is 400,000 BD (41 percent of primary needs). Oil exports are important for the country, but marginal in a worldwide context. They essentially go to Brazil and Chile. The country is long in natural gas, with reserves of 21 Tcf. It produces some 4,400 MMcfd, enough to supply its domestic needs (45 percent of primary energy) and to export some volumes to Uruguay and Chile. However, it imports some gas from Bolivia, for geographic/logistical rehaznos, and in recent times its policies have slowed down investments affecting gas exports.

Bolivia

The third poorest nation in the hemisphere behind Haiti and Nicaragua, holds oil reserves of 440 million barrels and produces 42,000 BD. However, it is very long in natural gas with reserves 54 Tcf (30 Tcf proven and 24 Tcf probable). Despite those huge reserves, gas production stands at 1,500 MMCf/d and investment has slowed down to a trickle and some companies are leaving due to an insecure and arbitrary operating environment. The most recent actions of expropriation of the oil industry may prove to be the last nail in the coffin for the possibilities of a large-scale gas development. This can be considered a tragedy. A combination of ignorance and populism has led to a rejection of foreign investments, and there is virtually no credible alternative scenario whereby Bolivia would be able to grow economically without exploration, production, and export of its natural gas reserves.

Ecuador

The country holds oil reserves of 2.5 billion barrels and oil production is 550,000 BD, two thirds of which go to the export market. This is a marginal number in a worldwide scale, but it is of fundamental importance for the future of Ecuador. Gas reserves stand at a meager 0.4 Tcf. This country is also seeing international energy investors depart because an unfair and arbitrary investment climate, in addition to excessive bureaucracy and political volatility.

Mexico

Mexico has a population of more than 100 million and its economy is the number 10 in the world ($640 billion). It has benefited immensely from its partnership in NAFTA. It has the fourth largest oil reserves in the hemisphere (oil 12 billion barrels and gas 15 Tcf) and currently produces 3.5 million BD. It is the third supplier of crude to the United States, behind Canada and Saudi Arabia. However, its reserves are plummeting and it is forced to import billions of dollars of gasoline and natural gas. Despite having possible oil reserves of 50 billion barrels, the lack of investments is leading the country to a short-term demise as an oil exporter. This is the direct result of a combination of heavy dogmatism and populism, that has dominated the political landscape for decades. The last two governments have struggled to open the energy sector to private investments, with only modest political progress, although the magnitude of the eventual collapse of the oil industry is beginning to change the minds of many politicians.

Venezuela

The country remains the most important oil and gas country in the hemisphere, with 78 billion barrels of oil reserves, 150 Tcf of natural gas (although only 15 Tcf are of free gas), and some 220 billion barrels reserves of extra-heavy oil in the Orinoco Belt. After the sustained increase in production capacity to 3.5 million BD during the 1990s, the country has suffered a major setback resulting from political instability and arbitrary management of the oil industry. In addition, frequent changes of the rules and several international arbitration lawsuits have instilled confusion and uncertainty in the international oil companies partnering with PDVSA in Venezuelan territory. As a result, oil production capacity has fallen to 2.6 million BD, despite an increase of 1.1 million BD resulting from the contracts with private companies that were put in place in the previous administration. Unless the prevailing uncertainty and the frequent obstacles posed by the government can be diffused, Venezuela will undoubtedly continue being important, but its growth as an oil exporter will only be marginal (see the following point).

III. RELIABILITY OF SUPPLIES FROM VENEZUELA

Oil production capacity in Venezuela has suffered a severe drop in the past few years. In February 1999, when the current government took office, that capacity stood at nearly 3.5 million BD. At that moment, already some 200,000 BD were operated by private oil companies as part of the new contracts signed for joint operational agreements and strategic associations. Thus, the capacity of PDVSA proper was some 3.3 million BD. Currently, Venezuela's production capacity stands at 2.6 million BD, but since that number includes 1.1 million BD being produced by the private companies that operate the joint ventures, it can be deduced that PDVSA's capacity is 1.5 million BD, i.e., a drop of 1.8 million BD. This is the result of poor management and weak execution capacity, mostly deriving from the dismissal of 18,000 workers.

However, during the 7 years of the current Venezuelan Government, oil from that country continues to flow to the United States at a rate of 1.4–1.5 million BD, in line with the tradition of many years of trade. I would argue that despite the aggressive political discourse against the United States Government, oil exports to this country seem to have a high priority in the slate of Venezuelan sales.

As part of the political agenda, President Chavez continuously threatens the U.S. Government with suspending exports to the United States, and has indicated that those exports would most likely be diverted to China. But, as you very well know, the U.S. Government does not own terminals, refineries, pipelines, or distribution networks. In fact, it does not even buy oil, with the exception of the occasional program of royalties in kind. The 1.5 million BD of Venezuela oil imports into this country are the result of many dozens of contracts with clients in the United States that have been buying Venezuelan oil for decades. Many of those clients have refineries capable of processing sour and heavy feedstock, which constitute the largest portion of Venezuelan oil. The continuity of those exports to the United States is of utmost importance for Venezuela, despite anything that is contained within the political discourse of the Venezuelan Government. Exporting that oil to China would be practically impossible, because the refining network in China is mostly primitive and incapable of receiving those volumes of sour and heavy crude. It would take several years of bilateral coordinated joint planning and investments to turn such an initiative into reality (it is not happening), and it would be absurd to build it at the expense of the most profitable option for those exports, which is non-other than the United States market. Add to that the volumes that go to Citgo, a subsidiary of PDVSA, and it is highly unlikely that there would be any disruption of Venezuelan exports to the United States. Nevertheless, in the unlikely event of a suspension of those shipments, Venezuela would have to sell the crude at other destinations, and oil being generally fungible, oil from other places would come to the U.S. shores. It would naturally generate logistical complications and at least temporary increased costs, but eventually the necessary adjustments would take place and everything would return to normalcy. It is true that imports of Venezuelan oil are very important to the United States, but it is a fact that Venezuela needs badly its oil exports to the United States, and especially the current government in order to finance its huge expenses.

Finally, the threat of a shutdown of Citgo refineries, occasionally included in the political speech of the Venezuelan Government is empty talk. Citgo operates through a network of some 14,000 retail outlets, but it does not own any of them. It only owns refineries, terminals, and pipelines. An arbitrary shutdown of Citgo refineries would imply breaching thousands of contracts without justification, posing an unmanageable and costly legal situation for Venezuela.

The only real risk represented by the present Venezuelan administration concerning oil supplies to the United States is not current. It relates to frustrated expectations of building up new barrels in the future. For the past 6 years the Venezuelan Government and PDVSA have been announcing ambitious (normally not viable) expansion plans of the country's production, but nothing significant happens. This is a direct consequence of the diminished operational and financial capacity of the national oil corporation. In addition, plans and projects of expansion coming from private international companies are losing momentum, as a result of the frequent changes of rules and the difficult surrounding environment they have to face. So a significant increase of that country's production is unlikely.

These opinions are entirely consistent with the ones I have expressed in my public writings and interviews, and which I gave to representatives of GAO with whom I met for some 4 hours as part of their work in putting together their report for Senator Lugar.

IV. RESOURCE NATIONALISM IN LATIN AMERICA

The term "resource nationalism" is in hot vogue these days. But what does it really mean? If what we have in mind is the seizing of higher revenues, we should not forget that in the history of oil we will find a secular inclination of oil countries to get a larger share of the revenues. However, attracting the capital required has implied moderating that appetite, in order to allow the oil companies to assume calculated risks and make an attractive profit.

In recent times, the price of oil has reached extremely high levels, but most importantly levels that no one would have expected only 4 years ago (in early 2002 price predictions for the year were $22–$23 per barrel, and OPEC had agreed to a ceiling of 21.7 million BD in anticipation of a very soft market). These very high prices have generated huge revenues, leading every oil country to consider ways of capturing a larger portion of the windfalls. Even the United States and the United Kingdom have discussed the idea of higher or new taxes. Despite the somewhat questionable justification of any actions aimed at changing taxes and contracts, the initiatives of seeking to renegotiate terms are within the realm of the manageable and acceptable.

What is certainly unacceptable is to take actions like the recent unilateral expropriation of the hydrocarbons industry in Bolivia. I do not intend in these lines to address the implications of that case, which are well known by the distinguished Senators present here. The only other case in which abusive actions have been undertaken by a government is in Venezuela, although it has never gotten to the extremes of unilateral expropriation.

In the case of Ecuador, the government has insisted that the seizing by the government of Block 15, formerly in charge of Oxy, should not be interpreted as equivalent to the Bolivian case. They argue that the affair is purely legal and related to an alleged violation of contract by the international oil company. Despite a very poor sense of timing to say the least, coming in the middle of discussions of a FTA with the United States, and without taking sides, it looks like it could in fact be an isolated case. Time will soon tell.

In Colombia, Peru, Brazil, and Trinidad-Tobago, there are no indications whatsoever of anything similar to the case of Venezuela, and much less to the case of Bolivia. Mexico is a special case in its own characteristics. Finally there is Argentina, but I am sure that my friend Domingo Cavallo, will give you an accurate picture of that case.

V. OPPORTUNITIES FOR INCREASED UNITED STATES-LATIN AMERICA COOPERATION ON ENERGY SECURITY (GOVERNMENTS AND PRIVATE SECTOR)

In 1994, as a spin-off from the Summit of the Americas held in Miami, an initiative called "Energy Integration of the Americas" was installed. Its objective was to build an integrated energy data bank, evaluate existing interconnections among the countries, identify barriers for a larger integration (political hurdles, tariffs, quotas, logistics, etc.), and eventually undertake reforms and agreements, with the ultimate objective of having a seamless energy platform that would benefit all countries, and in addition facilitate and improve commercial activities. The initiative, which involved the public and the private sectors of each one of the countries of the American hemisphere, was launched in Washington and was followed up with working meetings in Santa Cruz, Bolivia and in Caracas, Venezuela. One of the relevant features of the existing network is that while North America has a large deficit of oil, Canada and Latin America have large surpluses of energy resources, which if developed efficiently and effectively, can be a leading engine of regional development and an important contributor to global competitiveness. However, in the next few years the initiative lost momentum and eventually faded out.

The evolution of the energy landscape in the past few years has once again brought to the fore the importance of the subject. In the words contained in a recent report published by the Council of the Americas, if geography is destiny, the Americas are ripe for development of an energy partnership benefiting both suppliers and consumers, while linking the economies of the countries and increasing trade. The report continues to argue that the entire Western Hemisphere stands to gain if energy partnership is pursued, assuming the implementation of terms and conditions consistent with a market-based, public-private approach to energy sector development. Beyond politics, the key questions center on the ability to raise and utilize effectively the massive amounts of increased investment required to develop the resources that already exist. Fundamentally, unless investment climates are improved in the energy sector and elsewhere, investors will continue to look to other markets as opportunities with greater interest than the Americas. Without necessary investment, reserves will be depleted, imports into the region will increase, and terms of trade will deteriorate. My view is that salvaging the initiative of 1994 could be an excellent way of having a fresh start that should be in every country's best interest. However, the dialog cannot compromise the basic principles of business, a market-based approach, public-private cooperation, respect for property rights and contracts, and the right balance of policy–regulation–operations/business. Although this would probably mean losing a few significant actors, countries such as Brazil, Colombia, Chile, Peru, Trinidad-Tobago, and even Ecuador could lead the way. Their leaders are thinking creatively and have instituted effective measures to develop their respective resources in productive ways. The presence of Canada would certainly enhance the initiative. There is no silver bullet, but hard work along the described lines could translate into a more balanced and reliable regional energy network.

VI. REFERENCE

Council of the Americas' Energy Action Group, Energy in the Americas—Building a Lasting Partnership for Security and Prosperity (Washington, DC: Council of the Americas, October 2005), 6–8.

The CHAIRMAN. Well, thank you very much, Mr. Giusti.

I would like to call now on Mr. Carvalho.

STATEMENT OF EDUARDO PEREIRA DE CARVALHO, PRESIDENT, BRAZILIAN ASSOCIATION OF SUGAR CANE AND ETHANOL PRODUCERS, SAO PAULO, BRAZIL

Mr. DE CARVALHO. Thank you, Mr. Chairman, honorable Senators. Thank you for the honor and privilege to address this committee.

We are living in a changing era for energy, given environmental imperatives and security of supply of fossil fuels. Two countries, the United States and Brazil, emerge in a privileged position to develop ethanol as an octane booster or a gasoline enhancer or even as its perfect substitute.

There will be no silver bullet, as my colleague has said, to petroleum substitution. But, and I quote, "Biomass ethanol is the best alternative to partially replace oil derivates in the next decades, considering consumers acceptability and strategic considerations," as declared recently by none less than Shell International.

Brazil's large experience with ethanol has been developed over the last 30 years, not only in high blending volumes but also in 100 percent ethanol-dedicated cars, or in its present version of flex fuel vehicles. This was possible due to the gradual setting of a huge infrastructure for ethanol distribution, whereby all of the more than 33,000 gas stations all over the country have at least one dedicated pump for E100 fuel.

At the same time, the United States has been expanding its own ethanol production at an astonishing growth rate of about 20 percent a year, consistent with public policies established to increase its consumption to 7.5 billion gallons in 2012, but its potential use can be much more ambitious. Today, the combined ethanol production of the United States and Brazil of around 9 billion gallons accounts for less than 2 percent of the total world consumption of gasoline. Could we think of a potential market for ethanol of 49 times the present production?

Brazil has been working to promote the global market for ethanol. In order to achieve this growth, we consider that it's important to launch a Brazil-United States partnership. Brazil and the United States account for 70 percent of world ethanol production. In our view, there is not going to be a global market until we see ethanol being produced and consumed in many countries. We need more players. Such partnership between our two countries could pursue goals such as common standards, technical cooperation, common research projects and, above all, joint efforts to promote ethanol in third markets.

Therefore, let me be very clear on this point. The Brazilian private sector does not have any goals of displacing the domestic ethanol industry in the United States. We realize that a thriving ethanol industry in the United States is of enormous importance to consolidate a global market for ethanol. In this spirit, I repeat, we do not think that it would be in our own interest to displace domestic production in the United States, our goal being complement it and/or displace oil imports.

Within the spirit of such a desirable partnership, it's important to point out that autarkic development in renewable fuels contradicts the framework of a free and global trade in fossil fuels. The present tariff and other duties on imported ethanol in the United States are an obstacle to an even more aggressive market expansion, and certainly an inducement to higher prices than those that could prevail in more liberalized conditions.

Is Brazil able to contribute, with its vast potential, to a larger ethanol market? Certainly.

Let us consider, first, the necessary acreage for it. Today, no more than 7.5 million acres are used to produce 4.5 billion gallons of fuel in Brazil, but we have in Brazil more than 250 million acres that can be taken as a potential area to expand agriculture, respecting all preservation areas, especially the rain forests. Current expansion programs suggest a production level of 8 billion gallons by 2011, based on our domestic market, mainly induced by the spectacular acceptance of flex fuel vehicles, and some moderate growth assumptions on exports.

The search for alternative fuels must be based on their economic, environmental, and social sustainability. Economically speaking, Brazilian sugarcane ethanol is already competitive with any gasoline obtained from $40-a-barrel crude, without any form of subsidy either in agriculture, industry, or to the consumer.

Sugarcane ethanol is a most efficient instrument to sequester carbon dioxide in the atmosphere and consequently mollify the serious threat of global warming. For each unit of fossil fuel consumed in the whole process of production, sugarcane ethanol generates 8.3 units of renewable energy.

The social dimension is shown by the high rate of employment generation, turning the areas with sugarcane cultivation into one of the most developed areas within the country, the highest wage paid in the agriculture sector, the best social conditions, education, health, and so on. There is every reason, Mr. Chairman, to believe that the conditions created in Brazil can be replicated as well in the tropical regions of the world, benefiting hundreds of millions of people, especially in Latin America, Africa, and Southeast Asia.

A freer trade policy regarding ethanol in the United States would enhance the potential of not only much more ambitious goals to gasoline substitution, but also prevent and smooth out possible price peaks and pressures. Additionally, it could induce effective changes in the process of economic development of a vast number of underdeveloped and developing nations.

In short, free markets and fair systems to govern them need to be recognized as powerful instruments to secure a balanced supply of renewable fuels in the near future, and Brazil and the United States would have much to gain by joining forces to globalize ethanol as an energy commodity.

Thank you, Mr. Chairman.

[The prepared statement of Mr. de Carvalho follows:]

PREPARED STATEMENT OF EDUARDO PEREIRA DE CARVALHO, PRESIDENT, BRAZILIAN ASSOCIATION OF SUGAR CANE AND ETHANOL PRODUCERS, SAO PAULO, BRAZIL

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There will be no "silver bullet" to petroleum substitution. But, "biomass ethanol is the best alternative to partially replace oil derivates in the next decades, considering consumers acceptability and strategic considerations" as declared recently by none less than Shell International.

Brazil's large experience with ethanol has been developed over the last 30 years. Not only in high blending volumes, but also in 100 percent ethanol dedicated cars, or in its present version of flex fuel vehicles. This was possible due to the gradual setting of a huge infrastructure for ethanol distribution, whereby all of the more than 33,000 gas stations all over the country have at least one dedicated pump for E100 fuel.

At the same time, the United States has been expanding its own ethanol production at an astonishing growth rate of around 20 percent a year, consistent with public policies established to increase the consumption to 7.5 billion gallons in 2012. But its potential use can be much more ambitious. Today, the combined ethanol production of the United States and Brazil, of around 9 billion gallons, accounts for less than 2 percent of the total world consumption of gasoline. Could we think of a potential market for ethanol of 49 times the present production?

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Certainly.

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The search for alternative fuels must be based on their economic, environmental, and social sustainability. Economically speaking, Brazilian sugarcane ethanol is already competitive with any gasoline obtained from a $40 barrel of crude, without any form of subsidy—either in agriculture, industry, or to the consumer.

