

Latin America: Energy Supply, Political Developments, and U.S. Policy Approaches

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Summary

Western Hemisphere countries supply the United States with 50% of its imported crude oil. Three countries in the hemisphere—Canada, Mexico, and Venezuela—account for the lion's share. Other significant oil producers in the region include Ecuador, Colombia, Brazil, Trinidad and Tobago, and Argentina.

In terms of proven oil reserves, the Western Hemisphere has about 24% of reserves worldwide. After Canada, Venezuela has the second largest amount of proven oil reserves in the hemisphere, almost 87 billion barrels, but this does not include as much as 270 billion barrels of extra-heavy and bitumen deposits from the Orinoco belt. If these deposits became recoverable, Venezuela's proven reserves would exceed those of Saudi Arabia. In terms of natural gas, the United States has the largest amount of proven reserves in the hemisphere, about 39%, followed by Venezuela, almost 31%. Canada, Trinidad and Tobago, and Bolivia also have sizeable reserves. Almost all of the gas imported by pipeline into the United States comes from Canada, while Trinidad and Tobago accounted for about 58% of U.S. liquified natural gas imports in 2007.

While oil and gas producers such as Venezuela, Mexico, Argentina, Bolivia, Colombia, Ecuador, and Trinidad and Tobago are net energy exporters, most other Latin American and Caribbean nations are net energy importers. Moreover, with the exception of Trinidad and Tobago, most Caribbean and Central American nations are highly dependent on energy imports.

High oil prices have spurred the rise of resource nationalism in several Latin American energy-producing countries, which has raised concerns about access to energy resources and political interference with the level of energy production and investment in the region. Such nationalism is often fueled by poverty, and appears to be strongest in countries where people believe that they are not benefitting from the exploitation of their countries' natural resources. Yet many analysts assert that such nationalism is a logical outcome of higher energy prices, and is similar to the actions by energy-producing countries around the world that want to capture more of the profit from their natural resources.

This report examines Latin America's current political environment and its apparent effect on energy production in the region. It also discusses efforts to help many Latin American and Caribbean countries dependent on energy imports, including Venezuela's preferential oil programs, the Mexico-led Meso-American Energy Integration Program, and U.S.-Brazilian cooperation on biofuels. The report also examines policy approaches that have been proposed for increased hemispheric energy cooperation, congressional interest in the topic of hemispheric energy security, and related legislative initiatives: S. 193 (Lugar), the Energy Diplomacy and Security Act of 2007, and S. 1007 (Lugar), the United States-Brazil Energy Cooperation Pact of 2007. This report will be updated to reflect legislative action.

Contents

Introduction 1
Energy and Latin America's Political Environment 5
Venezuela 7
Bolivia 10
Brazil 11
Ecuador 12
Mexico 12
Support for Countries Dependent on Energy Imports 13
Venezuela's "Oil Diplomacy" 14
Mexico and the Meso-American Energy Integration Program 15
U.S.-Brazilian Cooperation on Biofuels 15
Policy Approaches on Energy Cooperation 16
Congressional Interest 17
Legislative Initiatives 19

Figures

Figure 1. Map of Latin America and the Caribbean 5

Tables

Table 1. U.S. Crude Oil Imports from Western Hemisphere Countries, 2007 2
Table 2. Western Hemisphere: Proven Oil and Gas Reserves, January 1, 2008 3
Table 3. Western Hemisphere Oil Production, 2006 and 2007 4

Contacts

Author Contact Information 20

Introduction[1]

The United States is the top oil consumer in the world, consuming some 20.7 million barrels of oil per day (mbd) in 2006, according to Department of Energy statistics, with net oil imports accounting for 12.3 mbd or almost 60% of the total.[2] Western Hemisphere countries supplied the United States with about 46% of total crude oil and petroleum product imports and almost 50% of U.S. crude oil imports in 2007. Three countries in the hemisphere—Canada, Mexico, and Venezuela—account for the lion's share of U.S. crude oil imports from the region while other Latin American and Caribbean countries account for the balance. Other significant oil producers in the region include Ecuador, Brazil, Colombia, Trinidad and Tobago, and Argentina. (See **Table 1**.)

In terms of proven oil reserves, the Western Hemisphere has some 321 billion barrels, about 24% of reserves worldwide. Canada leads the pack with almost 179 billion barrels, with over 95% of its oil extracted from Alberta's tar sands, which is replacing output from aging conventional fields. Venezuela is second in the hemisphere with 87 billion barrels of proven oil reserves. This figure does not, however, include as much as 270 billion barrels of extra-heavy and bitumen deposits from the Orinoco Belt in central Venezuela, though proven oil reserves will likely amount to no more than 20% of this amount once the deposits are certified as recoverable.[3] Other countries with significant oil reserves include the United States, with about 21 billion barrels, Brazil and Mexico, with about 12 billion barrels each, and Ecuador, with almost 5 billion barrels of reserves. Cuba also potentially has almost 5 billion barrels of reserves in the deep waters of the Gulf of Mexico, but these are still not proven. (See **Table 2**.)

Western Hemisphere nations, including the United States, produced about 17.2 million barrels of oil per day (mpd) in 2007, amounting to almost 24% of worldwide production. The top producers were the United States (5.1 mpd), Mexico (3.1 mpd), Venezuela (almost 2.4 mpd), and Canada (2.6 mpd). Oil production in a number of countries declined in 2007, including in Venezuela, where the government has asserted majority control over projects with foreign oil company participation, and in Mexico, where production and reserves have been falling for the last several years, largely because of depletion of the Cantarell oil field in the shallow waters of the Gulf of Mexico. In several other countries, however, such as Canada and Brazil, oil production has been increasing. The outlook appears good for Brazil to increase its oil reserves and production substantially. (See **Table 3**.)

The United States is the top consumer of natural gas in the world, with about 23.1 trillion cubic feet (tcf) consumed in 2007, and net gas imports of about 3.8 tcf or almost 16% of total U.S. natural gas consumption. Canada accounted for the almost all of the 3.8 tcf in natural gas imported by pipeline in 2007, while a small amount was imported from Mexico. Trinidad & Tobago accounted for 0.5 tcf in U.S. liquified natural gas (LNG) imports in 2007, about 58% of total U.S. LNG imports, while other LNG suppliers included Egypt, Nigeria, and Algeria.[4]

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[1] Statistics in this section are drawn from "Worldwide Look at Reserves and Production," *Oil & Gas Journal*, December 24, 2007, as well as information from the U.S. Energy Information Administration (EIA), available at http://www.eia.doe.gov/.

[2] U.S. Energy Information Administration, "United States Energy Profile," April 21, 2008.

[3] U.S. Energy Information Administration, "Country Analysis Briefs: Venezuela," October 2007.

[4] U.S. Department of Energy, Energy Information Administration, *Natural Gas Monthly*, March 2008, Tables 1 and 4.

