

**TESTIMONY PRESENTED  
TO  
THE SENATE COMMITTEE ON FOREIGN RELATIONS  
“ENERGY AND SECURITY IN LATIN AMERICA”**

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**Johanna Mendelson-Forman, Ph.D.  
Senior Associate  
Center for Strategic and International Studies  
Washington, D.C.  
Johanna@jmendelsonforman.com**

## *Introduction: Energy and Security in Latin America*

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 UN 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 peacebuilding 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 U.S. 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 US 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 US policies in the Latin American region. Currently, US 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 US 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 peacebuilding 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 U.S. 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.<sup>1</sup>

#### *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 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.<sup>2</sup>

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

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<sup>1</sup> 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 UN Trade and Development Agency (UNCTAD) and the UN Foundation Biofuels Initiative in November 2005.

<sup>2</sup> UNDP National Human Development Report, Dominican Republic 2005

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 under-funded 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 six months has precipitated a crisis in the energy sector. Over eighty 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 sugar cane to ethanol has occurred, as the U.S. 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 bio-fuels, and therefore thinking about bio-diesel 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<sup>th</sup>, 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 bio-fuels 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 peacebuilding. 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.

### *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% 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 US, 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 US 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 seven 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 with 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 one 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 “*línea 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 (INTEC) 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 dialogue 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.<sup>3</sup> 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 UN 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 to businesses for developing technical facilities to mix ethanol with gasoline.<sup>4</sup> In October 2005, President Fernandez

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

<sup>4</sup> Decreto No. 732-02, 2002 (September 10)

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.<sup>5</sup> 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 US 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 US market continues to grow, the absolute amount allowed for duty-free imports will also grow. The U.S. 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% local feedstock (e.g., ethanol produced from sugar cane grown in CBI beneficiary countries), ethanol may be imported duty-free to the US. If the local feedstock content is lower, limitations apply on quantity of duty-free ethanol.

Nevertheless, up to 7% 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% cap (approximately 3% 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 U.S. 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.

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<sup>5</sup> Decreto No. 566-05, 2005 (October 11)

Whether through CBI or CAFTA, the vehicle currently exists to utilize export potential to the US 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 conservation 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 non-governmental 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<sup>th</sup>, 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.

Foreign Investment Opportunities:

Internationally, the conditions in the Dominican Republic have attracted the attention of foreign investors who see the potential for bio-energy 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 sugar-grower federations, although the actual start date of construction is uncertain.<sup>6</sup>

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 bio-diesel as a first solution to high petroleum prices. Indeed, there was broad consensus about bio-diesel as a major approach to the immediate energy needs because of the lower necessary investment for production. Additionally, the land needed for bio-diesel 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

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<sup>6</sup> 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 on line in the last trimester of 2006.

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 bio-energy 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.
- Creating a public campaign that supports the eventual conversion of sugar to ethanol, while also engaging larger producers and independent sugar growers in a dialogue 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 bi-national 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 dialogue.

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 bio-diesel 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 dollar 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 sugar cane 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 bio-diesel. 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 seven 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 sugar cane 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 U.S. 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 U.S. 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 bio-diesel 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 region no longer dependent on fossil fuels for transport and for living.