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

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Summary

Western Hemisphere countries supply the United States with almost 50% of its imported oil and petroleum products. 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 80 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 37%, followed by Venezuela, with 29%. 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 accounts for about 70% of U.S. liquified natural gas 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. 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 examines regional integration efforts, including Venezuela's oil programs offering oil to many Latin American and Caribbean countries on a preferential basis, the Mexico-led Meso-American Energy Integration Program, and the proposed South American natural gas pipeline. 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 in the 109th Congress. This report will be updated to reflect any additional legislative action taken through the end of the 109th Congress.

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Introduction

The United States is the top oil consumer in the world, consuming some 20.7 million barrels of oil per day (mbd) in 2005, according to the Department of Energy, with net oil imports accounting for 12.1 mbd or 58% of the total.[1] Western Hemisphere countries supplied the United States with 49% of oil and petroleum product imports and just over 50% of U.S. crude oil imports in 2005. 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, Colombia, Brazil, Trinidad and Tobago, and Argentina. (See **Table 1**.)

In terms of proven oil reserves, the Western Hemisphere has some 316 billion barrels, about 24% of reserves worldwide. Canada leads the pack with almost 179 billion barrels, with 174 billion barrels consisting of oil from Alberta's tar sands, which is replacing output from aging conventional fields. Venezuela is second in the hemisphere with almost 80 billion barrels of proven oil reserves, but this does not include as much as 270 billion barrels of extra-heavy and bitumen deposits from the Orinoco belt in eastern Venezuela. If these deposits became recoverable, Venezuela would more than quadruple its proven oil reserves, exceeding Saudi Arabia's proven reserves of 264 billion barrels. (See **Table 2**.)

The United States is also the top consumer of natural gas in the world, with about 21.8 trillion cubic feet (tcf) consumed in 2005, and net gas imports of about 3.6 tcf or almost 17% of total U.S. natural gas consumption. Canada accounts for the almost all of the 3.7 tcf in natural gas imported by pipeline, while a small amount is imported from Mexico. Trinidad & Tobago accounts for 0.4 tcf in U.S. liquified natural gas (LNG) imports in 2005, about 70% of total U.S. LNG imports.[2]

In terms of proven natural gas reserves, the Western Hemisphere has about 516 tcf, or about 8% of total world reserves. The United States has the largest share of proven natural gas reserves in the hemisphere, with almost 193 tcf or 37% of the

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[1] 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.

[2] U.S. Department of Energy, Energy Information Administration, *Natural Gas Monthly*, Tables 3 and 6, August 2006.

total, followed by Venezuela, with reserves of 152 tcf, Canada with 57 tcf, Trinidad and Tobago with 25 tcf, and Bolivia with 24 tcf. (See **Table 2**.)

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.[3] Moreover, 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.[4]

Table 1. U.S. Crude Oil Imports from Western Hemisphere Countries, 2005
(Annual, Thousands of Barrels)

	Annual, Thousand Barrels	Percentage of Total U.S. Crude Oil Imports
Canada	599,681	16.34
Mexico	565,919	15.42
Venezuela	449,196	12.24
Ecuador	100,681	2.74
Colombia	57,002	1.55
Brazil	34,459	0.94
Trinidad & Tobago	22,687	0.62
Argentina	20,608	0.56
Guatemala	3,885	0.11
Peru	1,501	0.04
Bolivia	264	.001
Total — Western Hemisphere	1,855,883	50.56
Total — U.S. Imports Worldwide	3,670,403	100.00

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

[3] International Energy Agency, "Map Energy Indicators, Latin America, Net Imports," available at [http://www.iea.org/textbase/subjectqueries/maps/LAmerica/imports.htm].

[4] Testimony by Karen A. Harbert, U.S. Department of Energy, op. cit.