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In short, free markets and fair systems to govern them, need to be recognized as powerful instruments to secure a balanced supply of renewable fuels in the near future. And Brazil and the United States would have much to gain by joining forces to globalize ethanol as an energy commodity.

Thank you.

The CHAIRMAN. Well, thank you very much, Mr. Carvalho, for that important visionary statement and agenda that you presented.

I would like to call now upon Mr. Goldwyn.

STATEMENT OF HON. DAVID L. GOLDWYN, PRESIDENT, GOLDWYN INTERNATIONAL STRATEGIES, LLC, WASHINGTON, DC

Mr. GOLDWYN. Thank you, Mr. Chairman. Mr. Chairman, members of the committee, it's a pleasure to be here.

I think, without a doubt, the erosion of U.S. power and influence around the globe due to our dependency and that of our allies and our competitors on oil is the key foreign policy challenge of our time. I commend the chairman and the committee for a comprehensive and a sustained and very responsible approach to this issue, and it gives me hope that maybe this time we'll actually do something about it.

With respect to the hemisphere, I would say that the energy trends in the hemisphere are mixed, but overall investment is declining, production is flattening, and resource nationalism is rising in the key producing nations. With respect to our diplomacy in the region as you have focused on it, it's increasingly confined to North America. Most of our longstanding bilateral and multilateral energy dialogs are dormant, and we have no strategic engagement on energy with two of the most important producers, Venezuela and, of course, Brazil.

But the key foreign policy issue that results from all this is that U.S. influence in the hemisphere is declining fast. I share the chairman's vision that we need a fresh approach to energy diplomacy in the hemisphere, and I think the Energy Diplomacy and Security Act provides a terrific framework for this kind of approach.

But, in addition, I think the United States has to enhance its energy security by engaging the region on the issues that concern its people, and those are the issues of job creation and poverty alleviation, migration, and trade promotion. An asymmetrical approach, one that focuses on a broad range of issues rather than just energy security, may pay great dividends in energy security, more than one that's just focused on energy. I think the "energy for development" component of the EDSA is a good example of how to leverage this asymmetrical approach.

So this morning I'm going to talk very briefly about the trends in the hemisphere, how and why they negatively impact our foreign policy that's driving this, and then, what we should do about it.

In terms of the hemisphere itself, I think as my colleagues have said this morning, there's no question that Latin America is a key component of United States energy diversity. We don't have a whole lot of diversity from the Middle East if we don't have the supply from this hemisphere. It's much more important even than Africa in that context. There's no getting around its importance. Also, they are close by and, as Luis has said, deeply integrated into the U.S. system.

We're seeing two trends now. One is the rise in state control, and that's in Venezuela and Bolivia, Ecuador, and as the former finance minister has said, what happened to Argentina in 2002. And there we're seeing investment leave those countries, we're seeing production flatten.

But the other trend is toward a market model, and there I think we have to acknowledge Brazil's tremendous success, Colombia's, and Peru's. Brazil has gotten a lot of credit for being self-sufficient in oil because of ethanol, but they increased their production by 1 million barrels a day over 10 years, and that has an equal or greater effect on their self-sufficiency.

But the problem is, since the greatest producers are Mexico and Venezuela, the net effect is negative, and that's a problem. Why is that a problem, and why do we care? Well, there are economic reasons why these trends are bad. Obviously, it's bad for the shareholders of U.S. companies when their profits get cut significantly, and when production flattens, it puts long-term pressure on oil prices.

But the real consequence that we need to worry about is the foreign policy impact, and there we're seeing a growing rejection of free markets, an erosion of democratic structures in a lot of countries, and the decline of U.S. influence in the region. What's new about this is that for the first time since the fall of the Soviet Union, the United States has a political and ideological competitor in Hugo Chavez, and a competitor that is well financed with oil wealth and very creative about how they're competing with us.

I would argue that this trend is reversible, and that U.S. alliances can be expanded and restored, if we are prepared to engage the hemisphere with respect and creativity on the issues that matter to the hemisphere. But we have to compete, and right now I would argue in Latin America we're not even on the field.

Some examples of how our influence is declining: First, polls show our image is at a historic low in the hemisphere. Anti-United States rhetoric is up. Support for liberalized markets and free trade is declining. The FTAA is pretty much dead in the water. The 2005 Mar de Plata Summit of the Americas couldn't even produce a consensus statement. We have suspended our military cooperation with 10 countries because they don't conform to our orthodoxy on the International Criminal Court. We couldn't get support, probably for the first time in our history, on a candidate for the Secretary General for the OAS, and we're actually not doing so well on who the next Latin American candidate is on the Security Council, either.

A greater concern is that as these populist regimes take power, democratic structures are eroding. By democratic means, referenda and other things, the political space is eroding. Space for political opposition is disappearing as referenda create more and more restrictive rules for how these governments govern. And our institutions like IRI and NDI, which have been great ways to build party opposition, are basically no longer welcome in these countries. These internal governance issues need to be the focus of our policy.

Now, why is this happening? There are really three reasons. Some of this is self-inflicted wounds from U.S. diplomacy, some of it is internal, and some of it is energy. I think we have to acknowledge the self-inflicted wounds of U.S. diplomacy in the hemisphere. We don't pay attention to Latin America because of Latin America.

Our policy in Latin America has primarily been about counternarcotics. When we had close ties with regimes that marginalized their own indigenous populations, we didn't pay a whole lot of regard to it, and now they're in power, and guess what? They don't like us too much. It's actually ironic because we provided a lot of support for political parties in these countries, particularly in Bolivia, and by empowering them and teaching them how to participate in the process, they are now in power, but our support has not been very well recognized.

Our image is also declining because of policies in other places in the world, no doubt in the Middle East, and things like Guantanamo and Abu Ghraib have hurt our image in the hemisphere. Our direct assistance for things like child survival is declining for budgetary reasons, so we're viewed as being insensitive to the region's concerns.

But there are lots of internal reasons also, and that's that trade liberalization and GDP growth have not led to poverty alleviation or the inclusion of excluded minorities in countries like Venezuela, Bolivia, Ecuador, and Peru. That has led to a rejection of markets and the Washington consensus. That doesn't mean that it's bad, but it means that we haven't really looked at all the consequences of what those countries actually experienced.

Another reason is that their populations are growing, they need more money, and guess where they go. They go to oil revenues because that's the greatest source. And, as Luis has said, the United States, the United Kingdom, Canada, lots of people are raising taxes.

But the new piece and the piece of most concern is the competition from Venezuela. Hugo Chavez is not the first hemispheric leader to try and compete with the United States or demonize us to increase his popularity, but he's the best financed, and rarely has the United States been so destructive and inept in our own way of competing with someone.

I think we have to be careful here not to dismiss the reasons why Hugo Chavez came to power, or to exaggerate the potency of his model in other places in the region. What does have to concern us is that Venezuela is trying to export this model to other countries, and they're being clever about it.

In places where trade liberalization has hurt a country—we do a trade deal with Colombia, we wipe out the Bolivian soybean market. What's U.S. policy? Let the market provide. What's Venezuelan policy? We'll buy your soybeans. It's clever.

On the days when U.S. oil companies are here testifying about how Congress needs to deal with low income heating assistance programs, what does President Chavez do? He decides to provide heating oil to Northeast communities. It's clever.

They have also capitalized on these differences in the regions by offering subsidized energy products in cooperation and joint investment to the rest of the region. And I think the jury is frankly out on whether this model will be of appeal, whether anybody wants their investment, but everyone will take cheap oil and the cheap products.

So the question is, what are we doing to compete? What are we doing to defend our model? What are we doing to try and improve our own brand in the hemisphere? And here I think we need to do a couple of things.

I think the Energy Diplomacy and Security Act is a terrific framework. We have to care about energy. We have to focus on the region. We have to build up our frameworks in the hemisphere. And I would just argue, as I have in my written testimony, that we have to have the flexibility to allow us to do this at the subregional level as well.

But we need a positive agenda in the hemisphere. We really need one that recognizes the need to improve education and infrastructure, that addresses the negative social impact of trade liberalization, and that offers the respect and cooperation of the United States to the countries that work with us. I think this is going to advance our interests no matter what the price of oil is.

We need to address issues like poverty. We can do a lot of things. One is on trade liberalization. We ought to think about lifting that tariff on Brazil and developing that market. We have to show there are rewards for these kinds of exports. We can improve the visa process for people who will be the future leaders of these countries. We could improve our military cooperation with the region's militaries, without this orthodoxy; and deal with migration with Mexico, which is obviously important to them. We can support World Bank and Inter-American Development Bank programs on things like bringing electricity, particularly rural electrification, in the region. This is stuff that people care about, and like the Alliance for Progress that the Senators talked about earlier, it shows that we actually care about their welfare. It's a positive agenda.

I think we can also do things like compete in areas where we have adversaries. In Venezuela and Bolivia, we should not abandon the field. We should not reduce our diplomacy. We should not reduce our engagement. We should ratchet it up, because we have something to say and we should defend it. And Venezuela, hopefully we'll talk about it in the question and answer period, but there too I think we ought to end the dialog through the media, talk directly, and reengage.

Overall in the hemisphere, dialog and diplomacy will be the important means to try and address energy security in the hemisphere. But more than the dialog, we really have to have the product, we really have to have the substance, and that's where I think we need this asymmetrical approach that addresses a broader range of issues.

Thank you.

[The prepared statement of Hon. Goldwyn follows:]

PREPARED STATEMENT OF HON. DAVID L. GOLDWYN, PRESIDENT, GOLDWYN INTERNATIONAL STRATEGIES, LLC, WASHINGTON, DC

Mr. Chairman and members of the committee, it is an honor to speak with you today about the intersection between growing resource nationalism in Latin America and the erosion of United States influence in the hemisphere. The energy trends in the hemisphere are mixed, but overall investment is declining, production is flattening, and resource nationalism is rising in some key producing nations. United States energy diplomacy is increasingly confined to North America. Most of our longstanding bilateral and multilateral energy dialogs are not functioning. We have no strategic engagement on energy with two of the three key producers: Venezuela and Brazil. U.S. influence in the hemisphere is declining fast. The United States needs a fresh approach to energy diplomacy in the hemisphere. The Energy Diplomacy and Security Act (EDSA) provides an excellent framework for such an approach. In addition, the United States will enhance its energy security by engaging the region on issues that concern its people: job creation, poverty alleviation, migration, and trade promotion. An asymmetrical approach, one that addresses a broad range of issues rather than just energy security, may pay dividends equal to or greater than one focused solely on energy. The "Energy for Development" component of the EDSA is an excellent example of this kind of approach. EDSA should also, however, ensure that the United States has the flexibility to utilize subregional energy dialogs and that any new framework strengthens, rather than weakens, the energy diplomacy mission of the Department of Energy. I will discuss current energy trends in the hemisphere, their impact on U.S. foreign policy, the status of existing energy security dialogs, and the utility of a fresh approach, with a specific focus on EDSA.

I. THE IMPORTANCE OF THE HEMISPHERE

Latin America is a strategic region for United States foreign policy for many reasons. We are neighbors, trading partners, investment partners and we share deep family and cultural ties. The hemisphere is democratic, with one notable exception. In the energy sphere, the hemisphere provides the United States with a large portion of our diversity of oil and gas supply. For this reason, the failure of the hemisphere to realize its potential for growth is a serious concern for U.S. and global energy security. Latin America is far closer to the United States market than the Middle East. While the investment climate in key Latin American countries is deteriorating as state control increases, even in Venezuela access to exploration acreage remains superior to that in the Middle East. Additionally, the non-OPEC producers in this region exert counterpressure on OPEC's monopoly power.

Mexico and Central and South American nations delivered nearly 14 percent of global oil production in 2005, and possess approximately 9.7 percent of global oil reserves, with 6.5 percent in Venezuela and 1.1 percent in Mexico alone. The region is also a major refining center, with nearly 9.2 percent of the world's refining capacity. Regional refineries are designed to serve the specialized needs of U.S. markets. The most important exporters, Venezuela and Mexico, consistently rank in the top four sources of United States oil supply along with Canada and Saudi Arabia. Venezuela averaged 1.29 million barrels per day (m/bpd) in 2005; Mexico averaged 1.59 m/bpd in that year.

II. ENERGY TRENDS IN THE HEMISPHERE

In Latin America today we see two trend lines. One trend is toward rising state control of energy resources—in Venezuela, Argentina, Bolivia, and Ecuador, in particular. The concern here is that this trend will limit the growth of global supplies of oil and gas by undermining the value of existing investments, discouraging future investment or barring foreign investment altogether. The economic consequence of these trends is that the hemisphere will contribute less to the diversification of oil supply, thereby increasing the importance of OPEC supply and over time undermining economic development in the region. The political consequences of these trends in the short run are the decline of U.S. influence in the region to competing ideologies and the erosion of democratic structures.

A second trend is toward creative fiscal regimes that welcome foreign investment and require state-owned companies to compete with international companies, with independent regulators that promote fair and efficient regulation. Countries observing this model are increasing production or stalling the decline of existing reserves. Brazil, Colombia, Trinidad and Tobago, and Peru are key examples of this creative model.

When we consider that Mexico, so far, continues to bar foreign investment in its upstream oil and gas sector, and the size of the reserves and production of the countries practicing the resource nationalism model, the net effect is negative. Foreign investment in the oil sector is shifting away from South America to North America, particularly to Canada's oil sands. When we compare 2005 to 2004, only Brazil and Trinidad managed to increase production significantly, while other countries faced decline or very modest gains.

A. The rise in state control

Venezuela and Mexico are the most important oil exporters in the hemisphere. While Brazil, Colombia, Ecuador, and Argentina are important destinations for foreign investment, and helpfully produce enough oil to meet their own domestic needs and make some contribution to the global export market, they are not strategic suppliers to the global market at this time. Only Mexico, Brazil, and Venezuela produce more than a million barrels per day. Bolivia has enormous gas reserves, but exports mostly to Brazil and modestly to Argentina. Only Trinidad and Tobago is a key supplier to the world gas market.

From those countries now committed to increasing state control, the United States faces two key challenges: The loss of production growth and diversity of supply from the region if new economic frameworks are unattractive to foreign investors and, most critically, the loss of United States influence from well-financed political competition.

The economic impact of rising state control

The recent wave of changes in contractual terms and dramatic changes in tax regimes in Venezuela, Bolivia, Ecuador, and in recent years Argentina, threatens to slow new investment and eventually deepen instability and poverty in these nations as well as destroy shareholder value for the companies invested there. The deterioration in the investment climate for energy in these countries is primarily an economic threat, helping to lock in constrained supply and high prices. We are seeing the revision of economic terms at a time when producers rather than companies hold more market power.

Venezuela passed a hydrocarbons law that mandated a 51 percent share by the national oil company and a higher royalty rate. Operations, such as those under Operating Service Agreements, which may have stretched the legal interpretation of the law when they were begun, were subject to a strict and adverse legal interpretation when they appeared to be poor earners for the government. Taxes once renounced, like the export tax, have been revived so that the government can earn, in essence, a fixed 33.33 percent royalty. The impact, according to expert analysts like Deutche Bank and Wood Mackenzie, is a massive flight of investment capital from Venezuela's heavy oil sector to Canada's oil sands, effectively freezing development of the hemisphere's largest oil reserves during one of the greatest oil booms in history.

In Bolivia, President Evo Morale's May 1, 2006 decree declared that the state would take control of all gas fields. Royalty payments to the Bolivian Government at the largest gas fields, including San Alberto and San Antonio, will now increase from 50 percent to 82 percent. All producers are obliged to sell at least 51 percent of their holdings to the Bolivian Government, with the value of that share to be assessed by audit and negotiation. The state will take 60 percent of production from other fields. Bolivia has left itself an open door through which it can compromise or retreat: Details of new contracts are to be worked out on a case-by-case basis. But companies were given only 6 months to renegotiate contracts or be expelled.

In Ecuador, President Palacios seeks to increase windfall revenues from 30 percent to 50 percent and to renegotiate production sharing contracts, while still embroiled in disputes over company claims for refunds of value added tax payments denied by the government. Ecuador has now seized and will attempt to operate an oil field developed by Occidental Petroleum. Argentina reversed a successful fiscal regime by imposing export taxes and other restrictions which have returned it to being a net oil importer.

The net effect of these developments is that new investment in these countries is virtually frozen at a time when prices should be driving new exploration and production. It is notable that even China, which is aggressively competing for exploration acreage worldwide, is not a major player in the hemisphere. China holds less than 10 percent of upstream assets in the hemisphere, primarily recent acquisitions of Western assets in Ecuador and Peru, and enjoys no preferential access in Venezuela at this time. No new investment has been made under Venezuela's 1998 hydrocarbons law. New investment is unthinkable in Bolivia until existing companies can determine the extent of their losses. Ecuador's investors are mulling legal action for expropriation and suspension of existing investments. The future growth potential of the hemisphere is being undermined and the region's economies risk a major contraction if oil prices drop significantly anytime over the next decade.

B. The market model

The hemisphere is not monolithic. We have seen remarkable success stories like Brazil, Colombia, and Peru, which have created independent regulators and obliged their national energy companies to compete with outside companies for exploration rights. Such progressive cases provide bright spots in the region. Brazil has received enormous, and well-deserved credit for the contribution that sugar-based ethanol has made to its self-sufficiency in oil. But equal credit should go to Brazil for a remarkable change in its terms for welcoming foreign investment, which made Brazil one of the most desirable destinations for exploration. Brazil's aggressive oil production strategy increased domestic oil production by 1 m/bpd over 10 years. In 1995, Brazil produced less than 700 m/bpd. In 2006, they are forecast to produce close to 1.7 m/bpd. Their jump in domestic production has had as great an impact on reduction in oil imports as anything else.

Competition has also made Petrobras a better company and a fearsome global competitor. Peru is set to become a net gas exporter if plans to build an LNG terminal and production from the Camisea project meet expectations. But these market-based energy producers are not the dominant economic models in the hemisphere, are not major oil exporters and, with the exception of Brazil, do not operate in the countries with the greatest reserves. Colombia is battling a rapid decline of its reserves and production. Peru is a net exporter.

