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The United States House of Representatives
Committee on Foreign Affairs
Subcommittee on the Western Hemisphere

April 11, 2013
"Energy Opportunities in Latin America and the Caribbean"

Geopolitical uncertainties such as political instability, resource nationalism, civil conflict, economic downturns, and natural disasters in oil producing and exporting countries in all regions of the world threaten both rich and poor nations alike.

Crude oil and natural gas have become true global fungible commodities with limited restrictions in their deliverability across oceans and borders in order to meet the growing appetite for energy among emerging economies; they respectively represent 34 percent and 24 percent of the world's primary energy consumption, making hydrocarbons the long term principal fuel of economic growth around the world.

Price volatility, as a consequence of supply uncertainty, negatively impacts economic growth around the world, therefore straining political relationships between exporting and importing countries. A shift in oil revenues can represent an increase or decrease in resources for education, health, and social services, which can have severe economic effects and political and social consequences in both importing and exporting countries.

Over 50 percent of the world's net oil exports are sourced today from politically precarious regions and countries of the world such as North Africa, the Middle East, the Caspian, and the Caucasus, among others.

The role played by emerging markets, many of them, such as China, net importers of oil on a grand scale, also adds a new complexity to the challenge of international energy security as these countries race toward resource control outside of their own borders.

To many countries and regions of the world these potential areas of conflict in the energy sector have become the Achilles Heel to their economic survival and growth, making these challenges strategically important issues in the geopolitical context.

Latin America and The Caribbean does not escape this ominous scenario.

According to the Energy Information Administration (EIA), 29 percent of U.S. petroleum imports come from Latin America and the Caribbean, while only 22 percent of imports are sourced from the Persian Gulf; if Canadian supplies are added to these figures over 50 percent of the United States' petroleum imports come from our regional neighbors in the Western Hemisphere. Mexico and Venezuela are among the top five suppliers of crude oil and petroleum products to the United States.

It is important to highlight that the Keystone pipeline, the reversal of the Seaway pipeline, as well as new and existing shale liquids pipelines, will bring to the U.S. Gulf Coast refineries the flexibility of nearly 3 million barrels per day of new sources of crude oil supply. This will play a

very important role in our national energy security strategy as it will create a new supply-demand and price relationship between the United States and Latin America particularly as it relates to future Venezuelan and Mexican crude imports.

The Western Hemisphere represents approximately one third of the world's proven conventional and unconventional hydrocarbon reserves; Venezuela alone has approximately 300 billion barrels of proven conventional and unconventional reserves.

The United States Geological Survey's 2012 "Assessment of Undiscovered Conventional Oil and Gas Resources of South America and the Caribbean" estimates that there is an additional 126 billion barrels of oil and 679 trillion cubic feet of undiscovered natural gas in South America and the Caribbean's 31 geologic provinces, including 55 billion barrels in deepwater Brazil and approximately 14 billion barrels in the Guyana-Suriname offshore basins.

Most recently, a study from the EIA also showed that Argentina and Mexico are the third and fourth largest holders, respectively, of technically recoverable shale gas reserves in the world. According to this study nearly 50 percent of the world's total shale gas reserves are in the Western Hemisphere.

Even though the Western Hemisphere's proven natural gas reserves only represent approximately 10 per cent of the world's total reserves they play an important role in the region's energy balance.

With 305 tcf of proven natural gas reserves, the United States is the largest regional holder of natural gas reserves followed by Venezuela with 176 tcf of proven natural gas reserves; Canada, Mexico, Bolivia, Argentina, Peru, Trinidad and Tobago, and Brazil are also important holders of natural gas reserves. Peru and Trinidad and Tobago are the only two countries in the region currently exporting Liquefied Natural Gas (LNG).

As the United States becomes a future exporter of LNG, it would have a considerable impact in the region's LNG supply/demand balance, particularly as it would compete with regional exporters such as Trinidad and Tobago.