Table 2. Western Hemisphere: Proven Oil and Gas Reserves, 2005

	Proven Oil Reserves (billion barrels)	**Proven Natural Gas Reserves** (trillion cubic feet)
Argentina	2.320	18.866
Barbados	.002	.005
Bolivia	.441	24.000
Brazil	11.243	11.515
Canada	178.792	56.577
Chile	.150	3.460
Colombia	1.542	4.040
Cuba	.750	2.500
Ecuador	4.630	.345
Guatemala	.526	.109
Mexico	12.882	15.985
Peru	.929	*8.723
Suriname	.111	—
Trinidad & Tobago	.990	25.880
United States	**21.371	192.513
Venezuela	***79.729	151.395
Total: Western Hemisphere	316.410	515.913
Total: World	1,292.550	6,112.144

Source: Oil & Gas Journal, "Worldwide Look at Reserves and Production," December 19, 2005.

* Peru's proven natural gas reserves reportedly could increase to 15-16 tcf upon the completion of seismic work on a block of the Camisea Gas Project. See U.S. Department of Energy, Energy Information Administration, "Country Analysis Briefs: Peru," May 2006.

**This amount does not include recent oil finds in the Gulf of Mexico that could increase U.S. proven reserves by 3-15 billion barrels.

*** This amount does not include as much as 270 billion barrels of extra-heavy Venezuelan crude oil.

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 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 closely follows the actions by energy-producing countries around the world that want to capture more of the profit from their natural resources.[5]

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 new 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 mid-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 recent victory of former President Alan García over Ollanta Humala, an admirer of Hugo Chávez, has eased international concerns about the future development of Peru's energy sector. In Mexico, the 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.[6] 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, it should be noted that across the region, there is continuing underinvestment in energy infrastructure, with some analysts maintaining that many countries are at risk for widespread electricity shortages.[7] In the case of

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[5] Steven Dudley, "High Prices an Incentive for Tighter State Control," Miami Herald, July 5, 2006.

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

[7] "Latin America Forecasts: Energy in 2006," in *Latin American Advisor, Latin American* (continued...)

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 markets for their growing energy needs. The Chinese government has been acquiring interests in exploration and production abroad, including in Latin America. China and Venezuela signed a series of energy-related agreements in 2005, including a pledge by the state-run China National Petroleum Corporation (CNPC), which operates two oil fields in Venezuela, to spend over $400 million in developing oil and gas reserves. The state-run China Petrochemical Corporation (Sinopec) signed an agreement in April 2006 with Brazil's Petrobras to build a natural gas pipeline. 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 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 August 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

Since Venezuela is the fourth major supplier of foreign oil to the United States (after Canada, Mexico, and Saudi Arabia) providing about 1.2 million barrels per day (mbd) or about 12% of U.S. crude oil imports, a key U.S. interest has been ensuring the continued flow of oil from that country. While 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. Chávez has survived several attempts to oust him from power, including an April 2002 coup attempt and an August 2004 recall referendum. The country's next presidential election is set for early December 2006, and most observers believe there is a strong chance that Chávez will win another six-year term.[8]

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.

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[7] (...continued)
Forecasts: 2006, Inter-American Dialogue, Washington, D.C., January 2006.

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

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.[9]

PdVSA currently is a minority owner in four extra-heavy oil Orinoco River Basin projects involving six foreign companies, but the Venezuela government has plans to bring these projects under its control. It is seeking to increase PdVSA control to at least 51% PdVSA by the end of 2006. In late August 2006, Venezuela's National Assembly approved legislation raising taxes for these six companies to 50% similar to the new tax rates of joint ventures for the marginal oilfields.[10]

Majority state ownership in the oil sector fulfills a policy goal of the Chávez government to assert greater control over the country's oil reserves, but 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.[11]

Despite notable frictions in bilateral relations, Venezuela continues to be a major supplier of oil to the United States. Oil exports account for some 90% of Venezuela's exports to the United States, and 68% of Venezuela's oil exports are destined for the United States, highlighting the current dependency of Venezuela on the U.S. market. 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. At various junctures, however, Chávez has threatened to stop selling oil to the United States, including in February 2006 when he asserted that the "U.S. government should know that, if it crosses the line, it will not get Venezuelan oil."[12] In April 2006, he warned that his government would blow up its oil fields if the United States ever were to attack.[13] Venezuela's Ambassador to the United States asserted in late July 2006 that oil-cutoff comments by Venezuelan officials, including President Chávez, only reflect what would be Venezuela's response against "aggression"

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

[10] Christopher Toothaker, "Venezuela to Take State Majority in Heavy Oil Project by Year's End," *Associated Press,* August 29, 2006.