Mexico

Mexico has been a long-time reliable supplier, but its upstream oil sector has been closed to foreign investment and it is projected to decline unless this policy changes or unless the Mexican Government dramatically increases the amount of PEMEX earnings it can keep for capital investment. In 2004, PEMEX paid the government 60 percent of its revenues. Mexico has enormous oil potential on its side of the Gulf of Mexico and a change in policy could both change global oil markets and create a formidable source of wealth for development of the country itself. Mexico will hold a closely contested Presidential election this July, and the winner will have to address how to avoid seeing Mexico decline as an oil power. For now, all candidates appear to oppose foreign investment in the energy sector but economic reality, opportunity, and perhaps creative political action could yet provide this generation of Mexicans with an economic bonanza.

III. THE IMPACT OF HEMISPHERIC ENERGY TRENDS ON U.S. FOREIGN POLICY

The most important challenge to the United States from these hemispheric energy trends is political, not economic. U.S. influence in the hemisphere is waning in key areas, support for liberalized markets and free trade is declining, and democratic structures are under stress as populist governing models reduce the space for political opposition. The November 2005 Mar De Plata Summit of the Americas could not produce a consensus statement. Military cooperation with nearly 10 countries has been suspended for the failure of these neighbors to conform to U.S. orthodoxy on the International Criminal Court. The United States could not muster support for its candidate for Secretary General of the Organization of American States.

Much of this decline is self inflicted. The hemisphere has not been a priority for U.S. foreign policy for many years, other than as target for our counternarcotics policy. Bilateral relations are focused on whether the hemisphere supports U.S. policy in other areas. The image of the U.S. is declining in the hemisphere due to U.S. policies in the Middle East and human rights issues raised by our treatment of detainees from Abu Ghraib to Guantanamo. Nonmilitary aid for development assistance and child survival is declining for budgetary reasons. The United States is widely perceived as insensitive to the region's concerns and our influence has been harmed as a result.

The Venezuelan challenge

For the first time since the fall of the Soviet Union, the United States now has an ideological and political competitor for political influence, arising primarily from Venezuela.

High oil prices have enabled President Chavez to maintain very high revenues for his government, allowing increased domestic social spending, high levels of foreign assistance, and modest reinvestment by PDVSA in countries in South America and the Caribbean. President Chavez has a competing vision from that of the United States on a broad range of issues. He opposes the United States on trade integration, our liberal (versus his Bolivarian) model of democracy, on Iran and Iraq, and seeks to exclude the United States from regional economic energy arrangements in South America and the Caribbean. His economic policy is to raise taxes and royalties on foreign energy investment, demand majority control of projects, and in the non-oil sector to seize land or other underutilized industrial resources for the state.

Venezuela competes with the United States in the hemisphere, offering aid for solidarity. Venezuela has capitalized on the different needs of the hemisphere's subregions by creating PetroCaribe, PetroAndina and Petrosur to foster cooperation and joint investment on a subregional basis. It has created an alternative trade grouping called ALBA, the Bolivarian Alternative for the Americas—which attempts to force nations to choose between trade agreements with the United States and with Venezuela. Venezuela is also identifying places where trade liberalization has a negative impact and stepping in to provide redress. Venezuela purchased debt issues from Argentina and Ecuador, and when the Colombia free-trade agreement with the United States threatened Bolivia's soybean crop, Venezuela agreed to purchase it.

The jury is still out on whether the Venezuelan economic model is viable at $25 oil and whether their neighbors support the Bolivarian vision and will really allow joint investment, or if they are just accepting President Chavez's assistance. But the political challenge to the U.S. vision for the region is unmistakable.

The Venezuelan model is an issue in every nearly every election in the hemisphere. In Bolivia, the mobilization of long disenfranchised indigenous forces—aided by years of United States assistance in party building and election organizing—led to the election of President Evo Morales, who is following the Venezuelan model. In Peru, Alan Garcia defeated Ollanta Humala, a proponent of the Venezuelan model, in a close election. In Mexico, the PAN candidate, Felipe Calderon, has closed a large gap with his PRD opponent, Manuel Lopez Obrador, by asserting he will follow the Venezuelan model if he is elected.

Given these mixed results, we should be careful not to overstate the salience of the Venezuelan model or to dismiss too quickly the forces that gave rise to it in the first place.

The roots of the antimarkets approach

It is important to understand what is behind the challenge to the U.S. model. We are seeing the rise of state control and forced revision of contracts for two reasons. One is that trade liberalization and increased GDP growth have not led to poverty alleviation or inclusion of excluded minorities in countries like Venezuela, Bolivia, Ecuador, and Peru, leading to a rejection of liberalized markets and the Washington consensus in many countries. Another is that growing populations have increased the pressure for governments to raise revenues in economies that are still resource-dependent, so governments are appropriating the best available source of cash regardless of the long-term consequences. This latter trend has led to higher taxes and royalties all over the world, including the United Kingdom.

The United States should protest violations of contracts or expropriations where these takes place and deny benefits such as bilateral trade agreements to countries that do not respect the agreements they have signed. The United States suspension of free-trade agreement talks with Ecuador is a good example of this. But the market will either tolerate or punish the economic actions of governments that raise tax and royalty rates or other fiscal terms adversely. If companies can make money under the new terms offered by Venezuela or Bolivia, they will pursue these opportunities. If companies cannot profit, they will close their operations, and if countries do not spend their own capital to develop their resources, then production will fall, their revenues will shrink, and the popularity of their programs will shrink with them. This may lead to higher energy prices, but foolish economic policy is not a basis for U.S. Government intervention.

The need for a new hemispheric foreign policy approach

What the United States lacks is a positive agenda in the hemisphere, one that recognizes the need to improve education and infrastructure, addresses the negative social impacts of trade liberalization, and offers the respect and cooperation of the United States to those countries that work with us. This will advance U.S. interests, no matter what the price of oil is. We need to address legitimate issues like poverty and advocate how our model can address them. Examples of this are addressing trade barriers to agricultural imports, expanding educational opportunities in the United States for future leaders, improving the visa application process, expanding military to military contacts, especially exchanges under the International Military Education and Training Program, dealing with migration issues with Mexico in a spirit of respect and fairness, supporting World Bank and Inter American Development Bank infrastructure programs in the hemisphere, supporting the development of civil society and the capacity of democratic institutions and treating our relations with our hemispheric neighbors as intrinsically important, not as litmus tests of loyalty to the United States on Iraq or other issues external to the region itself. In countries where we face ideological competition, like Venezuela and Bolivia, it is crucial that we do not abandon the field. We need to increase our diplomatic engagement and defend our way of thinking.

I believe that Bolivia's recent actions will mark the nadir of the turn toward repudiation of contracts. Countries like Bolivia and Ecuador are too poor and frankly, too insignificant to global energy markets to sustain the kind of behavior they are engaging in. Powers like Brazil can communicate this to Bolivia better than the United States can. The United States should maintain dialog with Bolivia and give it our best, even if unwelcome, advice and cooperate where we can.

Venezuela is a more complicated case. Venezuela is a competitor, but it is not likely to halt supply to the United States as an act of political warfare unless we embargo them first. They have, in fact, remained reliable suppliers of oil and products, despite the heated rhetoric reported in the media. An act of energy aggression by Venezuela against its neighbors is also unlikely at this time. Any hope Venezuela has for regional leadership would evaporate if they used their oil wealth for acts of military aggression against a neighbor. Withdrawing oil supply from the market will harm their new friends and future markets, as well as cut the government's supply of revenue. The United States could, would, and should use the Strategic Petroleum Reserve to redress the unlikely event of a production halt by Venezuela, or another (equally unlikely) strike by its workers. For now, the Venezuelan challenge is ideological.

Here too U.S. policy has failed to understand what factors have led to President Chavez's enormous popularity. Venezuelan Governments prior to the Chavez government governed poorly, practiced corruption, ignored poverty, and excluded minority sectors of its society. The Chavez government came to power determined to return control of energy policy from the national oil company to the government ministry, to reclaim some of the oil rents held by the national oil company for the government's own account, and to change the economic terms of its acreage allocation from those set when oil was $10. This is a policy the United States would support in any other country. The government has spent lavishly and allegedly unwisely on social programs, but this is what we pray most African Governments would do with their own oil wealth. The famous strike of 2002–2003 was a battle between the national oil company and the government and the government won. I cannot imagine the United States supporting the PEMEX in a battle against the Mexican Government for control of the PEMEX Board of Directors. The U.S. rhetorical support for the coup that displaced the President for a day was foolish, destructive, and devastating to our bilateral relations.

Where Venezuela has gone wrong economically is by changing contract terms with impunity and hostility, rather than by negotiation with companies who have been its partners for decades, invested billions in its energy sector, and created the production that now enriches the nation. The manner in which the recent changes have taken place has been shortsighted, destructive, and unnecessary. Venezuela has changed its interpretation of its own tax laws, but it is provocative and disingenuous to accuse companies of being tax cheats as a consequence. Time will tell whether the attractiveness of Venezuela's tremendous oil and gas reserves overcomes the pain inflicted by the way these changes have been made. Oil companies tend not to be emotional about these issues as long as they are making money.

Where Venezuela has gone wrong, politically, is by using legal methods to restrict freedom of the press, prosecution to intimidate political opposition, and constitutional assemblies to unbalance formerly balanced institutions like the Supreme Court and national election commission. The regime itself, helped by the failure of a political opposition to mount a campaign describing what it was for, and high oil prices sufficient to fund the government and external programs at the same time, does not appear to need to use either tactic to win large majorities. These internal governance issues should be the focus of a regional policy, which includes, but is not led by the United States. We should have objective assessments as to whether Venezuela's actions are undermining any other important United States security interests. Venezuela has positioned itself as an ideological competitor to the United States in the hemisphere. We need not and should not treat Venezuela as an enemy; we should, however, try to compete. We should also end our dialog via the media and resume the dialog between our senior foreign affairs, commerce, energy, and cultural officials. We should work with Europe and with hemispheric partners to reinforce a message of respect for democratic institutions.

IV. THE STATUS OF CURRENT DIALOGS AND THE NEED FOR A FRESH APPROACH

The United States has had a number of bilateral and multilateral energy policy fora in the hemisphere over the years. Some are active, while others have lapsed or are stagnant. These fora are platforms to understand market dynamics, share best practices on energy efficiency and conservation, share understanding on ways to enhance energy production, and exchange views on how a nation's energy policies may be enhanced or reformed to promote the nation's own policy. These policy dialogs are also essential for building the understanding and relationships that are essential for trade promotion and conflict resolution.

The premier multilateral energy forum was the Hemispheric Energy Initiative (HEI), a multilateral meeting of the hemisphere's energy ministers, with many active subgroups, which was cochaired by the United States and Venezuela. The HEI is dormant due to the status of our relationship with Venezuela, leaving us with no effective forum at all. Bilaterally, the United States had a Principal Coordinators Energy Dialog with Venezuela, as well as a 30-year technical cooperation agreement with Venezuela. The bilateral Venezuelan dialogs were suspended for political reasons.

The United States has a trilateral energy policy dialog with Canada and Mexico, which has addressed electric power, energy conservation, harmonization of standards and market outlooks. It has taken many forms, but it functions very well.

What remains of engagement is not adequate. A fresh approach which engages the United States with all the region's producers and consumers is sorely needed.

I commend the Chairman for the vision contained in EDSA and for the framework it provides. I wish to comment on four aspects of the bill.

With respect to section 3, on the Sense of the Congress on Energy Security and Diplomacy, I strongly share the call to integrate energy security into national security policy coordination by an interagency grouping and by creation of a new position at the State Department. In practice, there will be a need for energy security to be considered in many of the bilateral policy groups as well, so the issue is not marginalized, but these are important new measures. I would hope that the Secretary of Energy will be a player on bilateral policies in the Middle East, Central Asia, and other regions as well, so that the Energy Department's expertise is enhanced and not diminished.

The Strategic Energy Partnerships contained in section 4 of the bill will be essential. We may have some of these on paper, but they need to have the diplomatic attention that has been lacking. The lack of high-level engagement with Brazil is a case in point. Here I would caution that we should not exclude dialog with countries that are ineligible to receive economic or military assistance. This kind of assistance gets suspended from time to time, with countries ranging from Nigeria to Venezuela. We should not tie the hands of our diplomats especially when we are using other measures like withholding assistance to impact a country's behavior.

The Energy Crisis Response Mechanisms in section 5 are essential for bringing China and India into the international collective energy security system. Here, too, I would urge some flexibility to include other nations such as Thailand, Singapore, or Indonesia in such a system so we do not marginalize them or miss the chance to build an even stronger collective energy security system with consuming nations who will have a common interest with us.

Finally, with respect to section 6, I share the Chairman's view that we need a new Hemispheric Energy Cooperation Forum with a strong private sector forum. The United States needs to engage producing countries with successful policies, such as Brazil, Colombia, and Peru, as well as competitors like Venezuela. We need to engage the consuming countries as well, in the Caribbean and Central America, as well as the Southern Cone, to address policies that favor consumers. One lesson we have learned from the HEI is that different regions of the hemisphere have different needs—some focus on power generation, others on integration of their grids, still others on access to oil and gas. The United States may be able to forge stronger bonds, and frankly compete more effectively on an energy security vision for the region, if we can organize along subregional lines, and meet in plenary when the timing is right. I think we have to recognize that while there is a state of conflict among the producing nations, a hemisphere-wide forum will face great challenges in achieving any meaningful consensus. I think we need one, but I suggest the bill provide some flexibility in how it is organized.

I have some concern, as a former Assistant Secretary of Energy, with putting the State Department in charge of this effort with Energy's cooperation, rather than the other way around. I recognize there may be jurisdictional issues here. One factor I urge you to consider is that we need to deepen the international energy diplomacy capacity of the Department of Energy. Their relationships with civil servants in ministries across the globe provide a bridge across changes in government here and there. They can talk when the politics of nonenergy issues obstruct dialog among the foreign ministries. It is easier to get energy ministers together for regular meetings than secretaries of state. Their staff should be expanded and serious program budget established to make our cooperation more than rhetorical. For true reform to be achieved, I agree that foreign ministers, indeed heads of government will have to be involved. This will be the key to integrating energy security into foreign policy. But I urge some flexibility on the bureaucratic leadership provisions of this section as well.

V. EXTERNAL POLICIES

In addressing challenges in Latin America, EDSA recognizes that the United States cannot go it alone. I note with admiration that the Chairman has placed an emphasis on integrating energy security into NATO policy, and into dialog with China and India. I would only add that we need to take an asymmetrical approach to our multilateral diplomacy outside the energy sphere. We need to focus the United States-European Union Dialog on democracy promotion and conflict resolution in Latin America. We must also begin a dialog with China and India on security and stability in energy-producing areas. Both are great powers and we share an interest in stable energy supply and conflict resolution. As these powers grow on the international stage, we need to talk to them about their policies and how they interact with the IMF, World Bank, and international multistakeholder efforts like the Extractive Industries Transparency Initiative.

While it is the topic of many of your other hearings, it must be said that regional approaches to combat the use of oil as a tool of foreign policy are tactical measures to manage the near-term consequences of the impact of oil wealth on many oil producing nations. The energy dependency of the United States, our allies in Europe and developed Asia, and the growing dependence of rising powers such as China and India on imported oil, is rapidly eroding United States global power and influence around the world. My colleague, Jan Kalicki, and I, and a host of energy experts from around the world from producing and consuming nations, analyzed the sources of these problems and suggest a set of domestic and international solutions to them in a book we coedited titled "Energy and Security: Toward a New Foreign Policy Strategy" (Wilson Center Press/Johns Hopkins University Press, 2005). As the Chairman so eloquently argued in his Brookings speech this year, a strategic approach to this program must focus on reducing the importance of oil as a global commodity. While this is a 20- or 30-year effort, a strategic energy policy that invests in new technology, uses tax and regulatory policy to accelerate the deployment of alternative fuels and vehicles, and drastically increase fuel efficiency, and expands the system of collective energy security to include China and India, is the only way to protect America's power and influence for the long term. I commend the committee for its historic attention to these fundamental issues.

The CHAIRMAN. Well, thank you very much, Mr. Goldwyn, for a very comprehensive statement on our whole diplomacy, in addition to the energy focus.

Let me recognize the distinguished ranking member of the committee, Senator Biden, for his opening statement or comments.

STATEMENT OF HON. JOSEPH R. BIDEN, JR., U.S. SENATOR FROM DELAWARE

Senator BIDEN. Mr. Chairman, I apologize. I had to, attend another meeting, and I apologize for being late. I look forward to being able to ask some questions.

The CHAIRMAN. Let me just pragmatically suggest 5 minutes on this first round. We're all sort of coming and going, and the Chair will try to recognize people as they reappear, and hopefully the panel will not be dismayed by these comings and goings.

I want to start by asking this question. Essentially you have mentioned, Mr. Carvalho, that it would be helpful even in a bilateral relationship with Brazil, but you have extended that to really all other countries in the hemisphere, to have what might be a roundtable in which we would discuss how Brazil's success in ethanol from sugar could be replicated by many countries in Latin America, and for that matter, elsewhere around the world.

And second, I ask you this. Could that roundtable, in addition to production expertise, and all the problems Brazil faced over 20 years which need not be faced by everybody else if we learn the Brazilian story well, talk about flex fuel cars? How are these going to be produced? Who will do that sort of thing?

Because in our experiment here in the United States, in my home State of Indiana, we're into production of corn ethanol in a big way. But then it leads to a question: What about there being only 75,000 flex fuel cars in the whole State of Indiana, and only 32 filling stations that have a pump? In other words, how do other countries, in addition to Brazil and the United States, if we get into this dialog, replicate what is required for that type of alternative situation?