Table 1. U.S. Crude Oil Imports from Western Hemisphere Countries, 2007

(Annual, Thousands of Barrels)

	Annual, Thousand Barrels	Percentage of Total U.S. Crude Oil Imports
Canada	680,834	18.62
Mexico	514,480	14.07
Venezuela	419,841	11.48
Ecuador	72,138	1.97
Brazil	60,975	1.67
Colombia	50,099	1.37
Trinidad & Tobago	17,608	0.48
Argentina	12,156	0.33
Guatemala	3,975	0.11
Peru	1,841	0.05
Bolivia	1,257	0.03
Belize	250	0.01
Total, Western Hemisphere	1,835,454	50.20
Total, U.S. Imports Worldwide	3,656,170	100.00

Source: U.S. Department of Energy, Energy Information Administration

In terms of proven natural gas reserves, the Western Hemisphere has 545 tcf, or almost 9% of total world reserves. The United States has the largest share of proven natural gas reserves in the hemisphere, with 211 tcf or 39% of the hemisphere's total, followed by Venezuela, with reserves of 166 tcf, Canada with 58 tcf, Bolivia with almost 27 tcf, and Trinidad and Tobago with almost 19 tcf. (See **Table 2**.)

Table 2. Western Hemisphere: Proven Oil and Gas Reserves, January 1, 2008

	Proven Oil Reserves (billion barrels)	Proven Natural Gas Reserves (trillion cubic feet)
Argentina	2.587	15.750
Barbados	.002	.005
Belize	.007	—
Bolivia	.465	26.500
Brazil	12.182	12.280
Canada	178.592	58.200
Chile	.150	3.460
Colombia	1.506	4.342
Cuba	.124[a]	2.500
Ecuador	4.517	—
Guatemala	.083	—
Mexico	11.650	13.850
Peru	.382	11.928
Suriname	.088	—
Trinidad & Tobago	.728	18.770
United States	20.972	211.085
Venezuela	87.035[b]	166.260
Total, Western Hemisphere	321.071	544.930
Total, World	1,331.698	6,185.693

Source: "Worldwide Look at Reserves and Production," *Oil & Gas Journal*, December 24, 2007.

a. This amount does not include an estimated 4.6 billion barrels of undiscovered oil in the deep offshore oil reserves in the Gulf of Mexico north of Cuba. See U.S. Geological Survey, "Assessment of Undiscovered Oil and Gas Resources of the North Cuban Basin, Cuba, 2004," Fact Sheet 2005-3009, February 2005.

b. This amount does not include as much as 270 billion barrels of extra-heavy recoverable reserves in the Orinoco Belt in central Venezuela.

The Western Hemisphere produces more than 80% of the world's biofuels, led by Brazil producing ethanol from sugar and the United States producing ethanol from corn.[5] In 2006, the United States was the largest producer of ethanol, with almost 4.9 billion gallons, followed closely by Brazil with 4.5 billion gallons; together, the two countries produced 69% of ethanol in the world. Brazil became the largest source for U.S. ethanol imports in 2006, supplying 434 million gallons. Several Caribbean and Central American countries—Costa Rica, El Salvador, Jamaica, and Trinidad and Tobago—exported smaller amounts of ethanol to the United States that together totaled about 220 million gallons in 2006.[6] Several other countries in the region produce

[5] Inter-American Development Bank (IDB), *A Blueprint for Green Energy in the Americas*, April 2007, p. 7.

[6] Renewable Fuels Association, "Industry Statistics," online at http://www.ethanolrfa.org/industry/statistics/#D.

ethanol, but largely for their domestic markets, while several countries have expanded investment in biodiesel production, including Colombia, which has focused on palm oil, and Brazil.

Table 3. Western Hemisphere Oil Production, 2006 and 2007

	2006, Actual (1,000 b/d)	2007, Estimated (1,000 b/d)	Change from 2006 (%)
Argentina	640.5	630.0	-1.6
Barbados	0.9	0.8	-11.1
Belize	—	—	—
Bolivia	44.8	44.0	-1.8
Brazil	1,722.3	1,760.0	2.2
Canada	2517.2	2,645.0	5.1
Chile	10.0	10.0	—
Colombia	527.5	525.0	-0.5
Cuba	38.7	39.0	0.9
Ecuador	534.6	500.0	-6.5
Guatemala	16.1	15.0	-7.1
Mexico	3,256.3	3,135.0	-3.7
Peru	115.6	114.0	-1.3
Suriname	13.2	14.8	12.5
Trinidad and Tobago	142.8	122.0	-14.5
United States	5,101.7	5,135.0	0.7
Venezuela	2,561.7	2,390.0	-6.7
Total, Western Hemisphere	17,243.6	17,079.6	-1.0
Total, World	72,647.0	72,361.0	-0.4

Source: "Worldwide Look at Reserves and Production," *Oil & Gas Journal*, December 24, 2007.

Figure 1. Map of Latin America and the Caribbean



Source: Map Resources. Adapted by CRS. (K. Yancey 10/16/06)

Energy and Latin America's Political Environment

High oil prices have spurred the rise of resource nationalism in several Latin American countries, which has raised concerns about access to energy resources and political interference with the level of energy production and investment in the region. Such nationalism often develops as a response to conditions of poverty, and appears to be strongest in countries where people believe

that they are not benefitting from the exploitation of their countries' natural resources. Yet many analysts assert that such nationalism is a logical outcome of higher energy prices and closely follows the actions taken by energy-producing countries around the world that want to capture more of the profit from their natural resources.[7]

The populist government of Hugo Chávez in oil-rich Venezuela has asserted firmer state control over the state-run oil company, *Petróleos de Venezuela* (PdVSA), steering more of its proceeds to fund the government's infrastructure projects and social programs and asserting government control over foreign investment in the petroleum sector in Venezuela. The government of Evo Morales in Bolivia has fulfilled his campaign pledge of nationalizing the significant natural gas sector, calling for foreign companies to be "partners, not owners" of the country's gas resources. Ecuador has moved to capture more of the windfall profits from foreign oil companies operating in the country, and in May 2006 terminated the contract of Occidental Petroleum after a long dispute over whether the company had broken laws in selling some of its oil-drilling rights in Ecuador to a Canadian firm. In Peru, which is poised to become a significant exporter of natural gas, the 2006 electoral victory of former President Alan García over Ollanta Humala, an admirer of Hugo Chávez, eased international concerns about the future development of Peru's energy sector. In Mexico, the main energy issue is how to deal with declining oil reserves and insufficient funds for maintenance and exploration, and whether Mexico will open its state-controlled oil production to private and foreign investment.

Because of rising resource nationalism, foreign oil companies in a number of Latin American countries are having to pay more to do business in terms of increased taxes and royalties. Some observers fear that this could slow foreign investment in the region's energy sectors, which is already hindered by political and social instability in some countries. Others contend that foreign companies will continue to invest where there is a likelihood of profit.[8] Some energy-producing countries in the region, such as Brazil and Colombia, continue to follow a capitalist model for energy investment that allows foreign companies to own and operate energy concessions. Nevertheless, across the region, there is continuing underinvestment in energy infrastructure, with some analysts maintaining that many countries are at risk for widespread electricity shortages.[9] In the case of Colombia, the situation has been exacerbated by a long civil conflict that makes resource exploitation difficult and costly.