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

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

[13] "Chávez Says He'll Blow Up Oil Fields if U.S. Attacks," *Miami Herald,* April 20, 2006.

initiated by the U.S. government.[14] Many observers believe that Chávez's threats have been merely part of his rhetoric that is designed to bolster his domestic political support.

Some observers, however, have raised questions about the security 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.[15] 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. During his August 2006 visit to China, President Chávez announced that Venezuela would boost its oil exports to China to 500,000 barrels per day (bpd) in five years from a current level of 150,000 bpd. China has also promised investment of $5 billion in energy projects in Venezuela by 2012.[16]

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.[17] 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 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."[18]

Bolivia

Bolivia boasts the second-largest natural gas reserves in Latin America. Industry experts say Bolivia needs technical assistance and billions of dollars in

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

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

[16] Myra P. Saefong, "Venezuela-and-China alliance: Troubling in More Ways Than One," *Market Watch* (DowJones), September 1, 2006.

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

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

foreign direct investment (FDI) to better exploit its natural gas reserves. Bolivia's chronic instability, combined with a May 2005 hydrocarbons law that includes tax hikes on foreign firms, prompted FDI in the country's oil and gas sectors to plummet between 2003 and 2005.

Despite the potential negative effect that it could have on foreign investment, President Evo Morales, a leftist indigenous leader elected as president of Bolivia in December 2005, fulfilled his campaign pledge to nationalize the country's natural gas industry on May 1, 2006.[19] This action significantly raised energy costs for neighboring Argentina and Brazil and has raised tax and royalty rates to a level that many investors perceive to be unprofitable.[20] The nationalization move prompted Brazil's Petrobras and Spain's Repsol-YPF — the largest foreign investors in Bolivia's energy sector — to halt all new investments in the country, although both companies are still operating in Bolivia and are renegotiating contracts with the Morales government.[21] Bolivia has reached an agreement with Argentina to increase the prices of its natural gas exports, but negotiations with Brazil have stalled.

Critics of the nationalization measure assert that, even with new investments and advisors from Venezuela, Bolivia has neither the technological nor financial capacity to develop and export its gas resources on its own. These criticisms were validated as the Bolivian government announced in mid-August 2006 that it was temporarily suspending the nationalization process due to a lack of economic resources at its state-run oil company, *Yacimientos Petroliferos e Fiscales Bolivianos* (YPFB).[22] On August 28, 2006 the nationalization process was dealt another blow as the head of YPFB, Jorge Alvarado, resigned. Alvarado reportedly violated the terms of the nationalization decree by having YPFB contract to export crude oil through an independent Brazilian company. Andrés Soliz, the hydrocarbons minister, then resigned soon after his September 12 decree, which placed Petrobras refineries under immediate YPFB control, was suspended following protests from the Brazilian government.[23]

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[19] Presidential Decree No. 28071 placed Bolivia's oil and natural gas reserves under state control. It returned the Bolivian government to a majority holding in the companies it had privatized in the 1990s as well as two Petrobras refineries. The Morales government has said that most of those holdings are currently held in trust, but some will be transferred from private investors to the Bolivian government. It is unclear whether an indemnity will be paid for those transferred shares. The decree gives all companies until October 2006 to sign new contracts agreeing to new tax/royalty measures. For large fields with outputs of more than 100 million cubic feet per day, the tax/royalty burden will increase to 82%. Smaller fields will be subject to a 50% tax/royalty as outlined in the May 2005 Hydrocarbons Law. See "Country Report: Bolivia," *Economist Intelligence Unit*, August 2006.