Whether it's sugar ethanol or corn ethanol or cellulosic, as we discussed with the first panel, all these potential alternative fuels offer great possibilities for countries in Latin America that just don't have any deposits of oil, but do maybe have sugar or fiber that can yield ethanol, as we can in 50 States in the United States. In other words, theoretically it's possible for every country to be involved in the energy business, for new wealth to come to each of these countries in a way that no one has envisioned until recently.

We have just discovered the Brazilian model in the last 120 days. My guess is that around this country virtually no one knew 77 percent of the cars are flex fuel, or 52 percent of the sugar crop goes to ethanol, or facts that all of us now rattle off simply because this has become almost doctrine of how you have success. Plus there has been some good offshore drilling for oil, which is also very important in terms of bringing about this energy independence.

Now, just physically, how do we get everybody around the table? You are out there in the field now, in Brazil, and you've come here today to dialog with us in the United States. We're encouraging a lot more of that, which is good in itself, a Brazilian-American relationship. And you suggest that we drop the tariffs and the barriers. I endorsed that in the opening statement.

But beyond that, how do we extend this to the rest of the continent, to Central America?

Mr. DE CARVALHO. Well, Mr. Chairman, I think you are extremely qualified to talk about it, and I have read carefully your article, together with our Ambassador Abdenur, and I congratulate you on——

The CHAIRMAN. He's a good man.

Mr. DE CARVALHO [continuing]. Your vision on energy. The fact that the introduction of ethanol as a partial substitute for gasoline, as we have said, there's no silver bullet at all, but certainly ethanol can contribute. The problem is how we can generalize production and then consumption of ethanol, and the fact that the sustainable ethanol out of sugarcane cannot be replicated outside the tropical world calls for the cellulosic processing, ethanol production, which always has been 10 to 15 years ahead.

I have been dealing with this for the last 20 years. Always it's 10 or 15 years ahead. But now I propose something different. Why don't we join on research? Why don't we get together and see what kind of improvements on research programs can be made in order to accelerate? We cannot wait another 10 to 15 or 20 years to have ethanol production that can be sustainable everywhere in the world. Because if we get this process, we will develop ethanol production everywhere, especially in the northern hemisphere. And then the market is there, as I said. There is 450 billion gallons of gasoline market to be conquered by ethanol.

Now, we should be collaborating. I think that we have to recognize different problems. I think Argentina began a program on ethanol, although in the early 1980s, but unfortunately didn't go ahead. Colombia today has a very important program of substitution, of blending ethanol in their gasolines, and the sugar industry is transforming part of their sugar exports into ethanol production to use locally. I think Guatemala is in such a process. In Mexico there is a study. I think we could be together in a kind of association or whatever instrument, to get together to work toward those goals.

There is much that needs to be done. We have never to forget, though, that ethanol in production in the gasoline market is not an economic proposition at the beginning. It should be economic, certainly, but it's much more than that. It is strategic.

So why have we had success in Brazil? Because that was a strategic decision of the country, faced with necessity. Necessity is what made our program a successful one today, but it was not always a success, and several times people didn't regard it as a viable program at all. So there must be political leadership. Otherwise, there will be no place for ethanol, because oil companies will never allow us to sell ethanol if there is not a political mandate to do so.

And once you have the political mandate, then you will have the possibility of improving your infrastructure of distribution, of gas stations, etcetera, etcetera, etcetera. But when people realize there is a political decision of the country to get rid really of the oil ethics, as President Bush has said, then things will fall.

When people realize that your 5 million flex fuel cars that you have in the United States can be fueled by ethanol, the gas stations will come, but not if you design a program that is only fitted for the local production capacity. The market for ethanol in the United States is much larger than the 7.5 billion gallons of ethanol that is due to be produced in 2012.

The actual market for gasoline today, which is the actual potential market for ethanol, in the United States alone is 140 billion gallons a year. Imagine what you can do with that. Imagine the kind of investment that people will be ready to make if there is such a strategic political decision.

That's some of the thoughts that your provocation helps me to——

The CHAIRMAN. Well, I'm glad to have provoked you into a remarkable statement. I appreciate that.

Senator Biden.

Senator BIDEN. I would like to follow up, if I may, Mr. Carvalho. What was the effect on the rural economies, not just on the country's overall lack of dependence any longer on oil? What were the spinoff effects on the economies in rural areas? In other words, did it generate other economic benefits, in addition to giving you the independence on balance of payments, deficits, etcetera? Are there tangible effects in rural communities?

Mr. DE CARVALHO. Well, thank you, Mr. Senator, for your question. It's very simple. Sixty-five percent of all sugarcane production, 70 percent of all sugar and ethanol production is concentrated in the state of Sao Paulo.

If you go to the sugarcane areas in Sao Paulo, you will see what we call the California of Brazil, because the distribution of income, the generation of employment, No. 1—because it's a high employment industry. Especially on the sugarcane fields, we employ at least a million employees, direct employees, which means some 3 to 4 million in direct employment, and where you have the highest wage rates in agriculture sector in the whole Brazil. You can see visually what happens in the places where sugarcane comes.

There was a saying in the early part of our introduction of a few programs, ethanol programs, in the late 1970s, early 1980s, whereas people said, "No, sugarcane is going to destroy food production," and this argument is being used today here in our states elsewhere, which is not true. The capacity of the agriculture is much more, agriculture is much more sophisticated than that.

We are not substituting food production. We are the country inducing further food production, because the income levels rise and demand rises and people begin to produce much more things.

Senator BIDEN. I was on one of the Sunday shows, and so I missed a "Meet The Press" show on oil executives. Any of you guys see that? I didn't, until I saw clips of it.

The oil executives were making the argument to Mr. Russert on Sunday that corn ethanol wasn't a really good bet. Everything from the price of corn chips to other food products would go up, and that the total cost to the economy would be significant in diverting this much of the agriculture production.

I kind of found it interesting. At the same time they talked about how they're going green. And that's why I asked the question about the impact on rural communities, not only in terms of employment in harvesting sugarcane and the refining process, but the generated income in the region from refining—that you would have a greater wealth in these communities. That's why I asked the question. I found it fascinating that there were many arguments why diversification was going to drive up the prices.

The second question I have is on this point, if I may, for another moment. You made the same statement that others have made on this issue: That transition is not perceived to be in the interest of the oil companies, notwithstanding the oil companies are arguing that they are making transitions themselves.

Did you find a necessity to provide a floor for the price of oil, so that they couldn't drive this emerging market out of business? In other words, in our case right now, it's economical to go to corn ethanol, if oil is at $30 a barrel. What was your experience with the industry in trying to retard or encourage this transition?

Mr. DE CARVALHO. Well, Mr. Senator, we had that problem, because all the ethanol industry was built in the late 1970s and early 1980s. But when oil prices began to drop by the middle of the 1980s, our ethanol program was practically abundant. And we producers, we had to sustain the whole process of building up our sugarcane fields, our plants, and they were just on stream.

Fortunately enough, at that moment Soviet Union disappeared, so a protected market for Cuba's sugar disappeared, and there was an opportunity for our plants to transform sugarcane into sugar and not ethanol, and we became the leader in sugar exports during the 1990s. We were no one in the sugar market in the early 1990s, and we finished the decade being the number one exporter of sugar in the world.

But the fact is that we had a tremendous increasing productivity. Our cost of production for 1,000 liters of ethanol in the early 1980s was $850, and today I don't know what is the cost of production because my associates, they don't tell me what their cost of production is, but I know it's below $200, constant dollars, of the same quantity of 1,000 liters.

So we will increase productivity. We will never say that I would like to have a guaranteed minimum price of oil in order for us to compete with it. No, that's not the way to proceed. What we have is to believe that the cycle of petroleum is changing and we will not have any more cheap oil. We have to bet. The private industry is there to risk, and this risk we can assume.

Senator BIDEN. Thank you. My time is up.

The CHAIRMAN. Thank you very much, Senator Biden.

Senator Chafee.

Senator CHAFEE. Thank you, Mr. Chairman, very much, and welcome, distinguished panelists.

Senator Craig in the first panel said the fact remains constant that our policies—and he said if they warrant that term—toward Latin America don't seem to be working, and then Mr. Goldwyn said what the United States lacks is a positive agenda in the hemisphere, and then Mr. Goldwyn talked about our counternarcotics efforts. Is that the area where we've really gone wrong and alienated some of our friends in the hemisphere, and what can we do better in that area?

Mr. GOLDWYN. Well, I think we haven't gone wrong in seeking counternarcotics cooperation. And I think some of the trade preferences that we have offered, that we are about to eliminate, to countries that try and switch from crops that produce drugs to other ones, has been a good effort and maybe we ought to continue it. But I think the problem is that we haven't done a whole lot else.

I think with respect to that policy, the fact is that the profit that farmers make from these alternative crops is well below what they were making from growing coca, and the amount of jobs created by those programs was pretty thin, and so it wasn't very appealing. Other people were able to compete with us. So I think we need to be more creative on our counternarcotics program.

But I think the greatest problem is that we didn't do a whole lot else, and the fact is that trade liberalization is a wonderful thing but it has severe dislocation consequences and we didn't really think those through. We didn't really engage the region's governments on how they were dealing with it. And so we have these large indigenous, marginalized populations that have been out of the economy for years and are very hostile to the Washington consensus.

So I think what we need is a policy that's a little bit more creative. Now, that might be a better way to look at job creation there. It might be lifting some of these trade barriers, so they can grow sugar and corn and other things and export them to the United States without facing our trade barriers. Probably the best job creation policy that we could have for the hemisphere, would be to lift the barriers we have on the things that they make the most.

But I think that we also need to look at some positive engagement in the region. Things like rural electrification would make a huge difference. It would promote development in areas that are pretty much off the grid. It's not needed in every country, but it's needed in a lot of them.

I think our visa application process and educational exchanges, where once upon a time we brought lots of people from the hemisphere to our universities, and they went on to become finance ministers and heads of state, well, now it's kind of hard to get a visa to come to the United States and we don't welcome a lot of those people here. We are basically throwing away the seed corn of the future leaders. So I think things along that line would give us a positive agenda in the hemisphere.

Senator CHAFEE. Maybe I could ask the other panelists to comment also on how we can have a better relationship in the hemisphere. Mr. Cavallo? If you agree with Senator Craig and Mr. Goldwyn's premise?

Mr. CAVALLO. Yes, I agree with what Mr. Goldwyn said, except that I don't think that it's trade liberalization that caused the problems in Latin America. Actually I would say the lack of trade liberalization in terms of the protection that the United States still provides to, for example, agricultural products that are efficiently produced in Latin America, and also we have seen the case of ethanol which is particularly related to the supply of energy in the world.

Now, I think that the big mistakes of the United States in dealing with Latin America refer to the management of a financial crisis. The United States in the early 1990s offered Latin American support through the Brady Plan and through the joint participation in the negotiation of the Uruguay Round, and also in the Initiative for the Americas, to launch reforms that were not decided in Washington, that had been decided in each one of the Latin American countries by their leaders, but were in line with the prevalent views in the United States and in the most advanced countries in the sense that a market-oriented system would be more efficient and conducive to improved growth and wealth in all the countries.

Now, the United States was not ready enough, or more than the United States, the IMF, to work together with the countries at a time of crisis to prevent the very negative effect of financial crisis in the region. That was particularly the case of Argentina.

For example, all the problems that the Southern Cone is now facing in terms of energy supply relates to the combination of "pesification" and devaluation that came as a consequence of the financial crisis in Argentina. But the United States and the IMF could have helped Argentina to have a smooth transition to a new set of policies by the end of 2001 and 2002, but instead of doing that, it preferred to let Argentina go to hell, you know.

So I think that the policy of the United States vis-a-vis Latin America should pay more attention to global stability of the countries and be ready to help in critical moments, to prevent the sort of climate of confrontation that we now have in the hemisphere.

Senator CHAFEE. Thank you very much. I see my time has expired. Thank you.

Senator COLEMAN. Thank you. There's so much that I want to ask and so little time. I've just got to make just a general statement beforehand.

We talk about American policy, and I would agree that we need a more positive agenda, but I think to blame trade liberalization on some of the challenges we're seeing with populist regimes in Latin America, I'm not sure I necessarily buy that. With all the negatives, there are a lot of positives going on, too.

Uribe just gets reelected. Humala is rejected in Peru. John Danilovich with the Millennium Challenge Account is doing some tremendous things, and brings great experience to that. The election of Bachelet in Chile and our relationship with Tabare Vazquez in Uruguay.

And I would say respectfully, Mr. Cavallo, that the concerns that Argentina has had about its fiscal situation is not an IMF problem. I mean, part of what we're saying is, you know, people have to act responsibly. When Uruguay had a problem, we were there.

So it's easier to paint with a broad brush these challenges in the region, but I think even the challenges ultimately perhaps develop into opportunities. I think that Brazil and Colombia, and even Spain is now looking at Chavez as a problem, and it's not a United States problem. It's a problem of instability in the region. And so when Morales moves against the oil fields, the Brazilian interests, all of a sudden the Brazilians have an awakening.

And we have got, you know, Colombia wants to do an agreement, and I hope that we get to it, and there are some challenges with that. And Peru, Bolivia, looking at the Millennium Challenge Account, we've got to deal with that. So I think there's a range of opportunity. I think it's a little simplistic to kind of look at the United States as the big bad guy here and somehow the cause of some of the challenges. There are some deep-seated issues in Latin America. And we need to be at the table, and I certainly agree with that.

Let me ask, Mr. de Carvalho, one of the things you talked about was in regard to ethanol, the service stations. We talked about the challenge. Half the ethanol, half the E85 pumps in America are in my State, Minnesota. So as we talk about flex fuel engines, we talk about production of ethanol, and you're right on the money, you know. We talked about 7.5 billion gallons in 2010 as some high watermark. We're going to exceed that. If we did nothing, we'll be at 14 billion gallons, and it can't all be done by corn and soybeans.

And I want to reflect on the very good question by the ranking member. You know, this issue about what kind of economic, well, I can tell you that $100 million of economic activity, now close to probably $150 million, in Fairmont, MN is a big deal. It's a big deal in Austin, MN. It's a big deal in Benson, MN. It's a big deal getting capital investment in rural communities that are growing jobs and then raising prices, so I think there's great opportunity.

But the question I have is, for Brazil, we face an issue here with the lack of infrastructure, and I thought you made the comment that the stations there will come. Did Brazil do anything to support that infrastructure, to create that infrastructure? What did the Government do to provide greater opportunity for distribution of ethanol?

Mr. DE CARVALHO. To remember the circumstances at the time when the program was launched, second half of 1970s, early 1980s, the 100 percent ethanol car was launched in 1979 on the second oil shock. When you are blending ethanol with gasoline it's a very simple operation, economically speaking. But when you are selling the 100 percent ethanol, which in your case is the E85, you have to know that you have to price it accordingly with the mileage of each one of those fuels.

Although ethanol is a fantastic enhancer to driveability, it has a minus component, which is the fact that you drive less miles per gallon than with gasoline, and this differential must be seen at the price at the gas station. It means that for you to sell E85, you have to price it below 70 percent of the gasoline prices.

Senator COLEMAN. But my question, if I may, in the limited time I have, the presence of the pump itself, the actual infrastructure—in other words, one of the challenges we have is the lack of E85 pumps in places, so——

Mr. DE CARVALHO. That is simple. We had this special gasoline at the time, the blue gasoline, whatever they were called at the time. They were transformed into ethanol deposit and pump. The pump is there. The problem is the distribution system, but the pump is there.

They have at least four or five deposits at the gas station, so you can put one of them dedicated to ethanol, and you arrange some of the rubber, some of the material, to be more consistent with the corrosive action of the ethanol which is higher than gasoline. But this is a very simple problem.

The problem is on the distribution system, the basis, how you distribute it. For instance, you do have a problem here because you do not carry ethanol on your pipeline system, and that's something incredible, because we do transport our ethanol on our pipeline system, and Petrobras has an experience of 30 years of doing so. But, unfortunately for us, you do not do so, which makes the markets of both East and West Coast extremely accessible to our ethanol because of the general costs of distribution.

Now, what you have to do is, you have to have volume of production, and price competitive with gasoline, but because of your low taxes on gasoline it's difficult to arrive at such a situation under present production circumstances and then the protection, because protection, as we know, induces higher prices. Higher prices does not induce for the consumption of ethanol on your 5 million flex fuel vehicles that you have today. That could represent at least 2 to 3 billion liters, gallons, of ethanol consumption, the existing flex fuel fleet you have in the United States.

Senator NELSON. Senator Coleman, we're down to 2½ minutes to vote.

Senator COLEMAN. All right. I would just ask this question, and the ranking member will recess the committee until the chairman comes back, so that we can cast this vote on the floor.

What I would like for you to state for the record, is the threat that Chavez makes in the cutoff of the oil—we discussed it earlier, about how he would give up all of the infrastructure that he has in the United States through the Citgo stations and so forth—what is the timing when he would, in your opinion, make good on that threat to cut off the oil to the United States? That's what I would like you to state for the record.

Senator BIDEN. Please. Fire away.

Mr. GIUSTI. Fire away? I personally think that it's highly unlikely that we're going to see anything of that kind in the foreseeable future, in the next few years. And the reason, the reason is that those exports are not only necessary for Venezuela, but they do not have alternative destinations because of the sour and heavy nature of the crudes that are exported to the United States.

And the second thing, which I also mentioned in my statement, had to do with Citgo. And the threat that they're going to shut down the refineries of Citgo I think is also very highly unlikely because the stations, the outlets, are not owned by Petroleos de Venezuela, and as a result of that those are contracts with clients.

So in the event, unlikely event, that they would shut down the refineries, there will be a breach of thousands of contracts, and I cannot foresee how that could be managed legally, to have a breach of 10, 12, 13,000 contracts in the United States. I think this is highly unlikely. This is my answer to that.

Mr. GOLDWYN. If I could add to it, I agree with everything, with what Luis Giusti has said. Chavez often couches his threat with "if we are attacked, if something happens to us, then we will cut off the oil." And I really think it is only in the face of an attack by the United States or an embargo or a direct action by us that he would actually do this.