There has been some concern about the potential for heightened competition for Latin American energy resources from countries like China and India, which are seeking new sources for their growing energy needs. The Chinese government has been acquiring interests in exploration and production abroad, including in Latin America. China and Venezuela have signed a series of energy-related agreements since 2005, including joint ventures for oil and gas exploration in Venezuela and to increase Venezuela's supply of oil to China. The state-run China Petrochemical Corporation (Sinopec) signed an agreement in April 2006 with Brazil's Petrobras to build a natural gas pipeline linking the northeast and southeast of Brazil. China is also exploring energy deals in Ecuador, Bolivia, Peru, and Colombia, as well as offshore projects in Argentina and Cuba. India has recently begun to increase its energy assets in Latin America by pursuing joint

[7] Steven Dudley, "High Prices an Incentive for Tighter State Control," *Miami Herald*, July 5, 2006; Sara Miller Llana, "Latin America Demands More for Its Oil and Gas," *Christian Science Monitor*, April 9, 2007.

[8] "The Shape of Leftwing Economic Polices in the Region," *Latin American Economy & Business*, January 2006.

[9] "Latin America Forecasts: Energy in 2006," in *Latin American Advisor, Latin American Forecasts: 2006*, Inter-American Dialogue, Washington, D.C., January 2006.

ventures with established public and private companies operating in the region. For example, ONGC Videsh (OVL), a state-owned Indian energy company, recently bought a 15% stake in a Brazilian oil field and a 30% stake in a partnership for oil and gas exploration in Cuba. The same company is discussing a possible $1 billion investment in a Venezuelan oil field. In 2006, Sinopec and ONGC issued a successful joint bid for a 50% stake in the Omimex oil company of Colombia, a subsidiary of the U.S.-based Omimex Resources energy company.

Venezuela[10]

Since Venezuela is the fourth major supplier of foreign oil to the United States (after Canada, Saudi Arabia, and Mexico) providing 11.5% of U.S. crude oil imports, a key U.S. interest has been ensuring the continued flow of oil from that country. Venezuela's state-oil company PdVSA also owns Citgo, which operates three crude oil refineries and a network of some 14,000 retail gasoline stations in the United States. Although the United States traditionally has had close relations with Venezuela, there has been tension in relations under the rule of President Hugo Chávez, first elected in 1998. U.S. officials and human rights organizations have expressed concerns about the deterioration of democratic institutions and threats to freedom of speech and press under the Chávez government.

The Chávez government has benefitted from the rise in world oil prices, which has increased government revenues and sparked an economic boom. As a result, Chávez has been able to increase government expenditures on anti-poverty and other social programs associated with his populist agenda. On April 15, 2008, the government approved a measure that would tax foreign oil companies 50% when crude oil reaches $70 a barrel; the tax would rise to 60% when oil exceeded $100.[11]

Under President Chávez, the Venezuelan government has moved head with asserting greater control over the country's oil reserves. By March 2006, the Venezuelan government completed the conversion of its operating agreements with foreign oil companies in marginal or low-yielding oilfields into joint ventures with PdVSA majority ownership. Of the original 32 operating agreements, 25 are now joint ventures, with PdVSA holding a majority share of between 60-80%. Five of the operating agreements were voluntarily turned over to PdVSA, and two operations, run by France's Total and Italy's ENI, were confiscated by the government after the companies rejected the terms proposed by Venezuela. Under the new joint ventures, income taxes were raised to 50% (from 34%) and are retroactive to 2001 in compliance with a hydrocarbons law enacted in 2000.[12]

In 2007, the government completed the conversion of four strategic associations involving extra-heavy oil Orinoco River Basin projects. Six foreign companies had been involved in the projects—U.S.-based ConocoPhillips, Chevron, and ExxonMobil, Norway's Statoil-Hydro, Britain's BP, and France's Total. In the conversion to Venezuelan government majority ownership, Chevron and BP maintained their previous investments, Total and Statoil-Hydro reduced their holdings, while ConocoPhillips and ExxonMobil chose to leave the projects.[13]

[10] For additional information, see CRS Report RL32488, *Venezuela: Political Conditions and U.S. Policy*, by Mark P. Sullivan.

[11] "Venezuela Passes Tax on Oil Companies," *New York Times*, April 16, 2008.

[12] Economist Intelligence Unit, "Venezuela Country Report," June 2006.

[13] U.S. Energy Information Administration, "Country Analysis Briefs: Venezuela," October 2007.

However, Statoil-Hydro, Total, and Italy's Eni have signed agreements that could result in additional investments in the Orinoco Belt projects.[14]

ExxonMobil has been in a high-profile dispute with the Venezuelan government over compensation to be paid by Venezuela for its oil investments in the country. The company filed a request in 2007 for arbitration with the World Bank-affiliated International Center for Settlement of Investment Disputes. ExxonMobil initially won a UK court order in January 2008 freezing as much as $12 billion in Venezuelan oil sector assets, but this was overturned by a UK High Court order on March 18, 2008.[15] ExxonMobil, however, also previously had won court orders in the Netherlands and Netherlands Antilles freezing up to $12 billion in Venezuelan assets, and in February 2008, a U.S. federal court in New York upheld a freeze of $300 million in PdVSA assets.[16]

According to some critics, majority state ownership in the oil sector has reportedly slowed the rate of foreign investment. Production also has reportedly not been able to recover from the firing of some 18,000 PdVSA employees in early 2003 and from continued underinvestment in maintenance and repairs.[17] PdVSA announced in early April 2008 that it would raise output to 3.5 million barrels a day (mbd), up from 3.15 mbd in 2007, but other sources, including the International Energy Agency, put 2007 production at far less, just 2.4 million mbd.[18] Some oil analysts also question whether PdVSA is prepared to take over operation of the heavy oil fields in the Orinoco.[19]

Despite notable frictions in bilateral relations, Venezuela continues to be a major supplier of oil to the United States. Oil and related products accounted for some 96% of Venezuela's exports to the United States in 2007.[20] Some 65% of Venezuela's oil exports were destined for the United States in 2006, highlighting the dependency of Venezuela on the U.S. market.[21] Even though Venezuela opposed the Bush Administration's Operation Iraqi Freedom, the Chávez government announced before the military conflict that it would be a reliable wartime supplier of oil to the United States.

On numerous occasions, however, Chávez has threatened to stop selling oil to the United States. In February 2006, he asserted that the "U.S. government should know that, if it crosses the line, it will not get Venezuelan oil."[22] In April 2006, he warned that his government would blow up its oil fields if the United States ever were to attack.[23] In November 2006 (amid Venezuela's presidential

[14] Benedict Mander "Venezuela's Oil Belt Reopens to Private Groups," *Financial Times*, March 11, 2008.

[15] Robert Perkins, "UK Court Overturns Asset Freeze on PdVSA," *Platts Oilgram News*, March 19, 2008.

[16] "U.S. Court Upholds Freeze of Venezuelan Oil Firm's Assets," *EFE News Service*, February 13, 2008.

[17] Danna Harman, "Venezuela's Oil Model: Is Production Rising or Falling?," *Christian Science Monitor*, May 31, 2006.