[20] "Bolivia Endangers Southern Cone Growth," *Energy Economist*, June 1, 2006.

[21] "Left Face: New President Has Bolivia Marching to Chávez's Beat," *Wall Street Journal*, May 25, 2006; "Commodities Report: What is PDVSA up to?" *Latin American Economy and Business*, May 2006.

[22] "Nationalization of Gas Stalling," *Miami Herald*, August 15, 2006.

[23] "Brazil Row Leads to Shake-up at Bolivian Hydrocarbons Ministry," *EFE*, September 16, 2006; "Head of Bolivian State Oil Company Quits," *Miami Herald*, August 29, 2006.

Brazil

Brazil has a fairly balanced energy matrix and has significantly reduced its dependence on foreign energy sources. Some 65% of Brazil's power is generated by hydroelectric plants. In addition, Brazil boasts 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. In addition to being close to achieving oil self-sufficiency, decades of state investment have helped Brazil become the world's largest consumer and producer of ethanol from sugar cane, which now supplies some 40% of the country's motor fuel and is extremely competitive with gasoline. Several major auto-makers have predicted that flex-fuel cars, which run on a combination of ethanol and gasoline, will represent 100% of their production in Brazil by the end of 2006, eliminating gas-only models.[24] Brazil's sugar-based ethanol is considered more efficient than corn-based derivatives developed in the United States.

The primary weakness in Brazil's energy regime is the country's over-reliance on natural gas from neighboring Bolivia. Some 50% of the gas used in Brazil, and 75% of the gas used in the industrial state of São Paulo flows from Bolivia. Most analysts predicted that since Petrobras produces some 15-20% of Bolivia's GDP, Brazil would be able to exert leverage over the populist government of Evo Morales, but those predictions were not borne out with Bolivia's nationalization of its natural gas industry.[25] In response, Petrobras has halted all new investments in Bolivia and dramatically sped up efforts to exploit Brazilian natural gas supplies. Negotiations between Petrobras and YPFB over a price increase for Bolivian gas exports to Brazil have stalled and an agreement between the two may not be reached prior to the November deadline established by the nationalization measure. It remains to be seen how the recently announced delays in the nationalization process may affect the negotiating process.

Ecuador

Private companies have had a difficult time investing in the Ecuadorian oil industry owing to the country's chronic instability and tendency for conflicts with private producers. 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.[26] Both state and private production was hurt in August 2005 by a massive protest in two oil-producing provinces led by indigenous groups demanding more public works projects to be funded by oil revenues, as well as March 2005 protests against a proposed free trade agreement (FTA) with the United States. In March 2006, Ecuador enacted a new hydrocarbons bill that increased the state's share of oil revenues from 50% to 60%, mirroring the trend towards resource nationalism that has occurred in Venezuela and Bolivia.

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[24] "Brazil's Road to Energy Independence," *Washington Post*, August 20, 2006.

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

[26] "DJ Petroecuador Ex-President: Company Faces Deep Financial Crisis," *Dow Jones Commodities Service*, Feb. 10, 2006.

The government of Ecuador has a number of ongoing trade disputes with foreign oil companies that has prompted concern among investors and U.S. policymakers. On May 15, 2006, the Ecuadorian government then terminated the contract of the U.S. firm Occidental Petroleum (Oxy) for an alleged breach of contract. After a failed deal to ship oil produced in Oxy's former fields to Venezuela for processing, Ecuador has sought, thus far unsuccessfully, to auction the fields to another state-run oil company. Occidental is asking for the Ecuadorian government to give back the company's assets and pay $1 billion in damages. The U.S. government responded to this contract termination by condemning Ecuador's failure to respect foreign investment and suspending FTA negotiations indefinitely.[27] In another unrelated dispute, Chevron, which is facing an environmental case for alleged past pollution of indigenous territory by its subsidiary, Texaco, has threatened to file a $750 million claim against the Ecuadorian government for alleged contract violations.