The CHAIRMAN. Well, I appreciate your continuing on as we are coming and going. Let me commence another round of questioning at this point, and simply explore the issue further with you, Mr. Goldwyn. You made the three points as to why things have not gone well for the United States diplomacy overall, the first point being we've not paid much attention to Latin America.

And there have been, most of us have noticed, we've had testimony, we were all deeply involved in election campaigns in Central America in particular, occasionally South America, in the 1980s. We saw a lot of visitation by members of this committee, by members of the Senate, various groups. But in the 1990s we became preoccupied with the fall of the Soviet Union, with Russia, with Eastern Europe, with other implications of that situation, and unfortunately there was a lapse of attention.

The energy situation for us is imperative, but likewise, as you have suggested, poverty and income and so forth are pretty important for all of us, whether we're in the United States or in Central or South America. Suddenly we have the possibilities of using agriculture for industry, whether it's the sugar crop in the tropical areas or cellulosic fiber in the nontropical areas. In our country corn and soybeans come to mind as possibilities.

I notice, for instance, just in rural counties in Indiana where the ethanol is about to be produced—it hasn't quite gotten there yet, but it will in the next few months—the injection of that much new income into a small county in Indiana, plus the enhanced value of the corn that is soaked up from all around, are going to have huge implications that people in our State have not quite grasped yet. They will. It will be almost like oil wealth coming suddenly to a country that has something of this sort. But that could also happen throughout Latin America.

Diplomatically, how do we get this to happen? Who calls the meeting? Who begins to integrate a structure of relationships? As people like myself and even the President have inquired, what if we drop the tariff with regard to ethanol vis-a-vis Brazil?

Countries in Central America who are part of our new Central American Free Trade Agreement will say, "Now, hang on here for just a minute. We think that may disadvantage us." And they reason that really won't work for them.

We have sugar producers in the United States who will say, "Now, hang on," again, because here sugar is going to be coming in under a different guise. And we say, "Well, you folks just don't get it. We have an energy crisis in the country. It's not just a sugar subsidy problem for 1,100 farms that are left in the South, that deal with this sort of thing."

In other words, the vested interests in each of these cases are entrenched with political clout in their governments, ours included. However, is it a possibility that in fact the United States and other countries can begin to talk about new wealth for every country and the possibilities of sharing expertise, and all of the lessons we have learned? Mr. Carvalho's situation went from $800 to $200. There is no need for us all to go through that whole experiment again. Does this make a difference, do you think, ultimately, in the overall diplomatic situation, in addition to our energy predicament?

Mr. GOLDWYN. Mr. Chairman, I think that it could. I think it could really be transforming for our hemispheric policy. Let me address two questions. First is how do you do it, and then what is the impact.

There are three options for how you, in a sense, call this meeting. There is the now-dormant Hemispheric Energy Initiative, the spinoff of the Summit of the Americas. It's dormant because the United States and Venezuela are the cochairs. But it doesn't mean that you can't have a hemispheric summit called by the United States and Brazil, you know, with this topic. But that's a meeting of energy ministers. That's one option.

The other is the ad hoc approach. We have a global partnership on carbon sequestration. We've got a global partnership on nuclear energy. There's no reason why we can't have a hemispheric partnership on biofuels or alternative fuels and energy, and we can invite to it anybody who wants to participate.

But as you have said, Mr. Chairman, the focus here isn't on the producers, it's also on the consumers. It's all these countries in Central America and the Caribbean that are terribly squeezed by product prices right now, and it's all the countries that can produce fuel. So you could do that on an ad hoc basis——

The CHAIRMAN. That's the point I have often made, that there are some consumers here in addition to all the producers that we're talking about.

Mr. GOLDWYN. More consumers than producers, and a lot of the producers subsidize the cost of the products in their own country, so it's a tax on them, too. And so that's why we always focus on the big guys, but there are greater numbers in focusing on the consumers.

And a third way is really to create a new forum, the way you've suggested in your bill, which would be to have our State Department's trade ministries and other people together at the table.

I think one of those approaches is the way to do it. You can bridge these differences and these entrenched interests by looking at what the potential market is for alternative fuels in the hemisphere, what the potential could be, what measures like our renewable fuel standard could drive you there, and whether they are high enough. You might show that the pie is big enough for everybody to produce or for people to produce more without severely damaging United States sugar interests or damaging the Central American interests. There might be a hook to include more countries in some sort of a regional trade agreement, even though the authority is about to expire, which is based on expanding the pie rather than the way people tend to look at it right now.

The CHAIRMAN. Mr. Giusti, do you have a comment in this area?

Mr. GIUSTI. Yes. Thank you very much, Mr. Chairman. I would like to say that I'm sure that many good things can be done along the lines that David has been mentioning, but I would not cast in general a negative outlook on the region. You were not here when Senator Coleman spoke, but I share a lot of his views. There are many good stories there.

First of all, the FTA of Peru, the FTA of Columbia, even Ecuador, I think some of the things are going to be solved and that will come to terms also. The story in Colombia is an excellent story concerning the reform, the new institutional framework, the fact that companies are flocking there, it's going to become an exporter. We have the case of Trinidad-Tobago, not being Latin America, which is a great story. Brazil is an excellent story in many ways.

And I think we have to be careful not to follow too much the very loud voices that capture most of the headlines, because there are a lot of things that can be said at that moment. Because everybody says, you know, the White House, instead of really what it is, which is the multilateral institutions, and there are consequences.

But a lot of the countries have learned that they really have to reinforce their institutional framework, and they're making great progress. So I think there is room enough to really do a lot of good things in terms of diplomacy from the United States.

The CHAIRMAN. Mr. Cavallo.

Mr. CAVALLO. Yes, I agree that there is room for reviving the trade negotiations, starting with or focusing on the energy issues, but I think the only chance of attracting complete interest by the Latin American countries is to start linking energy to agriculture, and I think ethanol could be a good bridge between the two subjects.

Of course, the reason why Free Trade of the Americas has not become very interesting for Brazil or for Argentina or for other efficient producers of agricultural products was because of the fact that agriculture is always left for the discussion in the Doha Round. Now, I suggest that the United States starts working together with Latin America, as it did in the late 1980s, early 1990s, at the time of the Uruguay Round, to try to cooperate, to get free trade of agriculture products in the Doha Round, and to start discussing these issues within the hemisphere linked to energy.

The CHAIRMAN. Along that line, do I hear you right? We don't know how the Doha Round will come out. Some are very pessimistic. But in the meanwhile, is it conceivable we could have a free trade agreement on agriculture in the hemisphere?

Mr. CAVALLO. Yes, that would be a big step.

The CHAIRMAN. This need not be a total comprehensive agreement of everything in the world but, as you are saying, there is clearly a link with agriculture and energy.

Mr. CAVALLO. And energy.

The CHAIRMAN. And maybe we all have something to say about that, but the point that some of you have made, is to show some interest on the part of the United States in other countries in the hemisphere, to indicate that we really care, that we have a national interest in this. The consensus would be in fact a free trade agreement for agriculture.

Now, somebody might say, "Oh, why don't we try out something else," but let's sort of keep it simple for the moment. Doha is all wrapped around agriculture because the world has simply got to solve that before we take on automobiles or pharmaceuticals or everything else.

Agriculture does speak to the plight of many people who are very poor, and some of them who are not doing too well in the United States, for that matter. When I talk about counties in which suddenly an ethanol plant arrives, why, that may be a deliverance in terms of jobs as well as revenue in the banks and various other things in our country. So I am intrigued by that slice of the pie that you have mentioned. It may be helpful for us here.

Mr. CAVALLO. Yes, and let me add one point. You should not be accepting on the effectiveness, or you should be clear that I think Hugo Chavez has not been effective in convincing the rest of South America, particularly because of the consequences for the energy-scarce countries of Latin America of the actions he is implementing, and also he is recommending to Evo Morales.

The CHAIRMAN. Taking that principle of our relationship with Venezuela which you were discussing as I was coming in, winding up that thought, what if we were to have this dialog with all the countries in the hemisphere about agriculture and energy?

There is no reason why we could not be of help to Venezuela in this situation, you know, as opposed to an adversarial situation in which we say, "Are you about to cut off our oil?" or what have you, and accept the fact that that is unlikely, as many of you have mentioned, because of the refinery problems and because of many problems of this sort, and at the same time welcome Venezuela around the table, welcome Evo Morales around the table.

Now, these folks might not know exactly what to do and say in these situations. They might not come. They might advise others to stay away. But, nevertheless, it's an affirmative situation in which, as opposed to picking out places where the sky may fall, we are really trying to address the situations of many countries with whom our relationships might be refurbished.

So I have envisioned this as a way and I think all of you are expressing this—that we meet problems that are strategically urgent with regard to energy in the world. In other hearings, for example, we have heard that maybe three-quarters of all the oil reserves in the world are really now governed by states, by people like Vladimir Putin, or others who may be in charge, or Iran currently, and so forth, as opposed to there being a free-flowing market.

The testimony used to be, "After all, this is very fungible. It shows up one place, doesn't show up someplace else." But what if, as is being suggested, governments as a matter of policy simply don't develop reserves, or restrict certain areas from receiving whatever they are?

We are about to hear testimony again from Europeans that they are not only disturbed, but in some cases frightened, by the fact that President Putin suggested his emphasis might go to the Far East. Our testifiers would say, "Well, that isn't practical. The natural gas lines all go to Europe, and oil might go there." But nevertheless, even the implication that there's a possibility, that somehow if you're 80 percent dependent on natural gas from Russia, as Hungarians are, for example, or even 40 percent in Germany, that you might see your industry in real disarray while one of these experiments went on, is worrisome in this context.

In our hemisphere we don't have that kind of urgency for the moment, although in our own national situation in the United States we do have a sense of urgency. It's most often expressed by people coming into our hearings and asking, "Are the oil companies gouging me at the pump locally?" or some situation of that variety, as opposed to the overall problem of the difference between demand and supply in the world being as narrow as you have all pointed out, and the events of the day causing spikes and difficulties.

We've had a revelation, I think, as we've heard about Brazil. That's why we've focused so much on that today. The Ambassador of Brazil has visited with me and with others. Brazilian officials are noticing a more friendly attitude, that we're deeply interested in what's happening. And so as a result, why, the visitations have increased substantially. We've always been interested in Brazil, but maybe not with that intensity for a while.

I wrote an op-ed for the Miami Herald with the Ambassador of Brazil, just to illustrate the fact that two people can actually pen an article together that other people in the hemisphere might read. Just leaving aside whatever we said, just the fact that we were doing it, and the fact that this is a unique experience, illustrates what you have been saying about lack of attention, lack of intensity.

This is why I'm trying to think organizationally with our State Department. What if we do set up this new bureau and we do have this focus? Somebody has to staff it. Somebody has to call the meetings. Our role as legislators is really not administrative. We are not over there day-by-day, sort of doing the Lord's work in our diplomacy. Through these hearings we try to bring advice from people like yourselves that have seen a good bit of this situation, that might be helpful.

Do you have any further comment, Mr. Carvalho? I've already asked you so many questions, but you've been most informative.

Mr. DE CARVALHO. Mr. Chairman, you have said a lot of very important things. Let's take Minister Cavallo saying about agriculture and energy. First of all, we must understand what is the oil, what are we living.

We are living in a situation whereas there is no more surplus cushion production capacity, as you have said. It has been sharply reduced, and essentially all the oil producers don't want to have discussion. It means that increasingly oil will be more and more scarce, and there will be substitution for natural gas where it's possible to do so, or not. But then Europeans are preoccupied with the Ukrainian situation.

Now, what is oil, or what is natural gas, or what is coal? It's photosynthesis that was buried in the soil for 500 million years. Now, we have the possibility of having the photosynthesis in every agricultural field in the world produce energy.

Now, what is the problem with agriculture today? And this is a very important point, and I think that Mr. Cavallo mentioned it, and I think that David mentioned it also. It is the fact that with present agricultural technology you can produce anything. The specter of hunger, the specter of the population growing and not growing food production, that's something of the past. We have proven that we can produce whatever product is necessary from agriculture. The problem is income distribution that doesn't lead people to have access to what can be produced, which is a completely different problem.

Now, what is the problem of developing underdeveloped countries, is that those countries are able to produce agricultural products. That's what they are able to do. They cannot produce big computers. They cannot produce the big Mercedes, beautiful cars. But they can produce grains, they can produce energy, but they are induced not to produce because there are no markets, because the present agricultural markets are closed by the protection of the developing Northern Hemisphere countries. That's true. That's what happens. Where you have tariff peaks, where you have real protection which does not appear, is on agricultural products.

Now, if you take the $360 billion figure for subsidies in Europe and North America, you will understand that it's impossible for those countries in the south to produce products because markets are closed. They are only open when there is a clear interest in having this market open. The rule is to close the market.

We are seeing the present difficulties of the Doha Round of the negotiations. Unfortunately, Mr. Chairman, you are not there on the negotiations table, because I would love to have you on the negotiations table on the side of the U.S. Government, because your position is so clear, so open.

But in energy we can have a differential. Let's open up. Let's not pay the farmer not to produce, which is nonsense in the world. You pay the guy not to use the land, but let's use the land to produce energy. Let's put the subsidies not to produce competing food produces, let's use these subsidies to begin ethanol and biodiesel production, and some day in the future these subsidies will disappear.

Let's use the subsidies, not as a permanent defense to nonproductive production, agricultural production, but to induce and to enhance processes that need some subsidy to begin with, and then, 10 years from now, 5 years from now, 15 years from now, we will have increasing independence and reliability on renewable fuels to substitute the fossil ones. We have everything. We have the lands. We have the technology, and some of it must be developed. We have the goodwill of people. Why don't we do that?

So I strongly support your act, Mr. Chairman, to get together people and to try to design programs and actions that can produce this result.

Mr. GIUSTI. Could I make a brief comment, Mr. Chairman?

The CHAIRMAN. Please.

Mr. GIUSTI. This is extremely important, of course, the ethanol, and I support it in full, but we should not lose the perspective of the global picture. There is abundant oil. There is abundant gas. We may be a little bit confused because of the market that we're seeing now, but the market will change. It would take a long time to analyze the market in detail, which I of course will not try to do here, but we can speculate about that.

But one thing is clear: Oil, the oil is there. If you take proven and probable reserves and you add them up, and even taking the very ambitious profile of the International Energy Agency, oil would last for the next 50 years, even without exploration. That is not the real question, and the big oil issue is not a question.

The real question is, is there going to be the right paradigm in terms of the cooperation between the national oil companies and the international oil companies? Those two groups have their own problems. The problem and the limitation of the IOCs is access to reserves.

But then the national oil companies do not have the above ground resources, which is market savvy, financial capacity, technology, managerial and operational expertise. Some of them have. The high price is not helping, because people tend to feel that they can do everything on their own.

But I think we will evolve into a new stage when the market changes, where once again this cooperation is going to have to come about, because at the end the question is, who is in charge of supplying oil to the world? Nobody. It's only actors that have common interests that will bring about the development of these resources. And even when ethanol and other sources are going to be extremely important in the future, we still are hanging in with 25 or 30 years or even more of fossil fuels, especially oil and gas, and we have to deal with those.

The CHAIRMAN. That's a very important point, and I suppose that each of you would agree with this idea. To the extent, however, that we have vital ethanol production and alternative fuels and so forth, we're likely to have more civil conversation with all the nations about oil. That is our predicament, given the fact that we don't have any alternatives, that some people, to use a cliche, have us over the barrel for the moment.

But if in fact it was apparent that there are all sorts of ways that we can fuel our cars and other things, then oil is only one of the options we have. There probably will be a lot of years to get to that point.

On that very score, let's say that we got this energy-agriculture dialog going. Would other countries, other than the United States and Latin America, be more effective, say, in visiting with the Mexicans about PEMEX, just to take that example?

I have visited with the Mexicans, and we even raised this in this committee. They advised, "Why don't you suggest that the United States might invest $10 billion in PEMEX, to try to get the facilities up-to-date, to get the production going again, to maybe double the production? It would be good for Mexico, for the GNP of that state and all its citizens, quite apart from the hemisphere." So I raised that issue in a public hearing like this.

Well, no one in the United States pays any attention to such a thought, but they do in Mexico, and it's all adverse, with people indicating that "this is our national heritage. This is almost like Mexican blood in the soil. We don't want Americans fooling around with that." I understand that. There's a high degree of nationalistic fervor surrounding this subject.

But at the same time, in terms of the best interests of Mexico, the hemisphere, the United States, all the rest of us, it would be helpful if in fact they doubled their production, improved their facilities, and increased their national wealth. But some of you make the point, I think correctly, that maybe the posture of the United States vis-a-vis all the countries in the hemisphere is not quite the posture right now that leads anyone to do reasonable things.

I'm just wondering, is there anybody in Latin America who could visit with the Mexicans about this situation?

Mr. GIUSTI. I am sure that, if I may, I am sure that a lot can be done, and the reason is very simple. The Mexicans have realized, in a very hard way, that they have to change.

This is a country, this is a company, PEMEX, that has consumed 15 billion barrels of oil reserves in the past 15 years. They have gone down from 27 billion barrels to 12. They are seeing their future as an oil country in jeopardy, and unless they do something—because when you have to go and drill a well in these areas where they have expectations, in the Gulf of Mexico, that well will cost you even $100 million. They don't have the money. They know they need it.

I'm sure that anybody who is elected now in Mexico is going to face a very, very difficult dilemma. All of these roots that come from the early 20th century are going to have to be revised, because this nationalism is really, the way it's conceived now, it's really going to destroy the possibilities of Mexico. So I think there is room there, and especially with some of the candidates that really have a clear vision of this.

Mr. GOLDWYN. If I can join in, Mr. Chairman, I think Petrobras would probably be one company that could talk to PEMEX. Luis Tellez contributed a chapter to a book I coedited on energy and security. He is the former energy minister for Mexico.