[18] "Worldwide Look at Reserves and Production," *Oil & Gas Journal*, December 24, 2007; Jack Chang and Kevin G. Hall, "Falling Oil Production a Challenge for Chávez," *Miami Herald*, March 22, 2008; "Venezuela: PdVSA-ExxonMobil Tensions Continue," *Oxford Analytica*, April 9, 2008.

[19] Juan Forero, "Venezuela Set to Assume Control of Its Oil Fields," *Washington Post*, May 1, 2007.

[20] World Trade Atlas, utilizing Department of Commerce Statistics.

[21] "Venezuela Energy Profile," Energy Information Administration, April 21, 2008, available at http://tonto.eia.doe.gov/country/country_energy_data.cfm?fips=VE.

[22] "U.S. Warned to Back off or Risk Losing Oil Supply," *Miami Herald*, February 18. 2006; "Chávez Threatens To Cut Oil in Case U.S. 'Crosses Line,'" Open Source Center, Foreign Broadcast Information Service, February 18, 2006.

[23] "Chávez Says He'll Blow up Oil Fields If U.S. Attacks," *Miami Herald*, April 20, 2006.

election campaign), President Chávez asserted that Venezuela would "not send one more drop of oil to the U.S." if the United States or its "lackeys" in Venezuela try a "new coup," fail to recognize the elections, or try to overthrow the oil industry. Many observers believe Chávez's threats have been merely part of his rhetoric that is designed to bolster his domestic political support. Venezuela's Ambassador to the United States asserted in July 2006 that oil-cutoff comments by Venezuelan officials, including President Chávez, only reflect what would be Venezuela's response against aggression initiated by the U.S. government.[24] Once again in February 2008, President Chávez once again threatened to stop oil exports to the United States, this time if ExxonMobil was successful in freezing billions in Venezuela oil assets in a dispute over compensation for its Orinoco oil investments. State Department officials played down the threat, pointing out that Chávez has made the same threat in the past, but has never cut oil.[25] A week later, on February 17, Chávez said that he would only stop sending oil if the United States attacked Venezuela.[26]

Because of these comments, however, some observers have raised questions about the reliability of Venezuela as a major supplier of foreign oil. There are also concerns that Venezuela is looking to develop China as a replacement market, although Venezuelan officials maintain that they are only attempting to diversify Venezuela's oil markets. Energy analysts maintain that there are two major difficulties with Venezuela substantially increasing its exports to China: first, China's limited capability to refine Venezuela's heavy crude oil, and second, high freight costs because of the large distance between the two countries.[27] Nevertheless, PdVSA announced in May 2006 that it would buy 18 oil tankers from China that would help Venezuela increase its oil exports to Asia. The U.S. Energy Information Administration (EIA) estimates that Venezuela's oil exports to China grew from 39,000 bpd in 2005 to 80,000 bpd in 2006, low compared to Venezuela's oil exports to the United States, which amounted to 1.41 million bpd in 2006. According to the EIA, "the U.S. market will likely remain Venezuela's most important market for the foreseeable future."[28]

In June 2006, the Government Accountability Office (GAO) issued a report, requested by Senate Foreign Relations Committee Chairman Richard Lugar, on the issue of potential Venezuelan oil supply disruption. The GAO report concluded that a sudden loss of all or most Venezuelan oil from the world market could raise world prices up to $11 per barrel and decrease U.S. gross domestic product by about $23 billion. It also concluded that if Venezuela does not maintain or expand its current level of oil production, then the world oil market may become even tighter than it is now, putting pressures on both the level and volatility of energy prices.[29] Energy analysts maintain, however, that Venezuela, which is dependent on the U.S. oil market, would plunge into economic chaos if it ceased oil shipments to the United States. Venezuela's Ambassador to the United States Bernardo Alvarez rejected the idea that his country would take unilateral action to

[24] Andy Webb-Vidal, "Venezuela Will Not Cut Off Oil Despite Hostile U.S. Attitude," *Financial Times*, August 1, 2006.

[25] Benedict Mander, "U.S. Shrugs Off Chávez Threat Over Oil," *Financial Times*, February 12, 2008.

[26] "Venezuela: Chávez Dials Back Threat to Halt Oil," *Los Angeles Times*, February 18, 2008.

[27] Andy Webb-Vidal, "Chávez on Oil Export Mission in China," *Financial Times*, August 24, 2006.

[28] "Country Analysis Briefs: Venezuela," Energy Information Administration, October 2007.

[29] U.S. Government Accountability Office, "Energy Security: Issues Related to Potential Reductions in Venezuelan Oil Production," GAO-06-668, June 2006.

cut oil exports to the United States as absurd. He maintains that oil exports provide revenues to the Venezuelan government "that are vital for its programs and essential to its very viability."[30]

Bolivia[31]

Bolivia boasts the second-largest natural gas reserves in Latin America, but lacks the expertise and resources necessary to develop and export its gas resources. Industry experts say Bolivia needs technical assistance and billions of dollars in foreign direct investment (FDI) to better exploit its natural gas reserves. Bolivia's chronic instability, combined with President Evo Morales' decision to nationalize the gas industry in May 2006, have negatively impacted FDI in the country's oil and gas sectors. A lack of investment in exploration has meant that Bolivia has been unable to fulfill its increasing domestic demand for gas and meet its supply commitments to Argentina and Brazil. The Bolivian government expects recent investment pledges from several state-owned energy companies to boost production by 2009.[32]

The gradual realization that Bolivia has neither the technological nor financial capacity to exploit its natural gas reserves on its own has forced President Morales to moderate the terms under which he carries out the nationalization of his country's hydrocarbons industry.[33] Morales' sudden nationalization move significantly raised energy costs for neighboring Argentina and Brazil and increased tax and royalty rates for companies operating in Bolivia to a level that some investors perceive to be unprofitable. It prompted Brazil's Petrobras and Spain's Repsol—the largest foreign investors in Bolivia's energy sector—to halt all new investments in the country. It has since become apparent that Bolivia's state-run oil company, *Yacimientos Petroliferos e Fiscales Bolivianos* (YPFB), which has had five presidents in the last two years, lacks the expertise and the resources necessary to develop and export the country's gas resources.[34]

Some progress has been made, however. Most of the foreign companies operating in Bolivia eventually signed new contracts to carry out joint ventures with YPFB and new investors have pledged to invest in exploration and production projects. In May 2007, President Morales authorized YPFB to form partnerships with new state-owned oil and gas companies. State oil companies from a number of countries (including Petrobras and Repsol) have pledged to make $1.5 billion in investments in Bolivia in 2008. While most of the initial investments made were limited to maintaining existing projects, Petrobras began a new $40 million exploration project in southeastern Bolivia in February 2008.[35]

[30] Andy Webb-Vidal, "Caracas Rejects U.S. Probe into Its Oil Policy," *Financial Times*, July 11, 2006.

[31] For additional information, see CRS Report RL32580, *Bolivia: Political and Economic Developments and Relations with the United States*, by Clare Ribando Seelke.

[32] Richard Lapper et al, "Bolivia Stumbles on Road to Riches from Natural Gas," *Financial Times*, March 7, 2008.

[33] "Latin America: Nationalism Revived," *Economist Intelligence Unit - Business Latin America*, April 16, 2007.