Mexico

Mexico is the second largest supplier of crude oil to the United States after Canada, accounting for 15.4% of U.S. imports in 2005. Oil continues to be important for the Mexican economy, accounting for 10% of exports and one-third of government revenues, with the state-oil company, *Petróleos Mexicanos* (Pemex), providing about 60% of its revenues to the federal government. 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. 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. While in March 2006 the government buoyantly announced a new oil find off the coast of Veracruz that could hold 10 billion barrels, it will take substantial investment and up to a decade to bring it into production.

The question of whether Mexico will open its state-controlled oil production to foreign investment found its way into the 2006 presidential campaign. At issue was whether the new government would advance reform of Pemex to allow partial foreign ownership in the company in order to boost exploration to increase the country's declining oil reserves. While all three major presidential candidates rejected the privatization of Pemex, they laid out different positions about how to deal with its problems. Roberto Madrazo of the center-left Institutional Revolutionary Party called for modernizing Pemex so that it would not be the government's "cash box" and so it could make strategic alliances with foreign oil companies. Andrés Manuel López Obrador, of the leftist Party of the Democratic Revolution (PRD), opposed any opening of Pemex to private interests, and maintained that he would better organize it and lower gas prices in the country. The narrow victor in the

[27] "Ecuador: Ecuador Falling Under Chávez's Spell," *Latin American Regional Report*, June 2006.

presidential race, Felipe Calderón of the center-right National Action Party of President Fox, called for a limited opening of Pemex to allow it to negotiate freely with private companies in order to gain access to modern technology that would boost exploration and production.[28]

The closeness of the presidential race (with just half of a percent separating Calderón and López Obrador), López Obrador's vows to continue protesting the election results, and the PRD's strong showing in congressional elections make it unlikely that energy reform will move ahead swiftly under the Calderón government after it takes office in December. President-elect Calderón maintains that opening the energy sector to foreign investment will not be his first legislative priority, especially since energy reforms are a sensitive political topic in Mexico.[29]

Regional Integration Efforts

A number of energy integration initiatives have been launched in Latin America in response to high energy prices and energy shortages in some nations. Many Caribbean and Central American nations that are dependent on oil imports experienced dramatic increases in their oil bills. Some initiatives — such as Venezuela's preferential oil programs and the Mesoamerican Energy Integration Program involving Mexico, Colombia, the Dominican Republic and Central America — were prompted in part by large energy import bills facing many Latin American and Caribbean nations after oil price hikes in 2005. Gas shortages in Argentina and Chile, and Brazil's rapidly growing demand for natural gas have also prompted several ambitious natural gas pipeline initiatives in South America.

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 the Caribbean, Venezuela is offering oil on preferential terms in a new program known as PetroCaribe launched in June 2005. 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.

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[28] Hugh Dellios, "Mexicans Cling Tightly to 'Their' Oil," *Chicago Tribune,* June 2, 2006; Maria Dickerson, "Oil Find in Mexico Far from Success," *Los Angeles Times*, March 15, 2006.

[29] Jason Lange, "Mexico's Calderón: Energy Reform Not 1st on Legislative Agenda," *Market News International*, September 7, 2006.

Under the program, Venezuela announced that it would supply 190,000 barrels per day of oil to the region, with countries paying market prices for 50% of the oil within 90 days, and the balance paid over 25 years at an annual interest rate of 2%. When the price of crude oil is over $50 a barrel, the interest rate is cut to 1%.[30] Cuba, a major beneficiary of PetroCaribe, receives some 90,000 bpd of oil from Venezuela, while the Dominican Republic receives some 40-45,000 bpd and Jamaica receives some 21,000 bpd (with plans to increase this to 23,500 bpd).[31] In Central America, the Honduran government has expressed interest in securing oil on a preferential basis from Venezuela, while in Nicaragua, a group of leftist mayors signed an agreement in April 2006 to provide their communities with cheap oil.[32]

Venezuela is also moving ahead with additional preferential oil agreements in the Andean region (known as PetroAndina) and elsewhere in South America (PetroSur). In the United States, Venezuela has provided subsidized oil to low-income families in New York and several New England states through Citgo, a subsidiary of PdVSA.