He looked to Norway as an example of how Mexico could find a vision for state-led development of the energy sector and have the security that they wouldn't lose control of the resources, but they could develop them in a model that might be more palatable to them. It could be the former Venezuelan model, it could be the Petrobras model, or the Norwegian model. He argues that more than anything else, to leave the resources for this generation of Mexicans in the ground rather than develop it would be a waste.

If I could offer a quick comment on your previous point. If I understood you correctly, what you're proposing would be really a phenomenal act of geopolitical jujitsu. Because I think what you were suggesting is that we could mobilize the nongovernment-controlled sectors of the oil producers, and make the farmers into the energy producers, and create a constituency in each of those countries which was pro-free trade, which would be very hard for those governments to resist because they would have to in a sense oppose their own farmers who wanted to export fuel or export crops for fuel.

We have to solve the cellulosic ethanol problem in order to really be able to produce at that scale and price-competitive, but it's such a big idea, if that's what you're talking about, that I think it's certainly worth talking about because that could really be transforming not only in the hemisphere but also in Africa.

The CHAIRMAN. Well, I thank you for illuminating the idea and endorsing it so well.

Let me thank each one of you. We have another vote, and then we will have another vote, so I don't want to detain you, but we really appreciate so much your testimony, your papers as well as your forthcoming responses. We look forward to calling upon you again, if we may.

So saying, our hearing is adjourned.

[Whereupon, at 11:00 a.m., the hearing was adjourned.]

ADDITIONAL MATERIAL SUBMITTED FOR THE RECORD

PREPARED STATEMENT OF ERIC FARNSWORTH, VICE PRESIDENT, COUNCIL OF THE AMERICAS

The Council of the Americas (Council) appreciates the request of the Senate Foreign Relations Committee to provide testimony concerning energy security in Latin America and to offer comments in relation to the "Energy Diplomacy and Security Act," S. 2435. For over 40 years, the Council has been a leading voice for policy and business in the Western Hemisphere. Our members include over 170 prominent companies invested and doing business in the Americas, with a mandate to promote policy and commercial partnership in the Americas based on democracy, open markets, and the rule of law.

Since mid-2004, the Council has led an Energy Action Group, a leading public-private dialog designed to focus attention on the strategic issues at the heart of hemispheric energy issues, while providing concrete recommendations to policy makers for the outlines of a Western Hemisphere energy strategy. On this basis, in late 2005 the Council issued a well-received report with recommendations, "Energy in the Americas: Building a Lasting Partnership for Security and Prosperity," which called attention to the vital issues at stake while highlighting areas of partnership and convergence as well as areas for further attention.

ENERGY IN THE WESTERN HEMISPHERE IS A STRATEGIC MATTER FOR THE UNITED STATES

Despite other issues around the globe that demand the attention of policy makers, energy in the Western Hemisphere—whether we realize it or not—is of the highest strategic importance to the United States. We are the world's largest energy user; even if we are overtaken at some point by China, our own energy needs will continue to increase as both our economy and population grow. At the same time, though we ourselves have abundant energy resources including oil, gas, coal, and a growing potential for alternatives, we are not self-sufficient, and self-sufficiency is not a realistic goal. We are energy interdependent, and to meet our needs, we will have to continue to rely on imported energy.

The perception is that most of our imported energy comes from the Middle East, a region of constant political and military risk, making supplies uncertain. In fact, three of our top five sources of imported energy are in the Western Hemisphere: Canada, Mexico, and Venezuela (along with Saudi Arabia and Nigeria), making the Western Hemisphere a key to our economic well-being and strategic interests. If existing trends continue until 2025 or 2030, the increasing U.S. demand for energy can actually be met by sources from our own hemisphere, but only if the massive investments are mobilized that will be required to fully develop these impressive hemispheric resources. As a result, all other things equal, a more coordinated, vibrant energy partnership in the Americas based on market forces would support broader U.S. economic and strategic interests.

At the same time, the democratic development of Latin America and the Caribbean is a top regional priority for United States policy makers on a bipartisan basis, and enhanced wealth creation in the hemisphere is a critical component for that development. In fact, given significant concern in Washington with Latin America's supposed ongoing "lurch to the left," democratic development is perhaps the top regional issue facing U.S. policy makers. To put things into perspective, the World Bank recently reported that between 1980 and 2000, per capita GDP in Latin America grew, in total, less than one percent. On the other hand, over the same period of time China enjoyed per capita GDP growth of over 8 percent per year. It is in addressing this development gap, which increases every year, that energy in the

Americas becomes so important, and so relevant to broader U.S. interests in the hemisphere.

ENERGY RESOURCES EXIST, THE QUESTION IS INVESTMENT

Fortunately, including Canada's massive oil sands deposits, recoverable energy reserves in the Western Hemisphere surpass even the Middle East and dwarf other regions of the world. In terms of proven conventional reserves in the Western Hemisphere, Venezuela is at the top, followed by the United States, Mexico, Brazil, and Ecuador, and Brazil has also just announced promising additional finds. The hemisphere also enjoys plentiful deposits of natural gas—a key fuel source in terms of electric power generation. After the United States, Venezuela again has the highest level, followed in order by Canada, Bolivia, Trinidad and Tobago, and Mexico. As well, significant potential exists to produce and consume alternative fuel sources, such as ethanol, from Brazil, Colombia, and elsewhere, or coal bed methane from Canada. In terms of coal, the United States remains well ahead of our hemispheric neighbors in both production and consumption.

These resources by any measure can play an important, if not paramount, role in regional development if produced and consumed wisely. On the supply side, absent energy, the development prospects for a nation such as Bolivia, South America's poorest nation, or Ecuador, are uncertain at best. Nonetheless, recent government actions that aggressively target foreign energy investors, change the rules of the game mid-stream, or unduly politicize the energy sector and actively discourage the direct foreign investment that is required to identify, finance, and manage the energy resources that are increasingly difficult, for technological, geologic, or other reasons, to develop. In a global economy, such investment will flow elsewhere, where the risk-reward profile is more favorable.

On the demand side in the hemisphere, without greater attention to market efficiency in the development and utilization of energy resources, it will be more difficult for producers and consumers alike to build regional competitiveness in a global economy.

This directly impacts the hemisphere's ability to compete successfully against the rapidly modernizing economic giants of China and India, as well as a host of other nations. For example, Chile is now looking to ship liquefied natural gas from East Asia, incurring transportation and infrastructure costs, rather than pipe it from its neighbors, because regional gas supplies are subject to political manipulation and thus unreliable. Once new supplier relationships are established with the Far East, South American producers will be less able to sell their own products efficiently to their neighbors.

Clearly, there would appear to be a mutuality of long-term interests in the hemisphere in building energy partnership in the Americas.

The Western Hemisphere is part of a global economy, competing for the same marginal investment dollars as other geographic regions. For investors to invest, the risk-adjusted climate must be welcoming. It is therefore incumbent upon nations in the hemisphere wishing to develop their natural resources who might otherwise lack technical and managerial expertise, as well as significant capital of their own, to create an investment climate whereby foreign energy companies can work in partnership with local governments to develop their resources in a mutually beneficial manner. Attention to industry-specific and more general investment climate issues is needed: Improvements in education, training, and the rule of law; regulatory certainty; nondiscriminatory and stable tax regimes; effective personal security; anticorruption; and effective dispute resolution. Those countries which have paid attention to these matters have seen investments increase. As well, international financing institutions have an important role to play in mobilizing capital for investment.

RECOMMENDATIONS

Several recommendations flow from this analysis. First, it is self-evident that maintenance of a secure energy supply from foreign sources is a strategic matter for the United States, and energy in the Americas must therefore be a priority. Increasing partnership in hemispheric energy matters must be an important part of our overall hemispheric policy approach, not an afterthought or taken for granted. A balanced, engaged approach is needed.

Second, in a global environment, competitiveness is perhaps the key issue facing the hemisphere. High direct or indirect energy costs such as petroleum in the transport sector or power generation, respectively, impact all energy users, making the region a less attractive place to do business, and quality of life suffers, too. As well, investment climates that are unattractive compared to other countries and regions will not attract the direct foreign and domestic investment required to develop either the energy resources mentioned above nor the broader economy. Mexico, for example, despite sitting on sufficient natural gas reserves, actually imports natural gas and has done so since 2000. This directly impacts Mexico's national income accounts and their national competitiveness profile at a time when that nation, even with the NAFTA relationship with the United States and Canada, faces a direct economic challenge from China. Hopefully, we will see forward movement on these issues in Mexico after their elections in less than 2 weeks, but that remains to be seen, and of course it is up to Mexicans themselves to determine how best to develop their own energy resources.

In the North American context, energy issues are an important part of the Security and Prosperity Partnership (SPP) which the administration has rightfully made a priority, and which the Council has strongly endorsed. As in other hemispheric nations, it is difficult to see how Mexico develops if its energy reserves continue to fall due to a lack of investment in the energy sector, and an underdeveloped Mexico is of strategic concern to the United States, particularly in relation to the vexing issue of illegal immigration. But it is not just Mexico; it will be impossible to fully develop Canada's energy resources, too, unless the three governments find a means whereby labor markets and products to service the fields are made more flexible through the SPP or alternative means.

Finally, in addition to conservation, which is perhaps the top form of alternative energy available, both the public and the private sectors must do a better job exploring the possibility of alternative fuels in the hemisphere, which could prove to be a boon for development while making the region less reliant on imports from elsewhere. As a strategic matter, no less than the late George Kennan advocated an aggressive reduction in energy consumption in order to lessen our reliance on energy imports from unstable areas. He might also have considered viable alternatives in the Western Hemisphere. More recently, the President quite rightly mentioned ethanol in his State of the Union address, and he also discussed it directly with Brazil's President Lula during a short trip to Brasilia in November. Chairman Lugar has also been a strong and thoughtful proponent of these issues. The resources are there, especially in Brazil and also Colombia, particularly if a free trade agreement with the latter nation is approved that will allow importation of ethanol duty-free to the United States. What has been missing has been a market to use ethanol as well as a price point of conventional fuels high enough to make ethanol economically viable. But as oil prices remain historically high, the cost of ethanol production is now economical. As well, flex fuel automobiles, which automatically determine the proper fuel mix between gasoline and ethanol, are becoming a legitimate alternative. The question, though, is not actually about energy, but rather trade policy. Ethanol from South America is primarily made from sugar, which remains politically sensitive in the United States. Nonetheless, as a strategic matter, the issue bears active consideration.

These issues are ripe for further consideration. The energy resources exist, and so does the need. What does not yet exist, though could, is the size and quality of investment needed to develop and effectively utilize these resources. That is the real issue facing those who would promote energy partnership in the Americas.

Once again, the Council of the Americas appreciates the opportunity to provide testimony on this critical matter before the Senate Foreign Relations Committee and stands ready to assist committee members as they further investigate these important issues.

PREPARED STATEMENT OF STEPHEN C. JOHNSON, SENIOR POLICY ANALYST FOR LATIN AMERICA, THE KATHRYN AND SHELBY CULLOM DAVIS INSTITUTE FOR INTERNATIONAL STUDIES, THE HERITAGE FOUNDATION

Chairman Lugar, distinguished members of the committee, thank you for inviting me to submit testimony on this important subject—energy security in Latin America. Your hearing comes at a time when rising gasoline prices have opened our eyes to the vulnerabilities of supplies worldwide, especially those in our own neighborhood.

Speaking at The Heritage Foundation on March 31, 2006, Assistant Secretary of Energy for Policy and International Affairs, Karen Harbert, said that a secure and prosperous Western Hemisphere is vital for our national interest. Integrated energy markets, interconnected infrastructure, development of a broad range of resources, and efficient use will benefit the United States and the populations of neighboring countries.

However, there are significant roadblocks to achieving those goals. Differing philosophies about resource ownership, exploitation, and distribution within the Americas hamper the establishment of a free energy market. Weak or inconsistent governance plagues some states, thereby limiting investment and cooperation. Dwindling reserves and rising consumption generally threaten energy security where further exploration and research into fresh technologies is absent.

Keys to overcoming these impediments are more active hemispheric diplomacy, urging neighboring countries to embrace open markets, not cartels, more support for improvements in democratic governance, and a commitment to diversify energy supplies.

STAGGERING STATISTICS

Energy sources can be broken down by fossil fuels, electricity generated from renewable sources, and nuclear energy. By far, fossil fuels are the mainstay of transportation systems and electrical powerplants—our major concern.

On average, the Western Hemisphere consumes about 30 million barrels of oil per day, of which the United States uses more than 20 million barrels, two-thirds of it imported.[1] In 2005, net imports accounted for 58 percent of U.S. total petroleum consumption. According to the Department of Energy, 13 states in our hemisphere provided 49 percent of the United States' gross imports of crude oil and petroleum products. Top suppliers included Canada, Mexico, and Venezuela. These three countries accounted for 39 percent of United States gross imports in 2005, with Ecuador, Colombia, Brazil, Trinidad and Tobago, and Argentina following close behind.[2]

As economies expand worldwide, car ownership is rising and new factories require more energy. As an example of the relationship between energy consumption and growth, China's petroleum use increased by 15 percent in 2004, outpacing its 9 percent economic growth rate.[3] Without significant discoveries of new reserves or technological advances, the world will face an energy crunch.

The United States has estimated reserves of 21 billion barrels of oil (in decline since the 1970s) and 192 trillion cubic feet of natural gas. Canada has 178 billion barrels of oil and 56 trillion cubic feet of gas, making it potentially the largest petroleum supplier. Mexico has only 15 billion barrels of oil and about 16 trillion cubic feet of gas.[4] Venezuela has an estimated 77 billion barrels of oil (supplying about 7 percent of United States' needs) and about 149 trillion cubic feet of gas.[5] These, plus other known global reserves might last for 30 years or more, barring no new discoveries.[6]

OBSTACLES TO COOPERATION AND SECURITY

Countries throughout the Americas hold differing concepts of property rights and the purpose of government that impact resource use and the stability of markets. Consequently, they have sharply divergent capacities to exploit resources and pursue technological advancement.

Apples and oranges

In colonial times, Britain's weak rule permitted the growth of community governments and free commerce in the north. As a result, North Americans developed a system of property rights that protected that which was granted to, bought, or invented by an individual. Spain's military expeditions imposed centralized government and monopolies in the south. If not so stated in national charters of resulting independent nations, the right to own property was considered a concession of the state. Whereas individual citizens and private enterprises could stake claims to underground treasure in the United States and Canada, almost all Latin American constitutions made subsurface resources the property of the state.

[1] U.S. Department of Energy, Information Administration, International Energy Annual 2003, June 28, 2005, table 1.2, at www.eia.doe.gov/pub/international/iealf/table12.xls (February 10, 2006).

[2] Karen A. Harbert, "Western Hemisphere Energy Security," testimony before the House Subcommittee on Western Hemisphere Affairs, March 2, 2006.

[3] Jason Bush, "China and India: A Rage for Oil," Business Week, August 25, 2005, at www.businessweek.com/bwdaily/dnflash/aug2005/nf20050825__4692__db016.htm?chan=gb (February 7, 2006).

[4] Based on estimates from U.S. Department of Energy, "World Proved Reserves of Oil and Natural Gas."

[5] Ibid.

[6] The United States produces almost 90 percent of the hemisphere's coal and has significant reserves—but there are limits to how it can be used.

Today, property rights may be stronger in some Latin American countries than others, but minerals, petroleum, and gas are controlled by those in power. Governments predominantly own fields, pipelines, and refineries, subjecting them to political influences. Where economies are not big or free enough to support enterprises that can explore, extract, and market resources, the state offers concessions to foreign operators in exchange for part of the revenues.

These arrangements can remain stable for years. But if market prices rise, politicians may desire a bigger cut of the profits or suddenly think they have the capacity to operate such industries on their own. Ecuador's May 2006 takeover of Occidental Petroleum's concessions is an example of the latter. In Venezuela, deputy oil minister Bernard Mommer recently told foreign oil companies, "The government can promise you whatever they want—it is not binding."[7] Such caprice is an outgrowth of centuries-old personalistic rule and traditions of impunity.

Squandering profits

For years, the revenue transfer from Pemex (Petrleos Mexicanos) to the Mexican state was the epitome of industry serving a single-party state. By the time Mexico's first opposition president, Vicente Fox, came into office, Pemex was turning over more than half its revenues to the government, amounting to half the federal budget. At the same time, executives claimed it was losing about $1 billion annually to internal corruption.[8] Since then, Petroleos de Venezuela (PDVSA) has surpassed Pemex as an example of industry supporting a misguided state, but also funding the malicious agenda of an authoritarian leader.

On December 2, 2002, business and labor leaders called a national work stoppage, hoping to pressure Venezuelan President Hugo Chavez into resigning. Some 35,000 PDVSA workers walked out, temporarily slowing production. Chavez fired nearly half of them, then put the semi-autonomous oil giant under his direct control. Petroleum income now appears to support his Bolivarian social programs, foreign debt purchases, campaign contributions to leftist candidates in neighboring countries, and a worrisome arms build-up. Democratic, market-oriented Trinidad and Tobago could be a target of intimidation should Chavez decide to seize some of its adjacent offshore gas fields.

Throughout the region, Chavez plays petropolitics. In September 2003, he accused the Dominican Republic of harboring former President Carlos Andres Perez, a political foe. He then stopped oil deliveries, triggering a temporary energy crisis while Dominican authorities scrambled for new suppliers. Such turmoil helps lift prices, giving him the ability to offer discounted fuel to cooperative admirers in foreign countries, including the United States, where he can influence politic discourse and public opinion. In May 2006, he donated fertilizer and oil to Sandinista mayors in Nicaragua. Presidential elections will take place there in November.