Clearly, Latin America and the Caribbean will continue to be an important strategic energy partner and continued future source of crude oil supply to the United States.

Today Latin America's energy potential is being undermined by a number of serious geopolitical uncertainties, along with economic, environmental, social and regulatory issues that could impact the monetization of the region's rich hydrocarbon resources.

High political risk, onerous fiscal and contractual terms and conditions, populist political rhetoric and the nationalization of foreign oil companies' assets have caused a decline in exploration and production investment both from the state and private sectors in Venezuela, Ecuador, Bolivia, Argentina and Mexico, seriously threatening the monetization of their rich hydrocarbon resource base.

The nationalization of privately held oil and natural gas assets by a number of governments, such as Venezuela's 2007 appropriation of Conoco and Exxon-Mobil assets and Ecuador's 2006 expropriation of Occidental Petroleum assets underline the reality of "resource nationalism" in Latin America and illustrate the potentially negative impact on future development of the region's hydrocarbon resources.

Also most recently Argentina's confiscation without compensation of 51 percent of YPF shares, owned by the Spanish oil company Repsol, reinforces the challenge of resource nationalism in the region. If Argentina, a member of the G20, can carry on these policies without having to face the consequences, the Rule of Law could be seriously undermined, creating a domino effect in other Latin-American countries, further deteriorating the much needed investment climate of the region.

The contentious legal dispute by the government of Ecuador against Chevron for the ecological damage caused by Texaco and its partner PetroEcuador in the development of the Lago Agrio oil field during the 1970s is another example which tends to question the seriousness of some governments in their long term commitment toward the sustainable development of their natural resources.

In order to take advantage of the vast energy investment opportunities in the region, the U.S., and the international community at large, has to strengthen the credibility of investment protection principles and instruments.

Established energy producers such as Colombia, Ecuador, Brazil, Peru, Bolivia, and Mexico, and new oil players such as Guyana and Uruguay will face huge technological challenges in both upstream and downstream resource development and environmental stewardship, along with governance and social responsibility issues related to the management of hydrocarbon resource development.

The development, production, and commercialization of conventional, unconventional, and renewable energy resources is highly capital intensive and requires a high degree of technological evolution, research, and development efforts.

If countries want to increase energy and resource development activities they have to offer fiscal and contractual terms and conditions which offer an acceptable rate of return to investors commensurate with their potential and associated technical and commercial risks.

Host governments fiscal and regulatory investment models objectives are;

- Maximize government revenues from oil and natural gas resources
- Increase and or replace resource base and production
- Attract foreign investment
- Technology transfer
- Infrastructure development
- Job creation

The objectives of investor's (International Oil Companies) are;

- Return on capital commensurate with commercial, technological and political risks
- Increase and replace hydrocarbon reserves

We need to encourage the design of fiscal and investment models that create alignment between the objectives of host governments and foreign investors, while promoting good governance standards and behaviors by reinforcing throughout the region the need for:

- Rule of law: incorruptible law enforcement agencies and an independent judiciary, where legal actions and enforcement follows rules and regulations.
- Division of responsibility between the supervisory, regulatory and enforcement authorities.
- Accountability, where public and private institutions are able and willing to show the extent, to which its actions and decisions are consistent with clearly-defined and agreed-upon objectives.
- Transparency, where government actions, decisions and decision-making processes are open to an appropriate level of scrutiny by others parts of government and civil society.
- Integrity, essential for building strong social responsible public and private institutions resistant to corruption.

According to the International Energy Agency (IEA) Latin America and the Caribbean's petroleum demand will grow in 2013 by 3.1 percent to 6.6 million barrels per day triggered by an increase in vehicle use from a growing middle class.

Even though the region is rich in crude oil and natural gas reserves it has a considerable deficit in the refinery capacity needed to monetize liquids production into commercial petroleum fuels, much needed to satisfy its growing regional demand.