[34] "Morales Names New Head of Struggling Bolivian State Energy Company," *Associated Press*, March 13, 2008.

[35] Monte Reel, "Bolivia's Irresistible Reserves," *Washington Post*, February 10, 2008; "Brazil's Petrobras Resumes Investments in Bolivia," *Latin America News Digest*, February 27, 2008.

Brazil[36]

Recent oil and gas discoveries may soon transform Brazil, already a leader in biofuels production, into a major exporter of petroleum products. Brazil currently has a fairly balanced energy matrix, with some 65% of its power generated by hydroelectric plants. It also has significant oil and gas reserves, nuclear energy, and a successful alternative energy program. Petrobras, Brazil's state-owned oil company, is a leading energy company in Latin America, particularly in the area of deep water drilling. In November 2007, Petrobras announced the discovery of what may be the world's largest oil field find in several years.[37] In mid-April 2008, Brazilian officials announced a second potentially large offshore oil discovery.[38]

Brazil has already reduced its dependency on foreign oil imports by becoming the world's largest consumer and producer of ethanol from sugar cane, which now supplies some 40% of the country's motor fuel. Brazil's sugar-based ethanol is considered more efficient and environmentally friendly than corn-based derivatives produced in the United States. Ethanol use has accelerated since 2003 in Brazil, when automakers introduced "flex fuel" motors that are designed to run on ethanol, gasoline, or a mixture of the two. In 2007, flex fuel vehicles accounted for some 86% of new vehicles sold in Brazil.[39]

Brazil's experience with ethanol has not come without its share of problems, however. For instance, Brazil has at times had to import large amounts of ethanol when its sugarcane crop has been damaged by drought or simply fallen short of rising demand. In addition, critics say the expansion of sugarcane production has occurred in areas previously used for cattle ranching and soybean production, displacing some farmers into the Amazon rainforest. Finally, human rights groups argue that the increasing demand for sugarcane has put undue pressure on the peasants forced to harvest the sugar under extremely difficult working conditions.[40]

The primary weakness in Brazil's energy sector has been the country's over-reliance on natural gas from neighboring Bolivia. Some 50% of the gas used in Brazil flows from Bolivia. Both Petrobras and the Brazilian government seemed surprised when the Bolivian government nationalized that country's natural gas industry in May 2006.[41] In response, Petrobras halted all new investments in Bolivia and dramatically sped up efforts to exploit Brazilian natural gas supplies, which appears to be working in Brazil's favor. In February 2008, Petrobras announced the discovery of a natural gas field in the Santos Basin of Brazil that could be as large as the oil field it discovered nearby in the fall of 2007. As a result, while Petrobras is continuing to make limited investments in Bolivia's gas industry in order to ensure that Brazil's short-term natural gas needs are met, those investments may be scaled back over the medium to long term.[42]

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[36] For additional information, see CRS Report RL33456, *Brazil-U.S. Relations*, by Clare Ribando Seelke and Alessandra Durand, and CRS Report RL34191, *Ethanol and Other Biofuels: Potential for U.S.-Brazil Energy Cooperation*, by Clare Ribando Seelke and Brent D. Yacobucci.

[37] "Brazil's Now a Hot Commodity," *Los Angeles Times*, January 3, 2008.

[38] Brent Radowitz, "Petrobras Reports Major Offshore Oil Find," *Wall Street Journal*, April 15, 2008.

[39] "Brazil Ethanol Demand Rises About 50% in 2007," *Reuters*, February 19, 2008.

[40] "With Big Boost From Sugar Cane, Brazil is Satisfying Its Fuel Needs," *New York Times*, April 10, 2006; David Teather, "Inside Brazil: The Ethics of Ethanol," *Guardian*, March 14, 2008.

[41] "Bolivia's Populism Steps on Brazil," *Christian Science Monitor*, May 8, 2006.

[42] "Petrobras Makes Big Gas Find Near Tupi," *Oil Daily*, January 23, 2008.

Ecuador[43]

Oil is extremely important to Ecuador's economy, accounting for more than 50% of exports. High oil prices fueled an economic growth rate of 4.2% in 2006, but declining production levels resulted in growth of only about 1.5% in 2007. Production by Petroecuador, the state-owned oil company, has fallen by 50% in the last ten years, and a lack of capital has forced the company into a deep financial crisis. Petroecuador has reported losing some $200 million per year in production due to protests and other community-related problems.[44]

The government of President Rafael Correa, a leftist economist who took office in January 2007, is seeking to increase state control over the energy sector. In October 2007, President Correa issued a decree that increased the Ecuadorian state's share of windfall oil revenues from 50% to 99% unless companies were willing to switch from production sharing agreements to new service contracts controlled by Petroecuador. Though the Correa government has reportedly moderated its position during the contract negotiations, many investors and foreign companies operating in Ecuador are concerned about the general direction of the government's policies.[45] Private companies have long experienced problems investing in the Ecuadorian oil industry, stemming from the country's chronic instability and tendency for conflicts with private producers.

President Correa supports the prior government's May 2006 termination of its contract with the U.S. firm Occidental Petroleum (Oxy) over an alleged breach of contract, a controversial move which is currently in dispute settlement. In November 2007, the Ecuadorian government initiated new legal proceedings against Occidental and City Oriente, another U.S.-owned oil company, for allegedly failing to pay their windfall oil taxes.[46]

Mexico

Mexico was the third largest supplier of crude oil to the United States in 2007 after Canada and Saudi Arabia, accounting for 14.1% of U.S. imports in 2007. Oil continues to be important for the Mexican economy, accounting for almost 16% of overall exports in 2006, and with the state-oil company, *Petróleos Mexicanos* (Pemex), contributing more than a third of the federal government's budget.[47] In part because of the government's heavy fiscal demands, Pemex has had financial difficulties, with its debt increasing and the company registering an annual operating loss since 1998. In 1938, Mexican President Lázaro Cárdenas nationalized the oil sector and created Pemex. Cárdenas is still revered as a national hero for his action, and Mexicans today are largely opposed to altering the government's control of the oil sector.

[43] For additional information on Ecuador, see CRS Report RS21687, *Ecuador: Political and Economic Situation and U.S. Relations*, by Clare Ribando Seelke.

[44] "DJ Petroecuador Ex-President: Company Faces Deep Financial Crisis," *Dow Jones Commodities Service*, February 10, 2006; "Oil Sector Protests Become Norm in Ecuador," *Platts Oilgram Price Report*, March 26, 2007; "Ecuador Says State Oil Company in Crisis," *EFE*, November 29, 2007.

[45] "Oil and Mining Companies Faced Renewed Contract Uncertainty in Ecuador," *Global Insight Daily Analysis*, November 13, 2007. "Ecuador Nears Finish Line on Contract Talks with Foreign Companies," *International Oil Daily*, March 11, 2008.

[46] "Ecuador: Deteriorating Climate," *EIU- Business Latin America*, December 10, 2007.

[47] Trade statistics are from the World Trade Atlas, utilizing Mexican government statistics.