President Evo Morales of Bolivia is headed in a similar direction, announcing the partial nationalization of gas fields in May 2006. He has so far followed Chavez's playbook in politics, announcing a constituent assembly to rewrite the constitution, inviting Cuban advisors to help run the police, and devising a scheme to redistribute land. Bolivia's pygmy economy generates about the same activity annually as Springfield, IL, and higher rents from the hydrocarbon industry could help Morales consolidate power as long as mismanagement does not put him out of business.

Markets versus monopolies. Outside of the taxes, salaries, and dividends to stockholders, private energy companies use profits to modernize equipment, service fields and mines, and conduct research in such areas as renewable energy supplies. In contrast, Mexico's Pemex still supports the state to such an extent that field maintenance and further exploration has become a minor priority leading to stagnating output. Foreign investment could help, but Mexican elites fear such an opening could lead to loss of financial control, while pliant politicians have convinced the public that national patrimony is at risk. Sadly, Mexico now imports natural gas from the United States, even though it has some 15 trillion cubic feet of reserves.

Further South, Venezuela's Chavez announced an extravagant $20 billion, 5,000-mile gas pipeline from Venezuela to Argentina that will probably never materialize.[9] More realistically, he is starting to unite state hydrocarbon industries into a cartel under his control. Petrocaribe, Petrocentro, Petroandina, and Petrosur are entities he invented under an umbrella organization called Petroamerica. Ecuador's statist

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[7] Thomas Catan and Andy Webb-Vidal, "Caracas warns oil companies of more tax increases," The Financial Times, April 11, 2006, p. 11.

[8] Tim Weiner, "Corruption and Waste Bleed Mexico's Oil Lifeline," The New York Times, January 21, 2003, p. 1.

[9] The gas pipeline will be more expensive to build and operate than liquefying and shipping gas. "The Explosive Nature of Gas," The Economist, February 11, 2006, p. 36.

oil and Bolivia's hydrocarbon industries are good candidates for membership. Argentina, Uruguay, Central America, and many Caribbean states with few or no resources could make up the client base. High prices outside the cooperative would support subsidies within. But attendant corruption, mismanagement, and lost foreign investment could also provoke collapse.

Energy-hungry China, the world's fourth largest economy, is another power player on the state industry side of the ledger. China has pursued petroleum partnerships with Venezuela, Ecuador, Colombia, Argentina, Brazil, Mexico, and most recently Cuba, where it could soon be drilling in the Florida Straits, 50 miles from United States shores. China's state-to-state business deals reinforce the region's tradition of centralized decisionmaking and anti-competitive practices.

JUMPING THE HURDLES

Rising global consumption and the emergence of powerful new economies mean that timely adoption of effective energy strategies is crucial. The best way to assure sufficient resources is to foster competition and let markets respond to needs. And while prospects for much of the region seem grim based on prevailing anti-market policies in neighboring countries, the United States has reliable energy partners in market-oriented Canada, Trinidad and Tobago, and even statist Mexico, Colombia, and Peru. Brazil could become an important associate in developing new supplies of ethanol, a product that involves more private enterprise than government monopoly. To move the ball forward, the United States should:

- *Embrace regional energy diplomacy.* Right now Venezuela's Chavez has seized the initiative by developing monopolistic arrangements in Latin America. As suggested by the proposed Energy Diplomacy and Security Act (S. 2435), the U.S. Departments of State and Energy could promote a hemispheric energy security forum to encourage collaboration among willing states on competitive energy markets, attracting investors, replacing monopolies with regulatory authorities, and sharing information and research—as some Latin American countries have attempted to do before without much success. The U.S. Congress should support those and existing multilateral diplomatic efforts with adequate funds for travel and dedicated personnel.
- *Urge neighboring countries to embrace free markets, not cartels.* Eventual adoption of stronger property rights and competitive enterprise is the key to spreading prosperity through jobs and ownership. One way to make state energy monopolies truly public is to distribute company shares among the country's voting population. The government's role then converts to regulation. United States public diplomacy could help Latin American publics understand such concepts.
- *Consistently support improvements in democratic governance.* Since elections took place in the majority of Latin American nations in the 1990s, United States support for checks and balances, constituent representation, transparency, and rule of law has been spotty. Development funds have been shifted to serve other regions of the globe while big dollar environmental and health programs have dominated Latin American assistance efforts. The U.S. Secretary of State should ensure that development programs in Latin America help consolidate deeper democratic traditions to bring voters of all classes and income closer to their governments and diminish the appeal of authoritarian populists.
- *Promote diverse energy supplies.* At home, the U.S. Congress should end the 54-cent per gallon tariff on sugarcane-based ethanol meant to protect U.S. corn farmers. There are other uses for corn besides making ethanol. The United States, Caribbean and Central American allies, and Brazil could then collaborate in developing ethanol markets to free each other from Hugo Chavez's extortionist petropolitics. American lawmakers should ease complicated regulations that limit refinery expansion and mandate complicated regional recipes for gasoline that have made it difficult for existing refiners to meet growing demands. By equal measure they should make further exploration possible for responsible extraction of fossil resources.

CONCLUSION

According to the United States Department of Energy, Latin America will require nearly $1.3 trillion in energy sector investment between now and 2030. Unfortunately, high oil prices have resulted in a resurgence of government control over industries and the rise of populist, authoritarian leaders in Venezuela and Bolivia. Outside of the hemisphere's market economies, needed investment will probably not occur. While the United States cannot rescue every neighbor from bad decisions, it can encourage cooperation among allies in making ones that will help sustain growth and broaden prosperity.

As responsible neighbors, we must agree on policies that allow market forces to shape demand, guide energy users in changing consumption habits, and promote the development of new technologies such as fuel cells and hydrogen power. Considering the emergence of powerful global economies and expanding populations in our own hemisphere, there is little time to lose.

Again, I appreciate the chance to provide testimony on this important topic and commend the committee for its work.

PREPARED STATEMENT OF JOHANNA MENDELSON-FORMAN, PH.D., SENIOR ASSOCIATE, CENTER FOR STRATEGIC AND INTERNATIONAL STUDIES, WASHINGTON, DC

My name is Dr. Johanna Mendelson-Forman. I am a senior associate at the Center for Strategic and International Studies, and formerly the director of Peace, Security and Human Rights Programs at the U.N. Foundation. I am an expert on post-conflict reconstruction issues, security and development, and a Latin Americanist by training. I appreciate this opportunity to provide the committee with written testimony.

For the last decade I have worked on security issues in this hemisphere and in Africa. My work on peace building and development have led me to conclude that among the most important relationships that can ensure a durable peace is by using the issue of energy supply as a tool for building security and development. A secure source of energy in a country emerging from war can mean the difference between a safe environment and one riddled by crime. Giving communities access to electricity and lighting can reduce criminal activity that often frequents war zones.

Using the potential of renewable energy, we have also learned that creating products like ethanol and biodiesel can provide a ready means of employment of demobilized soldiers and combatants. Not only will growing the feedstock for biofuels allow people to earn a decent living and provide immediate job security, but it is also clear that renewable biofuels can support transportation. Biodiesel is easily used in trucks and cars with diesel engines. Little refining is needed for this product. And helping farmers produce crops that can be converted to bioenergy also gives these individuals a chance to export products to a world market where alternative fuels are in high demand.

Unfortunately, our planning for reconstruction has often overlooked what has become very clear in the last few years of soaring energy costs, and less reliable sources of fossil fuel. In Africa, the Caribbean, and many parts of Southeast Asia, the climate is ripe for converting sugar and other crops into fuel. And the appropriate use of biomass energy, while used at a community level, could also be expanded to ensure that all people have access to fuel for cooking.

Not only does an energy and security approach benefit the war-affected country, but it also has the ability to create work, serve as a poverty alleviation tool, and provide a means for energy deficient countries to rise from dependence on fossil fuels. In the recent World Bank Report on biofuels the Bank economists calculated that for every unit of energy produced from agricultural crops you create 100 new jobs. The 25 poorest countries, many of which are also conflict-ridden, are also bereft of natural resources for energy generation. A focus on renewable sources of energy helps to promote peace and a more stable economy. Development of an indigenous biofuel industry could provide the last best chance for highly indebted nations to reduce the burden of paying for high priced energy derived from fossil fuels, thus permitting precious state funds to be used on social and economic development.

One need only look at our own hemisphere to comprehend the linkage between energy and security in the last few years. The Caribbean, our third border, is a region ripe for the creation of a huge biofuel producing zone. Today it still lacks the adequate infrastructure or investment to start the process in a systematic or coherent fashion. But a policy that promoted an energy zone in the Caribbean would go far in supporting the concept behind the legislation introduced by Senator Lugar.

Weak states and the increased vulnerability that many Caribbean islands have to drug traffickers and transnational crime also further complicates the situation when little funds are left to fight these kinds of problems when resources are going to pay for energy costs. Regional dependency on fossil fuels among almost every Caribbean island (except Trinidad and Tobago which has oil and natural gas) makes all these nations vulnerable to the petroleum diplomacy of President Hugo Chavez of Venezuela who has provided cheap subsidized fuel from Venezuela to win over support for his political agenda in the Americas. Subsidized Venezuelan oil gives Chavez an important leverage point for political gain as so many of these island states have come to rely on him to meet their energy needs. This situation further exacerbates United States relations with many Latin American states who see their need for oil as a trade-off between support for the government of Hugo Chavez and their own need to maintain good relations with the United States.

TRANSNATIONAL THREATS AT THE THIRD BORDER

Without a stable supply of energy for oil dependent nations of the Caribbean, existing problems will only be exacerbated by the shock of economic instability coming from fluctuating oil prices. A majority of Caribbean states experience problems that already impact U.S. national security and well-being, with significant potential growth:

- Weak or failing states (Haiti),
- Potential launching grounds for terrorist activities,
- Transshipment of narcotics,
- HIV/AIDs,
- Illegal immigration,
- Transshipment of weapons, and
- Safe havens for criminal activities such as money laundering.

Even though many Caribbean islands have experienced economic growth over the past decade, these gains are now in jeopardy as short- to medium-term high-priced fossil fuels and long-term depletion concerns threaten economic sustainability. Only with specific interventions to protect island economies through alternative energy sources will the Caribbean be able to sustain economic growth. Also, a move toward energy independence will promote security through generating development and stability.

Access to energy has also served as both a stick and a carrot for United States policies in the Latin American region. Currently, United States dependency on oil produced in Venezuela has created turmoil in our policies to democratic development and democracy promotion. The Caribbean, in particular, has been a focus of the use of oil as a carrot through potential political endorsement at the regional and international levels. The potential for the use of Caribbean oil dependence as a stick is inherent in the lessons from the recent experience of the Russian shut-off of Ukrainian gas supplies, and not a relationship conducive to United States national security.

I will use the opportunity of this testimony to describe two important cases. The first will discuss the potential for using alternative energy production as a means of saving Haiti from state failure, while also providing the Dominican Republic with an important export market for its sugar production. Combining peace building and renewable energy may very well save Hispaniola from the long-term prospect of state failure and decline.

The second case will discuss how in Bolivia, a country where the United States Government spends millions of dollars on coca eradication and crop substitution, that a better way to approach this problem may be through a focused project for renewable energy that would use feedstock that could be converted into ethanol, and then used for both domestic and export markets. The world demand for ethanol continues to grow each day, and giving Bolivian peasants a chance to grow crops whose export value is high, and where demand is insatiable, affords a brighter alternative for development than our current crop substitution programs provides.

1. Saving Hispaniola

An island-wide project on bioenergy could create significant benefits for peace and security. Not only would the development of alternative energy sources benefit the Dominican Republic, it may also lay the foundation for greater cross-border collaboration with Haiti. The continued deterioration of political, economic, and environmental conditions in Haiti creates strain on the Dominican Government as continued migration across a porous border, transshipment of illegal narcotics, and the vulnerability to spreading issues of HIV/AIDS and violence rises. The benefits of biofuels for energy self-sufficiency and poverty reduction would potentially also be available to Haitian communities at the border. Such a situation could lead to a wider effort to use energy as a bridge to peaceful relations between the two nations and improvement of the Haitian economic and social situation.[1]

CONTEXT

The Dominican Republic is a poor island nation that has experienced remarkable economic growth in the last few years. Agriculture and sugar in particular, has been

[1] Information for this section is derived from a field assessment performed by the author, and Dr. Daniel de la Torre Ugarte and Ms. Charlotte McDowell for the U.N. Trade and Development Agency (UNCTAD) and the U.N. Foundation Biofuels Initiative in November 2005.

replaced by free trade zones and a range of service industries as the main revenue generating businesses as the primary source of export earnings. Yet, according to the 2005 National Human Development Report, the Dominican Republic's shift to these industries was accompanied by considerable social upheaval and scarce human development. The accelerated and unplanned growth of the tourism sector has created problems of resource overexploitation, citizen insecurity, and the predominance of enclave economies, and is seen as unsustainable in its current form. The free trade zones have been stagnating and are losing competitiveness in relation to other countries, and job creation has been greatest in the informal sector, thereby prompting the deterioration of quality of employment and living conditions for the majority of the population.[2]

But sustained economic growth and social integration in the Dominican Republic will require the resolution of two important issues: Energy and the political crisis in Haiti. Without a source of fuel to generate electricity, the Dominican Republic will be unable to grow its important tourism industry, let alone in an environmentally sustainable and socially responsible manner. Unless the downward spiral of Haiti is stopped, the proximity to a failed state at its border will continue to put pressure on the Dominican Republic through unabated migration of Haitians that continues to tax an already underfunded public sector and is the cause of much social tension. Thus, without alternative energy sources, economic development will remain illusive, and unless the Haitian border is converted into a zone where projects that generate employment and energy on both sides, there will be little hope for long-term economic progress and social stability.

ENERGY NEEDS

The dramatic rise in oil prices over the last 6 months has precipitated a crisis in the energy sector. Over 80 percent of the Dominican Republic's energy comes from petroleum products. As the price of oil has increased so has the Nation's debt. With no other immediate energy source, the Dominican Republic is now searching for sustainable alternative energy supplies that can mitigate the effects of its oil dependency.

Bioenergy is not a new idea in the Dominican Republic. Its large sugar plantations have already attracted the attention of investors. But to date no large-scale conversion of sugarcane to ethanol has occurred, as the United States' quota system, the possibility of gaining preferential market access to the European Union, and the domestic price support provided by the Dominican Government combine to create prices well above world market levels. These conditions have delayed investment considerations on biofuels, and therefore thinking about biodiesel fuel is relatively new and limited to small scale projects.

Yet all this may change, based on information gathered on the recent visit to the Dominican Republic. Not only is there a new consensus at the highest political level that alternative energy is a priority issue, but it is also clear that the most recent increase in oil prices has strengthened the hand of President Leonel Fernandez to take steps regarding the energy crisis. These steps will ultimately result in important conservation initiatives such as allowing combined ethanol-gasoline mixtures. He has also supported the National Commission on Energy to coordinate the government's response to the island's energy needs. On November 8, the President signed an agreement with President Uribe of Colombia in which Colombia will provide energy assistance and the transfer of technology for ethanol production. It is also clear from the number of Brazilian investors knocking at the doors of government agencies that the time for biofuels has arrived in the Dominican Republic.

POTENTIAL FOR AN ISLAND-WIDE PROJECT

Another compelling reason for considering the Dominican Republic for a pilot case for the biofuels initiative is that it shares an island with one of the most environmentally devastated nations on earth—Haiti. After years of neglect, internal conflict, and entrenched poverty, Haiti's problems have compounded the urgency of finding alternative energy sources that would serve the needs of both Haiti and the Dominican Republic. Projects that used the development of renewable energy resources between both countries could also have a positive impact on resolving some of the more intractable political problems. Solving the energy needs of both the Dominican Republic and Haiti could also lead to some innovative models of peace building. Bringing citizens together around common problems, such as the lack of electricity or fuel, can potentially create solutions that politicians may be unable to resolve.

[2] UNDP National Human Development Report, Dominican Republic 2005.

PRODUCTS: ETHANOL

Sugarcane has historically been one of the most important agricultural products of the Dominican Republic. During the mid-1980s, sugar accounted for 85 percent of the country's export earnings. However, sugarcane production peaked with the 1982 output of 11.8 million metric tons, and in 1993 the amount of land planted with sugarcane peaked at 234,000 hectares (736,000 MT).

Currently, the sugar industry is far from these levels, with production reaching only 5.3 million metric tons and a total of 135,000 hectares planted with the crop. This loss in both land utilization and productivity has resulted from several factors: The reduction of the export quota to the United States, world overproduction of sugar and therefore falling international prices, the arrival of non-sugar sweeteners, lack of investment in the sector, and unsuccessful privatization efforts.

Given the experience of sugar production in the Dominican Republic, these gaps between historical and current sugar production raise the question of whether conversion of sugarcane to ethanol provides an alternative for revitalization of sugarcane production. The answer to this question is complex, as there are two clearly distinguishable producer groups with diverse interests. On one hand are large, modern, integrated producers, and on the other hand are colonos: Independent landholders that received land from the privatization of land previously owned and operated by the government.

Most of the current domestic market and sugar export quota is filled by the production of the modern sector, which also absorbs about 30 percent of the colonos' production. These producers sell at prices well above the 15 cents per pound that characterizes world markets. This access is to a large extent a function of their control of marketing and distribution systems in both the domestic and U.S. markets.

For these modern producers, the conversion of sugar to ethanol is not an immediately attractive venture. Ethanol would garner prices for sugarcane below 12 cents per pound, compared to the current price of nearly 20 cents per pound. Even when considering expansion of productive capacity beyond the traditional sugar market, it would not be possible to recuperate the capital investment required for the conversion to ethanol within the expected time frame to recoup their capital investment of 7 years. In summary, modern producers do not see themselves as pioneers of ethanol production in the Dominican Republic.