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 is expected to start in 2007, and is to be supplied with oil from both Brazil and Venezuela. 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 is involved in refurbishing an unfinished oil refinery in Cienfuegos, and recently signed an exploration and production agreement with Cupet, Cuba's state-oil company.[33]

Mexico and the Meso-American Energy Integration Program

As Venezuela has launched energy cooperation programs with the Caribbean and South America, Mexico has announced an energy cooperation program with Central America, the Dominican Republic, and Colombia. In December 2005,

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[30] "Venezuela: Caribbean Will Receive 190,000 bpd," *Latinnews Daily*, Sept. 8, 2005.

[31] "A Look at Progress on Caribbean Oil Deal,: *AFX International Focus*, July 3, 2006; "Venezuela to Increase Supply of Oil to Jamaica and China," *Global Insight*, August 16, 2006.

[32] In response, the Nicaraguan government has asked President Chávez, who publicly supports Sandinista leader Daniel Ortega in the country's presidential election this year, to stop meddling in its internal affairs. "Nicaragua to Chávez: Quit Meddling in Our Country," *Orlando Sentinel*, May 6, 2006.

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

President Vicente Fox and the Central American presidents met in Cancun to sign a Meso-American Energy Integration Program (PIEM), which builds 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. The Colombian government has announced plans to construct a highway to connect the country with Panama and the rest of Central America.

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 a pipeline to connect Panama to Guatemala. The pipeline, known as the Central American Electrical Connection System (Siepac), is expected to be operating by 2008. The other main initiative of the PIEM is the construction of a new refinery to be located in either Panama or Guatemala at a total cost of about $7 billion. The IDB has approved a loan for $400 million for the construction of that refinery, but the bulk of the project will be funded by the private sector. According to the PIEM plan, 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.

Although Venezuela, along with Colombia and Trinidad and Tobago, has been invited to supply crude oil for the new refinery, observers have described the PIEM as "an alternative to Chávez." Analysts argue that Mexico is launching this initiative now as an attempt to solidify its influence over Central America and act as a countervailing force to Venezuela in Latin America. Some skeptics have warned that the Mexican Congress may not approve the PIEM plan because it would likely require cutting supplies to existing Mexican refiners. They further maintain that most Mexican lawmakers are more likely to favor construction of a new refinery in Mexico rather than one based in Central America.[34]

South American Natural Gas Pipeline

In December 2005, Venezuela, Argentina, and Brazil initiated plans to build a 5,000 mile natural gas pipeline that would run from Venezuela through Brazil and end in Argentina, with possible branches to Uruguay and Bolivia. Bolivia formally joined talks for the potential project in late June 2006. President Hugo Chávez asserts that the pipeline would be the beginning of a "South American consensus" and mark an era of regional cooperation that will increase its energy independence.

The ambitious project, which reportedly would cost $20-$26 billion over a seven-year period, could face significant opposition because of the potentially major consequences for the environment and indigenous communities in the Amazon. Some analysts contend that the initiative is merely political rhetoric, and that

[34] "Mexico Challenges Venezuela in Petro-Diplomacy Game," *EFE News Service*, June 2, 2006; "Central America: Mexico and Brazil Enter as Rivals to Venezuela," *Latin America Weekly Report*, June 6, 2006; "IADB Okays $400 million for Central American Oil Refinery," *Reuters*, August 10, 2006, "Mexico Key to Refinery Plans," *Petroleum Economist*, July 1, 2006.

governments in the region do not have the capital needed to finance such a project. Moreover, they contend that the cost could far exceed the current estimate, and that, because of the complexity and enormity of the project, startup operations would be unlikely before 2020-2025. Some observers who question the economic viability of such a pipeline maintain that it would be far cheaper to ship liquified natural gas in tankers.[35]