The situation is compounded by the low operating efficiency and lack of heavy bottoms conversion capacity of its existing refining system; in 2011 refinery throughputs in Latin America and the Caribbean were only 71 percent of its available refinery capacity of 8.2 million barrels per day.

Crude oil exporting countries such as Venezuela, Mexico, Colombia, Ecuador, Brazil, and Argentina are also importers of petroleum fuels such as gasoline and diesel, much needed to supply their growing markets.

For the first time since 1949, in 2011 the U.S. became a net exporter of petroleum products. This was due in part to reduced domestic fuel demand and in part to increased production of record amounts of gasoline and diesel from new processing conversion capacity in the Gulf of Mexico coast refineries. Approximately 50 percent of total US petroleum exports in 2012 were destined to Latin America and the Caribbean.

It is highly unlikely in our opinion that the more than 2 million barrels per day of new refinery capacity construction planned in countries such as Mexico, Venezuela, Brazil, and Ecuador will materialize in the next five years; the only new major grass-roots refinery project that is moving forward and will be completed in the near term is the 230,000 barrels per day Abreu e Lima refinery in the state of Pernambuco, Brazil. Latin American refinery expansions planned for this decade will not be enough to stem the region's growing dependence on imported fuels from the United States.

Lastly another important challenge in the region is the shortfall of qualified human capital in science, technology, engineering, and mathematics (STEM) degree programs in institutions of higher learning, particularly in the geosciences and engineering areas of study needed to develop and manage the sustainable production of national energy resources.

We believe that academic institutions can play the role of thought-leaders and agents of positive change by transferring knowledge and best practices, thus providing developing countries the opportunity to become fast learners, to avoid mistakes made by others, and to have access to existing processes, research, and best practices that may be beneficial to their specific energy and sustainability needs.

Programs such as Brazil's "Scientists Without Borders" and the United States' "100,000 Strong in the Americas" promote collaborative academic partnerships between United States and Latin American and Caribbean academic institutions in order to support research and development for new or refined knowledge and ideas in the sustainable development of new technologies to improve the region's energy, economic, and environmental challenges by:

- Promoting institutional exchanges by inviting faculty and staff of the cooperating institutions to participate in a variety of teaching and/or research activities and professional development.
- Receiving undergraduate and graduate students of the partner institutions for periods of study and/or research.
- Organizing symposia, conferences, short courses, and meetings on research issues.
- Carrying out joint research and continuing education programs.
- Exchanging information pertaining to developments in teaching, student development, and research at each institution.

According to the National Science Foundation worldwide R&D expenditures totaled an estimated $1.276 trillion in 2009 (the latest year for which data are available). The United States accounted for about 34 percent of this total, followed by Southeast Asia with 28.9 percent, Europe with 25 percent and South Asia with 2.6 percent; South and Central America and the Caribbean, at the bottom of the list with 2.4 percent of total R&D expenditures.

The University of Texas at Austin has 100-year history of education and research throughout Latin America and the Caribbean. As a result, the University has a vast array of resources that can be utilized to assist in understanding and addressing energy and sustainability issues of importance to the region. These internal assets are force-multiplied by the fact that many of our graduating international students have returned to their home countries, achieved prominence in government, industry, and academia, and can be easily engaged in cooperative discussions and projects.

The University of Texas at Austin's President William Powers, Jr. will be visiting Brazil June 5-6 promoting the "Scientists Without Borders" program, which will open the way for the Brazilian government to fund graduate study in the United States for promising Brazilian students in STEM fields.

It is clear to us, Mr. Chairman that lessons learned and best practices have to be shared in order to avoid conflicts between good neighbors and foster conditions and relationships toward international energy security and cooperation in the Western Hemisphere.

We thank you Mr. Chairman, for allowing us to share with you our views on energy challenges and opportunities for Latin America and the Caribbean. Our goal is, as you clearly stated, “to further enhance partnerships on energy development with our regional neighbors to bring prosperity and stability to all the countries in our hemisphere.”