The other important producer group is the colonos. They represent approximately 60,000 hectares of sugarcane land. The colonos view the conversion of sugarcane to ethanol as a way to develop a market for the sugar they currently produce or could potentially produce on fallow land. They are confident that a long-term plan for ethanol would allow them to invest in sugar productivity that would yield more than 60 MT/ha, a level nearly double their current yield of 32 MT/ha. This would allow colonos to produce sugar for ethanol at levels that would be profitable for private investors. The aim would be to supply enough feedstock for at least three plants of 1 million metric tons. However, one of the challenges facing the colonos is their lack of control of processing facilities needed for both sugar and ethanol.

Although foreign private investors have shown interest in establishing ethanol conversion plants to process the colonos' harvests, the issue still remains on how to coordinate between producers and processors to maintain a stable long-term agreement on the price and supply of feedstock. Potential investors have indicated the need for a clear institutional and legal framework for biofuels, as well as the need for specific incentives for ethanol production. The level or type of incentives required to make these investments feasible is unclear.

In any case, utilization of bagasse for the cogeneration of electricity is viewed as necessary complement of ethanol conversion facilities. The level of electricity generated beyond the needs of conversion facilities would depend on the efficiency of the boilers and the size of the plants.

Finally, there is support at the country's only oil refinery (REFIDOMSA) for the use of ethanol in a fuel blend of up to 10 percent with gasoline. The refinery has already drawn up plans for developing the infrastructure to store and blend either local or imported ethanol with gasoline in preparation for the possibility of low-priced ethanol.

BIODIESEL

There is nearly common agreement on the part of all public and private actors in the biofuels sector to support production of biodiesel. The area known as the "linen del noroeste" (northwest line) is viewed as one of the areas with greatest potential, and is also one of the most economically depressed areas of the country. This region includes a significant amount of idle land suitable for the production of Jatropha, castor, coconut, and other species rich in oil content. To a large extent, the enthusiasm for biodiesel production is rooted in its potential to provide not only a cleaner and renewable source of energy, but also in its potential to generate economic development in the region and to recuperate eroded areas. The transparent integration of biodiesel into the current distribution and utilization system is also perceived as an important advantage.

While there is much more agreement regarding the potential production of biodiesel than there is for ethanol, there is less specific information. The Ministry of Agriculture is currently in the process of assessing the resource potential for these and other species, as well as regions in the country suitable for production.

Various stakeholders expect that the oil crops used as feedstock for biodiesel would be largely produced by small farmers, and that the cost of the feedstock would be compatible with small scale, less capital intensive conversion processes.

Some of the oil crops that are endemic to the Dominican Republic and Haiti, such as Jatropha, could also play a significant role in recuperating degraded soils and slopes, thereby alleviating a significant environmental problem for both countries.

INTEGRATED DEVELOPMENT OPPORTUNITIES

There are currently various cases in the Dominican Republic of small scale alternative energy projects aimed at creating energy self-sufficiency in rural areas by utilizing biomass. These projects range from development of biodigestors by the Organization of American States' Inter-American Institute for Cooperation on Agriculture (IICA) to research by the University Institute of Technology (INTEL) on the possibilities for generating energy from various seaweed species. Additional reports of individual communities that have developed solar power capabilities with the support of Peace Corps volunteers and have been demonstrating their results to interested members of other Dominican and Haitian communities, indicating that further small-scale projects have yet to be disseminated and replicated.

The proliferation of such small-scale, development-oriented projects indicates the need for coordination of researchers and practitioners in the interests of creating dialog on existing efforts. Both the UNDP country office and the Dominican Global Foundation for Democracy and Development expressed interest in potential joint support of a series of conferences to generate knowledge-sharing and cooperation on such projects.

A Haitian-Dominican private-sector and NGO consortium is also currently seeking funding for a planned cross border community-based biodiesel project.[3] This effort has been presented to the local UNDP office as well as the European Community for funding. The project would initially work to develop jatropha, sweet sorghum, and castor beans to generate biofuels for community-based consumption on both sides of the border. They have also drawn up plans for a potential ethanol project that would utilize mobile mills to be deployed across the border to Haiti to overcome infrastructure problems and provide for Haitian laborers in their native communities to gain employment. The UNDP office has reportedly secured a European contribution to this project that should become available by the end of the year, and is looking to their own ability to provide small grants to such an effort and related energy sector projects. Both the NGO itself and the UNDP office expressed the need for additional technical support for this project.

Aside from this potential project, other U.N. offices have limited activities in the area of energy. FAO is in the initial stages of considering the impact of renewable energy projects in the Dominican Republic. In 2004, they published a report on the rehabilitation of the Dominican sugar industry and a socioeconomic survey of the small-scale sugar growers that could be relevant to an ethanol-based project, and have also made important contacts with both the political and agricultural community. For its part, the UNDP has been working in the area of energy to a limited degree through its small grant program, but efforts have been primarily in the area of electrification of rural areas and solar projects. The potential for collaboration with the UNDP through the small grants program and technical support or information-sharing appears to hold positive partnership opportunities rather than the duplication of efforts.

Environment for change

The legal-regulatory environment has the potential to assist biomass energy alternatives. As early as 1949, a law was passed regarding ethanol-gasoline mixtures for automobiles. Even before this current crisis, the government of former President Hipolito Mejia signed an executive order in 2002 that would provide tax exemptions

[3] The Consorcio Tecno-DEAH is supported by the Dominican Institute of Integrated Development (IDDI), and directed by Omar Bros, Flanz Flambert, and Alex Rood.

to businesses for developing technical facilities to mix ethanol with gasoline.[4] In October 2005, President Fernandez issued an executive order that created technical requirements for the mixing of ethanol with gasoline, and also set specific guidelines for mixture that would allow up to 10 percent ethanol to be mixed with gasoline.[5] While this was an important step and signaled to refiners that ethanol mixtures are allowable, the actual decree does not mandate immediate implementation.

In terms of trade, the Dominican Republic has access to preferential and growing United States markets for ethanol through the provisions in the Caribbean Basin Initiative and the CAFTA–DR agreement. Because the legal import quotas of these initiatives are expressed in percentages, as the U.S. market continues to grow, the absolute amount allowed for duty-free imports will also grow. The United States recently passed a renewable fuels mandate of 7.5 billion gallons, which may provide a significant export opportunity for countries such as the Dominican Republic.

1. Caribbean Basin Initiative—The Caribbean Basin Initiative was established in 1983 to promote "a stable political and economic climate in the Caribbean region." As part of the initiative, duty-free status is granted to a large array of products from beneficiary countries, including fuel ethanol under certain conditions. If produced from at least 50 percent local feedstock (e.g., ethanol produced from sugarcane grown in CBI beneficiary countries), ethanol may be imported duty-free to the United States. If the local feedstock content is lower, limitations apply on quantity of duty-free ethanol.

Nevertheless, up to 7 percent of the U.S. market may be supplied duty-free by CBI ethanol containing no local feedstock. In this case, hydrous ("wet") ethanol produced in other countries, historically Brazil or European countries, can be shipped to a dehydration plant in a CBI country for reprocessing. After the ethanol is dehydrated, it is imported duty-free into the United States. Currently, imports of dehydrated ethanol under the CBI are far below the 7 percent cap (approximately 3 percent in 2003). For 2003, the cap was about 150 million gallons, while only about 60 million gallons were imported under the CBI. Dehydration plants are currently operating in Jamaica, Costa Rica, and El Salvador.

2. CAFTA–DR—The Free Trade Agreement with Central America and the Dominican Republic (CAFTA–DR) does not increase overall access to the United States ethanol market. The agreement allows the Dominican Republic and Central American countries and to share in the CBI quota, but does not increase the quota.

Whether through CBI or CAFTA, the vehicle currently exists to utilize export potential to the U.S. as a means to generate the volume and experience required for a viable domestic ethanol industry.

Public opinion

Public awareness of the energy crisis is at best a financial issue. The price of gasoline at the pump has impacted lower income families with one car and the price of public transportation. It has also affected the cost of electricity, exacerbating what is already one of the highest electricity costs in the region. Energy conversation as a public policy is still in its initial phases. The government has chosen to educate consumers about saving energy through public service announcements and billboards. The National Energy Commission published a consumer guide, but it is unclear who actually has read it, or the degree of its dissemination nationwide. What is clear is that environmental considerations for clean energy are less evident, though many nongovernmental organizations exist with a mission to promote conservation of natural resources, forest land, and soil.

For the Dominican Republic, the challenge is one of timing and creating a consensus around what steps are needed immediately to ensure reduced demand for gasoline and electricity. The social impact of closing gasoline stations is dramatic. From the time that the President ordered service station closures until the week of November 20, 2005, newspapers reported a 34 percent decline in gasoline consumption. But progress on this front will ultimately impact the economy as fewer individuals are mobile on the weekends, especially during the key holiday shopping season.

Another challenge for the Dominican Republic will be to find a way to service the debt it has incurred in the electric sector. According to interviews and newspaper accounts, the government has a half-billion dollar shortfall in electricity revenues, something that continues to prevent adequate and continuous production of electricity. That situation, coupled by a 40 percent loss of electricity through distribution inefficiencies and illegal tapping of power lines, has created an unworkable situation in a country where fossil fuels are essential for power.

[4] Decreto No. 732–02, 2002 (September 10).
[5] Decreto No. 566–05, 2005 (October 11).

Foreign investment opportunities

Internationally, the conditions in the Dominican Republic have attracted the attention of foreign investors who see the potential for bioenergy and are aggressively pursuing government offices in search of contracts and long-term arrangements to reap the rewards of ethanol production. Brazil has been especially evident in its trade missions to government offices and to private sector investors as that nation have both the technology and the ethanol that could jump-start the production of fuel mixtures. A joint Belgian-Spanish private sector endeavor has plans for immediate construction of a 100,000 ton ethanol plant, along with support of the sugargrower federations, although the actual start date of construction is uncertain.[6]

How much foreign investment will help move the Dominican Republic toward energy independence is still unknown. In our conversations with government officials and private sector individuals, there was a more marked interest to pursue biodiesel as a first solution to high petroleum prices. Indeed, there was broad consensus about biodiesel as a major approach to the immediate energy needs because of the lower necessary investment for production. Additionally, the land needed for biodiesel production could be less arable, and even arid, given the current sources of oil from nut-bearing plants like Jatropha and Castor bean. Even though ethanol was on everyone's agenda, it was also evident that it would require much larger investments to start production on any larger-scale program.

Potential funding mechanisms

It is very likely that biofuels-related projects would have access to the Clean Development Mechanisms (CDM) of the Kyoto Protocol. Access to these mechanisms could provide marginal revenues that would reduce investment risk for biofuels projects. However, gaining access to these funds is not a trivial task: It requires the estimation of environmental impacts from a baseline situation and is a complex process that could delay or even limit access to projects in the Dominican Republic. There is also a need to access long-term financing that could make projects viable with significant investment in fixed assets over a longer-term repayment period than private investors are willing to offer. Due to their potential environmental and social impacts, some of these projects could be particularly suited to "socially concerned" investors.

Government position today

President Leonel Fernandez has laid a strong foundation for a new energy policy in the Dominican Republic. With an eye toward good governance and insistence on using a National Energy Commission to unite his key ministries, he has created a sense of urgency and collaboration on the need to solve the energy crisis that was evident in all our meetings, from the Foreign Ministry, to Agriculture, to Industry and Commerce. Every government leader sees himself or herself as a stakeholder. It would be too easy to say that coordination and information sharing is complete, however. As in any bureaucracy, there are gaps in communication, and a lack of understanding in specific issue areas. Yet given the nation's history of having suffered a long period of authoritarian rule, followed by a series of centralized government authorities, the situation under Fernandez' leadership provides the basis for eventual success in developing a much higher degree of energy independence.

The political component of Fernandez' mission is also important. Unlike his predecessors, he recognizes that any energy solution in the Dominican Republic must also embrace the actual situation in Haiti. His approach to securing an energy future of Hispaniola is genuine, and though an uphill battle, is sensitive to how his Haitian neighbors affect not only the Dominican Republic's own social climate, but also its potential as a place for foreign direct investment.

Challenges

Key challenges for 2006 will include:

- Developing an integrated strategy among government agencies and public groups on an appropriate and measured policy framework for bioenergy and other alternative sources, from photovoltaic to wind energy.
- Encouraging small-scale projects that provide immediate energy cost relief to the rural areas, such as methane farms, and other types of biomass projects that can help local producers.

[6] The venture was agreed to by ALCOGROUP of Belgium, an ethanol producing and distributing company, and Tomas Destil of Spain, a specialist in engineering and manufacturing of alcohol distillation plants. The plant was originally scheduled to be under construction in September of 2005 and to go online in the last trimester of 2006.

- Creating a public campaign that supports the eventual conversion of sugar to ethanol, while also engaging larger producers and independent sugar growers in a dialog about the timing and sequencing of such conversion.
- Developing an immediate program to launch biofuels as a means to generate electricity in its national power system.
- Providing broad citizen education at all levels of schooling that support energy conservation.
- Working with the international community to ensure that the efforts in the Dominican Republic are captured so they can be applied and refined for use by other small island states.
- Creating a binational commission after the Haitian elections that uses the current energy crisis as a means to rebuild trust and confidence between the two nations, thereby creating a new pathway for engagement and dialog.

The Dominican Republic is ripe for new energy opportunities. It was easy to engage leaders, NGOs, the private sector, and academics on the importance of energy independence. If the high price of fossil fuels continues over the long-term as experts predict, it will be even more urgent to consider the leadership of the Dominican Republic, through its President Leonel Fernandez, as a role model for working toward short-, medium-, and long-range solutions to current conditions.

2. Ending addictions and creating new markets: Biofuels for crop substitution

The United States has two addictions: One to oil and the other to drugs. In his State of the Union speech in January, President Bush announced that the United States must end its addiction to oil. And he advocated agricultural crops as alternative energy sources. What he failed to note is that those same crops could also address another addiction—cocaine.

A proposal to encourage Andean growers to substitute grasses that can be converted to ethanol for the lucrative coca plant could help address the scourge of cocaine. With a world market suddenly craving ethanol, not only would farmers have a crop with insatiable demand, but growing it would provide a legal, sustainable income. This two for one result could form the foundation of an approach to Latin America that promotes the region's need to address security, poverty reduction, energy needs, and sustainable development.

Our dependence on imported petroleum from conflict areas must end. There is no better opportunity than in our own backyard. The Caribbean and Central America are especially ripe for a full-blown energy policy that uses the agricultural resources already in place—sugar and oil palms—to support ethanol and biodiesel industries that will reduce dependence on fossil fuels, create employment, and address an ever-increasing demand for sustainable energy from renewable resources. And the Andean region, where hundreds of hectares of illegal cocaine are grown and destroyed, the potential to convert these plants into biofuels for transportation could transform the economy of the entire region.

With $70 a barrel oil, and no end in sight, the Caribbean nations are quickly turning to biofuel production as an alternative to their mono-economies based on sugar and tourism as the hope of the future. And high oil prices make using sugarcane even more profitable for regional producers to make ethanol than to import fossil fuels. With the market for Caribbean sugar limited in Europe and the United States, small producers are making the switch. St. Kitts and Nevis have already diverted their sugar harvest to ethanol, and larger islands like the Dominican Republic and Barbados are exploring such prospects, while also thinking about ways to convert other sources such as palm oil to biodiesel. This model could also be replicated in the Andean countries, where large scale production of feedstock for biofuels opens an entire new market for international trade and development.

Brazil began tapping ethanol more than three decades ago. More than 40 percent of Brazil's energy comes from green sources, compared with 7 percent in the developed world. It plans to become energy self-sufficient this year, a landmark accomplishment. The country has developed ethanol technology and is aggressively marketing its technology to other countries, particularly the Caribbean. The efficiency of converting sugarcane into ethanol is enhanced by using the waste, bagasse, to fuel the entire process, thereby eliminating the dependence on fossil fuels and reducing energy costs.

Even with the second largest supply of natural gas in the hemisphere, Bolivia still remains dependent on foreign oil sources for transportation. If a program to encourage energy self-sufficiency were launched with a way to generate better livelihoods for those currently growing coca plants, the potential for creating a drug-free zone in the Andes would carry with it energy independence.

An enlightened new policy toward our Latin American relations must attack our addiction to oil and drugs in a way that also addresses United States national security concerns. Biofuels are part of the solution. Continued income inequality produces political unrest which can prepare the ground for terrorism to take root. And corruption that arises from the trade in illegal narcotics, porous borders, weak governance, and continued regional dependence on Venezuelan oil weaken the United States' ability to leverage its influence in a region where our national interests remain an integral part of our own post 9–11 security agenda.

A Latin America policy that anchors itself on the development of alternative energy sources such as ethanol and biodiesel not only addresses the challenge of the future energy needs, but also becomes a major tool for development, poverty reduction, and regional diplomatic and commercial cooperation.

A renewable energy policy for the hemisphere—especially the Caribbean and Central America, and the Andean region—developed in close cooperation with Brazil will also confront some of the major threats that we face now:

- Energy self-sufficiency as oil supplies are being depleted, a reality in some countries as early as 2025.
- Poverty reduction and the creation of sustainable livelihoods through development of highly marketable products—the demand for which grows steadily as China, India, and other countries expand rapidly.
- An alternative to the expansion of nuclear energy in poor countries that can ill-afford the construction, let alone the maintenance, of nuclear power plants.
- Ending the tyranny of drug cartels that corrupt security forces, and victimize growers who have few viable economic alternatives in farming.
- Reducing the risks of failed states, especially in the Caribbean.

The president's message of ending addictions should be taken at face value. Isn't reducing poverty and income inequality, while also ending the vagaries of global petroleum supply, a good approach to our hemispheric security policy?

Thank you for allowing me the opportunity to propose some new approaches to an old problem. The time is ripe for creative thinking about how to use energy security as a keystone in our approach to hemispheric issues, to build stronger ties with our neighbors, and to promote programs that reinforce policies that prevent terrorism from taking root in our own backyard. The surest way to that goal is by engaging in an enlightened development program in the Americas that makes renewable energy the core of its approach and provides opportunities for public-private partnerships to ensure that within the next decade we live in a region no longer dependent on fossil fuels for transport and for living.

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