The countries involved in the project agreed to a $9 million feasibility study in April 2006, but in late August 2006 the study was postponed for at least a year, according to Petrobras. This was in large part because Brazil, in the aftermath of Bolivia's nationalization of its gas sector, has been focusing its attention on increasing its own natural gas production and constructing Liquified Natural Gas terminals to boost LNG imports that would reduce Brazil's dependence on Bolivian gas.[36] The gas pipeline project could also meet resistence in Argentina, because of the negative impact of the project on develop its own gas resources.[37]

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.[38] 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 October 2005 making specific recommendations regarding hemispheric cooperation on energy.[39] 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

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[35] Alan Clendenning, "Energy Independence is South America's Pipe Dream," *Associated Press Newswires*, Jan. 19, 2006; Monte Reel, "A Latin American Pipe Dream," *Washington Post*, Feb. 12, 2006; John Sweeney, "Latin America in 2006: Energy Competition and Insecurity," *G2Americas*, 2006; "Latin America: Pipeline Favours Politics, Not Markets," *Oxford Analytica*, March 27, 2006.

[36] "Pipeline Postponed Over Gas Dispute," *Oxford Analytica*, August 25, 2006.

[37] "Commodities Report: What is PDVSA up to?" *Latin American Economy and Business*, May 2006.

[38] 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.

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

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 appropriated 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 the Americas. The Council also called on 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 June 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.[40]

Congressional Interest

Over the past year, 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 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 includes

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

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).[41]

Another theme that emerged is 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.[42] 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.[43]

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

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[41] 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.

[42] 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.

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

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.[44]

Legislation in the 109th Congress

Although global in scope, S. 2435 (Lugar), the Energy Diplomacy and Security Act of 2006, introduced on March 16, 2006, has provisions that would increase hemispheric cooperation on energy. Section 5 (c) of the bill calls for the Secretary of State, in coordination with the Secretary of Energy, to establish a Western Hemisphere energy crisis mechanism that would include information sharing and coordination in case of energy supply emergencies, technical assistance, emergency demand restraint measures, fuel switching preparedness and alternative fuel production capacity, and demand intensity reduction programs.

Section 6 (b) of the bill calls for the Secretary of State, in coordination with the Secretary of Energy, to seek to establish a regional-based ministerial forum known as the Hemisphere Energy Cooperation Forum. The forum would be involved in implementing: an Energy Crisis Initiative to respond to temporary energy supply disruptions; an Energy Sustainability Initiative to foster long-term supply security; and an Energy for Development Initiative to promote energy access for underdeveloped areas.

Section 6 (c) of the bill calls for the Secretary of State, in coordination with the Secretary of Commerce and the Secretary of Energy, to approach the governments of other hemispheric countries for cooperation in establishing a Hemisphere Energy Industry Group that would be coordinated by the U.S. government, involving industry and government representatives from the hemisphere. The purpose of the group would be 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.

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

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

Agreement, and the Andean Trade Preferences Act, among others.[45] 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. Various legislative initiatives have been introduced in the 109th Congress that would eliminate these taxes on foreign ethanol — H.R. 5170 (Shadegg), S. 2760 (Feinstein), S. 2763 (Schumer) — and President Bush has called for its elimination. Senate Finance Committee Chairman Charles Grassley and several other Members of Congress have opposed these proposals.[46]

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

[46] "Ethanol Tariffs Defended as U.S. Producers Fear High Fuel Price Blame," *Inside U.S. Trade*, April 21, 2006; Lynn Garner, "Bush Tells Congress to Drop Ethanol Tariff, Sets Up Clash with Finance Chair Grassley," *International Trade Reporter*, May 11, 2006, and "Rep. Boehner Drops House Plans to Lift Tariffs on Imported Ethanol," *International Trade Reporter*, May 18, 2006.