There are concerns, however, that Mexico's proven oil reserves are declining because of insufficient funds available for maintenance and exploration. The Cantarell field in the Gulf of Mexico, which accounts for almost two-thirds of Mexico's crude oil production, is in steep decline. In March 2006, the Mexican government announced a new oil find in the Gulf of Mexico off the coast of Veracruz that could hold 10 billion barrels, but it will take substantial investment and up to a decade to bring it into production. Pemex reportedly does not have the money or the expertise to tap billions of barrels of oil in the deep waters of the Gulf.[48]

During the 2006 presidential campaign, Felipe Calderón called for a limited opening of Pemex to allow it to negotiate freely with private companies, while his leftist rival Andrés Manuel López Obrador opposed any opening of Pemex to private interests. Given the closeness of the race, with Calderón defeating Obrador by less than a quarter million votes, energy reform was not at the top of President Calderón's agenda, especially given the sensitive nature of the issue among Mexicans.

After more than a year in office, on April 8, 2008, President Calderón proposed to the Mexican Congress some limited measures to allow Pemex to contract out to foreign companies to help with exploration, and allow private companies to build and operate refineries, pipelines, and storage facilities. The proposal, which was dubbed a "light reform" by industry analysts, prompted strong political opposition from the leftist opposition, led by Andrés Manuel López Obrador, that has literally blockaded Mexico's Congress, paralyzing its work. López Obrador has vowed to continue the blockade until the spring session ends on April 30, 2008.[49] Some analysts maintain that since the proposal does not include any proposals for profit sharing, even if it was approved, it might not attractive the foreign investment needed to stem Pemex's production decline.[50]

Support for Countries Dependent on Energy Imports

While oil and gas producers such as Venezuela, Mexico, Argentina, Bolivia, Colombia, Ecuador, and Trinidad and Tobago are net energy exporters, most other Latin American and Caribbean nations are net energy importers.[51] With the exception of Trinidad and Tobago, most Caribbean and Central American nations are highly dependent on energy imports. According to the Department of Energy, oil dependency is a major problem among Caribbean island nations, where oil accounts for more than 90% of total energy consumed.[52]

[48] Elisabeth Malkin, "Output Falling in Oil-Rich Mexico, and Politics Gets the Blame," *New York Times*, March 9, 2007.

[49] Elisabeth Malkin, "Mexico Proposes Limited Overhaul of State Oil Monopoly," New York Times, April 10, 2008; James C. McKinley Jr. And Antonio Betancourt, "Oil Bill Protest Shuts Mexican Congress," *New York Times*, April 19, 2008; "Factbox – Mexico Energy Reform Debate," *Reuters News*, April 21, 2008.

[50] "Mexico Industry: Energy Reform "Light," *EIU ViewsWire*, April 10, 2008.

[51] International Energy Agency, "Map Energy Indicators, Latin America, Net Imports," available at http://www.iea.org/Textbase/country/maps/LAMERICA/imports.htm.

[52] House International Relations Committee, Hearing on "Western Hemisphere Energy Security," Testimony by Karen A. Harbert, "Assistant Secretary for Policy and International Affairs, U.S. Department of Energy, March 2, 2006.

Many of these nations that are dependent on oil imports experienced dramatic increases in their oil bills after oil price hikes began in 2005 and prompted such initiatives as Venezuela's preferential oil programs; the Mesoamerican Energy Integration Program involving Mexico, Colombia, the Dominican Republic, and the countries of Central America; and U.S.-Brazilian cooperation on biofuels.

Venezuela's "Oil Diplomacy"

President Chávez has used so-called "oil diplomacy" to provide oil to Latin American and Caribbean nations on preferential terms, and there has been some U.S. concern that Venezuela is using these programs to increase its influence in the region.

In a program known as PetroCaribe launched in 2005, Venezuela is providing oil to a number of Caribbean Basin nations on preferential terms, and there has been some U.S. concern that these programs could increase Venezuela's influence in the region. Since 1980, Caribbean nations have benefitted from preferential oil imports from Venezuela and Mexico under the San José Pact, and since 2001, Venezuela has provided additional support for Caribbean oil imports under the Caracas Energy Accord. PetroCaribe, however, goes further with the goal of putting in place a regional supply, refining, and transportation and storage network, and establishing a development fund for those countries participating in the program. Under the program, Venezuela is offering to supply 190,000 barrels per day of oil to the region on preferential terms. When oil prices are over $50 a barrel, 40% of the volume is financed over 25 years at an annual interest rate of 1%.

Most Caribbean nations are signatories of PetroCaribe, with the exception of Barbados and Trinidad and Tobago. In Central America, Nicaragua and Honduras joined PetroCaribe in 2007. Venezuela also signed an accord with Bolivia in mid-April 2008 under which it will provide some 8,300 bpd to the Andean nation through a joint venture known as PetroAndina. In the United States, Venezuela has provided subsidized oil through Citgo, a subsidiary of PdVSA, to low-income families in 23 states plus the District of Columbia.[53]

In addition to these preferential oil arrangements, Venezuela is investing in energy sectors in several Latin American countries. Chávez has pledged to invest $1.5 billion in Bolivia's gas industry. Ecuador and Venezuela have signed agreements for joint development in oil, gas, refining, and petrochemical sectors. In 2005, PdVSA signed an agreement to build an oil refinery in northeastern Brazil. Construction on the 200,000 bpd refinery began in September 2007, and is to be supplied with oil from both Brazil and Venezuela when it begins operations in 2010. Colombia and Venezuela signed an agreement in July 2006 initiating a gas pipeline project that would initially supply gas to Venezuela from northern Colombia, and then reverse the flow once Venezuela develops its own natural gas reserves. Argentina and Venezuela also announced an alliance in July 2006 involving cooperation on hydrocarbon exploration and development in both countries. In Cuba, PdVSA helped refurbish an oil refinery in Cienfuegos, and has signed an exploration and production agreement with Cupet, Cuba's state-oil company.[54]

[53] For information on the Citgo program, see http://www.citgoheatingoil.com/index.asp.

[54] "Venezuela: Oil Revenues Boost International Influence," *Oxford Analytica*, July 19, 2006.

Mexico and the Meso-American Energy Integration Program

In December 2005, then-Mexican President Vicente Fox and the Central American presidents at that time met in Cancun to sign a Meso-American Energy Integration Program (PIEM), which built upon the Plan Puebla Panama (PPP), an integration and sustainable development program for the region that was launched in 2001. Colombia was officially accepted to the PPP process in mid-July 2006 and, as an energy producer, has a particular interest in the energy integration projects occurring as part of the PIEM.

The PIEM consists of two key initiatives. The first, which has received funding from the Inter-American Development Bank (IDB) and the Central American Economic Integration Bank, involves constructing an electricity transmission line to connect Panama to Guatemala. The transmission line, known as the Central American Electrical Connection System (Siepac), is currently under construction and expected to be operational by 2009. Separate efforts are underway to connect Colombia with Panama and Guatemala with Mexico. The other main component of the PIEM involves the construction of a new refinery to be located somewhere in Central America at a cost that could reach as high as $7 billion. As planned, Mexico will supply the bulk of the crude oil to be processed, which will first go to satisfy the other signatories' energy needs, with surplus exported outside the region. In April 2007, President Calderón indicated that Mexico will only be able to supply 80,000 bpd of oil for the refinery, rather than the 230,000 bpd that former President Fox had originally pledged, owing to declining reserves. Four companies are currently developing investment proposals for the refinery project that they will present to Mexico's Energy Ministry for consideration in June 2008.[55]

U.S.-Brazilian Cooperation on Biofuels

Ethanol and other types of biofuels have been identified as alternative energy sources that may help some countries in Latin America reduce their dependence on imported petroleum products. In the region, Brazil stands out as an example of a country that has become a net exporter of energy, partially by increasing its use and production of ethanol. On March 9, 2007, the United States and Brazil, the world's two largest ethanol producing countries, signed a Memorandum of Understanding to promote greater cooperation on ethanol and biofuels in the Western hemisphere. The agreement involves (1) technology-sharing between the United States and Brazil; (2) conducting feasability studies and providing technical assistance to build domestic biofuels industries in third countries; and (3) working multilaterally to advance the global development of biofuels.[56]

Since March 2007, the United States and Brazil have moved forward on all three components of the agreement. On the bilateral front, several high-level visits have taken place aimed at advancing research on new biofuels feedstock and improving biofuels production and distribution processes. U.S. and Brazilian consultants carried out feasibility studies that identified several short-term technical assistance opportunities in Haiti, the Dominican Republic, El Salvador, and

[55] "Mexico Slashes Supply Pledge to Planned Central American Refinery," *Platts Commodity News*, April 10, 2007; "Four Companies Show Interest in Central American Refinery Project," *Oil Daily*, July 10, 2007.

[56] "Memorandum of Understanding Between the United States and Brazil to Advance Cooperation on Biofuels," U.S. Department of State, Office of the Spokesman, March 9, 2007, available at http://www.state.gov/r/pa/prs/ps/2007/mar/81607.htm; "Joint Statement on the Occasion of the Visit by President Luiz Inácio Lula da Silva to Camp David," White House Press Release, March 31, 2007; available at http://www.state.gov/p/wha/rls/prsrl/07/q1/82519.htm.

St. Kitts and Nevis, many of which focus on using biofuels to help satisfy domestic energy needs. Eight of the possible projects they identified are going to be funded through the U.S.-Brazil biofuels partnership, with support from funding partners such as the IDB. On the multilateral front, the United States and Brazil are working with other members of the International Biofuels Forum (IBF) to make biofuels standards and codes more uniform. Despite this progress, potential obstacles to increased U.S.-Brazil cooperation on biofuels exist, including current U.S. tariffs on most Brazilian ethanol imports.

Analysts disagree as to whether ramping up biofuels production is a viable solution to reducing Latin America's oil dependency and promoting rural development in the region. According to the IDB, while some countries in Latin America have developed research facilities and regulatory frameworks for biofuels, at least $200 billion in investments would have to be made in order for biofuels to provide even 5% of the region's transport energy by 2020. Some analysts are concerned about the huge investment outlays needed to build up biofuels industries, as well as the potential negative effects of biofuels production on the environment, labor conditions, and costs of competing foodstuffs in the region. Others argue that the climate, surplus of arable land, and excess production of sugarcane and other potential biofuels crops make Latin America ideally suited for an expanded biofuels industry.[57]

Policy Approaches on Energy Cooperation

Policy analysts have made several recommendations to further hemispheric energy cooperation. Among these are broad calls for the U.S. government to make energy a high priority in its hemispheric relations, to take into account the energy capacities and goals of hemispheric nations when developing U.S. energy policies, and to understand that U.S. energy security will be lacking if other countries in the hemisphere are lacking energy security.[58] Many policy analysts also look to the potential role that foreign low-cost sugarcane producers can play in U.S. energy security if the producers can export sugar-based fuel ethanol to the United States without facing stiff tariffs.

The Council of the Americas, a U.S.-based business organization representing over 200 U.S. companies invested in Latin America, issued a report in 2005 making specific recommendations regarding hemispheric cooperation on energy.[59] In the report, the Council maintains that the proper development of the hemisphere's abundant energy resources could be an engine for economic development in the region and also contribute to advancing hemispheric energy security. The Council called for the United States to make a priority of increasing hemispheric partnerships in Latin America. It also recommended that, in order to increase energy investment in the region, that Latin American nations improve their investment climates by committing to energy sector stability, transparency, and an appropriate role for state-owned energy companies. The report called for trilateral energy coordination among the three NAFTA countries as well as an increase in Mexican energy exploration and production. It also called for energy diversification utilizing renewable resources in order to lessen the impact of supply shortages in

[57] Inter-American Development Bank (IDB), *A Blueprint for Green Energy in the Americas*, April 2007, available at http://www.iadb.org/biofuels.

[58] Sidney Weintraub, Testimony before the House Committee on International Relations, Subcommittee on the Western Hemisphere, "The Role of the Western Hemisphere in Fostering U.S. Energy Security," March 2, 2006.

[59] "Energy in the Americas, Building a Lasting Partnership for Security and Prosperity," Council of the Americas, October 2005.

the Americas. The Council also recommended that multilateral organizations such as the IDB to make energy infrastructure development a priority throughout the region.

Concerns about the effect of Latin America's political environment on energy production in the region also prompted the U.S. Southern Command to issue a study in 2006 focusing on long-term oil production in several Latin American countries. The report warns against the dangers of reemerging state control in the energy sectors of several Latin American countries—especially Venezuela and Ecuador—that will likely thwart investment, increase inefficiencies, and hamper efforts to increase supplies and production. In Mexico, the report notes that the current regulatory environment and laws prohibiting foreign investment in the energy sector have dampened prospects for increasing oil reserves. The report asserts that pending any favorable changes to the investment climate, prospects for long-term energy production in Venezuela, Ecuador, and Mexico are at risk, while countries that have opened their energy sectors to foreign investment, like Trinidad and Tobago, will see increased reserves and production.[60]

An April 2007 study by the Inter-American Development Bank, *A Blueprint for Green Energy in the Americas*, reports that Latin American and Caribbean countries have shown great interest and promise in the development of biofuels that could contribute to the reduction of greenhouse gases from transport as well as the economic development of rural sectors in the region. Beyond Brazil, which has been the leader in ethanol development and production, the study also highlighted several other countries with great potential for biofuels development: Guatemala and Jamaica, with ethanol production from sugar; Colombia, with biodiesel production from palm oil; and Chile, with second-generation ethanol production from woodchips. The study also suggests ways the IDB could support the development of biofuels production in the region, including support for a biofuels development fund, the development of regulatory frameworks, and research and development.[61]

The Center for Strategic and International Studies (CSIS) also published a book in April 2007, *Energy Cooperation in the Western Hemisphere, Benefits and Impediments*, that examines the current state of energy cooperation among the hemisphere's oil and gas producers and the opportunities for greater cooperation. The study concludes that hemispheric energy cooperation would benefit from, among other things, greater harmonization of regulatory frameworks; improved infrastructure (such as new pipelines and LNG facilities); greater attention to the environmental effects of energy operations; the avoidance of populist measures that provide widespread subsidization of energy consumption; and recognition by the United States that its own energy independence is not viable without taking into account the needs of other countries in the hemisphere.

Congressional Interest

Over the past several years, there has been ongoing congressional interest in energy security issues. Some of that interest has focused on how to ensure that countries in the Western Hemisphere, which currently supply about half of U.S. imports of crude oil and petroleum

[60] U.S. Southern Command, "Long-Term Oil Production: Venezuela, Ecuador, Mexico, and Trinidad and Tobago," internal report, June 2006; Andy Webb-Vidal, "Resource Nationalism Creates Supply Threat, Warns U.S. Military," *Financial Times*, June 26, 2006.

[61] Inter-American Development Bank (IDB), *A Blueprint for Green Energy in the Americas*, April 2007.

products, remain reliable sources of energy for the United States. Another area of interest has been to promote cooperation among Latin American countries, which are divided between net energy exporting and importing nations, to ensure that enough clean, affordable, and reliable energy sources are exploited to support regional growth and development. Members have expressed support for developing a cohesive regional energy security framework, and also have expressed concerns about the effects of political instability, resource nationalism, and the increasing interest in the hemisphere's energy resources by such countries as China and India.

Committees in both houses held several hearings in 2006 focusing on Western Hemisphere energy security issues, while in March 2006, Senator Richard Lugar introduced S. 2435, the Energy Diplomacy and Security Act of 2006, which included provisions to increase hemispheric cooperation on energy (see legislative section below for details).

Several themes emerged from the congressional hearings. Several Members expressed concerns that recent events in Latin America—particularly in Bolivia and Venezuela—have demonstrated how political events can undermine the reliability of energy producing countries. At a May 16, 2006 hearing, Representative Darrell Issa, Chairman of the House Energy and Resources Subcommittee, said that the United States was at risk of being "boxed in by Iran, Venezuela, Russia, Nigeria, and Bolivia...[such that] we cannot effectively counter the use of energy as a weapon." Representative Stephen F. Lynch expressed concerns about the possibility that President Chávez might take "retaliatory oil-related actions...[against the United States] stemming from his opposition to U.S. policy." While Bush Administration officials tried to allay these congressional concerns, other witnesses, including David Goldwyn, a private energy analyst, pointed out several key threats to U.S. interests that have emerged in Latin America. He described how companies and their shareholders are seeing their asset values cut in half as a result of resource nationalism, oil and gas production is leveling off or declining, and U.S. influence in the region is declining (as Venezuela's power has increased).[62]

Another theme that emerged was the need for improved investment climates in the region in order to increase investment in energy sectors. At a March 2, 2006 hearing of the House Western Hemisphere Subcommittee, Eric Farnsworth of the Council of the Americas, asserted that countries in the region need to improve their investment climates in order to attract foreign investment and boost their competitiveness, echoing the recommendations of the Council's October 2005 report described above. Department of Energy Assistant Secretary for Policy and International Affairs Karen Harbert warned about the negative effects of unpredictable and non-transparent legal and regulatory frameworks, resource nationalism, and a lack of investment in exploration and maintenance on regional energy markets.[63] At a June 22, 2006 hearing by the Senate Foreign Relations Committee, Luis Giusti, former chairman of PdVSA and currently an adviser with the Center for Strategic and International Studies, asserted that unless investment climates across Latin America improve dramatically, foreign investment will continue to move to other regional energy markets.[64]

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[62] House Committee on Government Reform: Subcommittee on Energy and Resources and Subcommittee on National Security, Emerging Threats, and International Relations, Hearing on "Energy as a Weapon: Implications for U.S. Policy," *Federal News Service*, May 16, 2006.

[63] U.S. Congress, 109th Congress, Second Session. House Committee on International Relations Committee, Subcommittee on the Western Hemisphere. Hearing on "Western Hemisphere Energy Security," Serial No. 109-204, March 2, 2006.

[64] Testimony by Luis Giusti before Senate Foreign Relations Committee, Hearing on "Energy Security in Latin America," *CQ Congressional Testimony*, June 22, 2006.

A third theme that emerged from the hearings focused on identifying obstacles and generating possible solutions to improve hemispheric cooperation on energy-related issues. At a June 22, 2006 hearing of the Senate Foreign Relations Committee, Senator Richard Lugar asserted that his proposed Energy Diplomacy and Security Act would stimulate energy partnerships among energy producers and consumers. Senator Ken Salazar testified that our shared interests with countries in the Western Hemisphere "should be obvious, but too often they are obscured by politicized rhetoric, mis-perceptions, and old grievances." Another witness suggested that U.S. energy diplomacy, which thus far has been focused on engaging Canada and Mexico, should be expanded, focusing on finding common ground with energy producing and consuming nations across the region.[65]

Legislative Initiatives

Two legislative initiatives in the 110th Congress would increase hemispheric cooperation on energy. Although global in scope, S. 193 (Lugar), the Energy Diplomacy and Security Act of 2007, has provisions calling for the establishment of a Western Hemisphere energy crisis response mechanism and a regional-based ministerial forum known as the Hemisphere Energy Cooperation Forum that would be involved in responding to temporary energy supply disruption, fostering long-term supply security, and promoting energy access for undeveloped areas. The bill also calls for the establishment of a Hemisphere Energy Industry Group to increase public-private partnerships, foster private investment, and enable countries to devise energy agendas that are compatible with industry capacity and cognizant of industry goals. The Senate Foreign Relations favorably reported the bill on April 12, 2007 without amendment (S.Rept. 110-54).[66]

Another initiative, S. 1007 (Lugar), the United States-Brazil Energy Cooperation Pact of 2007, calls for the same cooperation groups in S. 193 and also directs the Secretary of State to work with Brazil and other Western Hemisphere countries to develop partnerships to accelerate the development of biofuels production, research, and infrastructure. The bill was introduced March 28, 2007, and referred to the Senate Foreign Relations Committee.

In addition to legislation calling for greater hemispheric cooperation on energy security issues, there has been some debate within Congress concerning whether or not to lift existing taxes and tariffs on foreign ethanol imports. The United States currently allows duty-free access on sugar-based ethanol imports from many countries through the Caribbean Basin Initiative, Central American Free Trade Agreement, and the Andean Trade Preferences Act, among others.[67] Brazil is currently the world's largest consumer and producer of ethanol from sugarcane. Some Brazilian ethanol is processed at plants in the Caribbean for duty-free entry into the United States, but exports arriving directly from Brazil are currently subject to a 54-cent-per-gallon tax, plus a 2.5% tariff. Some Members of Congress favor an elimination of taxes on inexpensive imported ethanol in order to help displace gasoline consumption and contend with rising fuel prices, while other Members who support the U.S. ethanol industry oppose such action.

[65] U.S. Senate Committee on Foreign Relations, Hearing on "Energy Security in Latin America," June 22, 2006.

[66] A previous version of the bill was introduced in the 109th Congress as S. 2435 (Lugar), and the Senate Foreign Relations Committee held several hearings on energy security in the 109th Congress.

[67] For more information, see CRS Report RS21930, *Ethanol Imports and the Caribbean Basin Initiative (CBI)*, by Brent D. Yacobucci.

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