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Alberta Oil Sands: Sustainable Energy Security for the Americas?

By Satya Das

Finding the balance between economic growth and environmental stewardship is a paramount challenge in the Americas, nowhere more so than in the development of oil and natural gas.

Given the prevalence and abundance of fossil fuel resources in the Americas, sustainable development practices must be adopted and embedded as we develop our resources to ensure secure and stable energy supplies for the peoples of the hemisphere.

The northwestern Canadian province of Alberta, home to the largest proven oil reserves in the Americas (and second globally after Saudi Arabia), is perhaps the highest-stakes testing ground for establishing hemispheric energy security within a context of sound environmental management. With 178 billion barrels of oil reserves recoverable with today's technology, the bituminous deposits of Alberta's oil sands uniquely com-

bine an abundant resource with political and economic stability. That may be one reason the oil sands now host one of the largest industrial expansions in human history, with more than \$130 billion in current and planned investments.

The oil sands hold the promise that both North and South America can rely on Alberta and its energy resources for decades to come, as trade within the Americas grows and Canadians become more fully integrated into pan-American economic and cultural streams. So far, the most direct market for Alberta's energy resources has been limited to the United States. Yet if we can find the alchemy of environmentally sustainable large-scale development, the entire hemisphere can tap into Alberta's natural wealth.

Yet the oil sands are under intense scrutiny for the environmental cost of extraction, particularly in the

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Note from the Guest Editor

As global energy supplies struggle to keep up with ever-growing demand, and oil prices hit record highs seemingly every week, countries around the world are being forced to re-assess their energy policies.

In the Americas—a resource-rich expanse of two continents that is marked by vast differences and complex relationships—the way forward is fraught with challenges. The articles and analysis contained in this report—the first joint publishing project between the Canadian Foundation for the Americas' *FocalPoint* and the Inter-American Dialogue's weekly *Energy Advisor* newsletter—identify some of the key challenges and opportunities in the Hemisphere for energy policy.

Energy is assuming more prominence in relations between countries. Higher global energy prices, accompanied by a wave of "hydrocarbon nationalism" in Latin America, as described in Matteson Ellis' article on national oil companies, has given rise to tensions between buying and selling nations in the Americas, such as the U.S. and Venezuela or Brazil and Bolivia.

At the same time, energy-producing and consuming countries' needs have also exerted a restraining influence, and in some cases even have the potential to soften old grievances.

The U.S. and Venezuela, despite mutual mistrust and rhetorical rancor, have been forced to limit their squabbles to prevent them from upsetting oil trade. Meanwhile, Chile, which is scrambling to replace dwindling natural gas imports from neighboring Argentina, may be the closest it has been in decades to addressing landlocked but gas-rich Bolivia's longstanding demand for maritime access.

Analysts suggest in this report that energy needs could even undercut support for the nearly five decade-old U.S. embargo against Cuba, which could be sitting

on billions of barrels of offshore reserves a tantalizing 60 miles off the Florida coast.

To some extent, energy security has always defined hemispheric relations. As Johanna Mendelson Forman and Susana Moreira note, U.S. oil imports from Latin America far surpass imports from any other region of the world, including the Middle East. With much of its hydrocarbons wealth still untapped, Latin America could help meet the Western Hemisphere's energy needs for years to come. But Latin America's contribution to energy security in the Americas will depend on maintaining political and economic stability—and countries' ability to promote sustainable economic growth that lifts millions of people out of poverty.

A growing challenge to economic and political stability for Latin America is soaring food and fuel costs. Jeremy Martin writes in his article that governments in Mexico, Venezuela, Argentina, and elsewhere are spending billions of dollars on fuel subsidies to assure cheap fuel and keep a lid on social unrest. But as national budgets come under increasing strain, these governments may have to consider alternatives.

Meanwhile, skyrocketing food prices are leading governments around the world to question the wisdom of a partial shift to biofuels, which according to a recent World Bank report could be responsible for as much as 75 per cent of the price increases. This is of tremendous significance for Brazil, the world's biggest ethanol exporter, although analysts note in this report that Brazilian ethanol is derived from sugar cane and as such has only a minor impact on food price rises.

Another issue is environmental sustainability. Record oil prices are driving producers into new, uncharted areas of hydrocarbons development, creating new risks to the environment at a time of increasing calls for greater protection of the world's natural treasures and heightened attention to global climate change. Satya Das writes in his report that a key testing ground for finding the right balance between energy needs and protecting the environment may be in the Canadian province of Alberta's vast oil sands. With some 178 billion barrels of recoverable oil reserves, Alberta's oil sands could supply the Western Hemisphere for decades to come, and has the potential to become a model of environmental sustainability for other such large-scale development projects. 🌍

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Alberta Oil Sands *(continued from page 1)*

mineable oil sands (representing 15 per cent of the recoverable deposit) which entail massive deforestation, open pit mining and toxic tailing ponds that recently claimed the lives of 500 waterfowl.

The search for sustainable growth is gathering momentum in Alberta, whose government has been under the scrutiny of environmental advocates concerned about the region's ecology in the face of such fast growth. In a March 2007 speech to an arctic gas symposium in Calgary, Alberta Premier Ed Stelmach acknowledged the growing importance of the environment on public policy.

"Our government is working hard to balance Alberta's role as a key energy supplier to North America with the equally important role of safeguarding the environment. I don't believe one has to come at the expense of the other."

Now, as we await the outcome of a U.S. presidential election that portends a greener agenda in U.S. energy consumption, Alberta is greening its own growth. Alberta is set to make significant investments in 2008-2009 in carbon capture and storage (CCS), the most promising means of rapidly reducing greenhouse gas emissions, while enabling further oil sands development. Collaboration between industry and government is essential, as the private sector contends that it cannot deliver CCS alone. Government regulations

and standards are needed to create a level playing field. For now, government leadership in CCS can help to establish a market value for carbon. With this market value established, industry can work more effectively

CO₂ capture and storage is potentially the most substantive way for Canada to reduce emissions within five to ten years.

in making the investments needed to advance technologies. Industry needs a clear policy framework before it can jump in.


The Stelmach government announced in July 2008 a \$4 billion investment in mitigating greenhouse gases, half of it for carbon capture and storage and the rest for green transit and infrastructure. The government "down payment" of \$2 billion for carbon capture could make the oil sands much more sustainable, particularly as production moves from open-pit mining to deeper oil sands accessed by drilling and heating the reservoir.

The essence of this CCS process is to capture carbon from coal-fired power-generating plants, oil sands plants and other carbon emitters and then to store it underground. One application with strong economic potential is in enhanced oil recovery, storing the carbon in operating oil fields in the Western Sedimentary Basin, thus enabling further production of conventional oil; the idea is strongly promoted by industry. The Integrated CO₂ Network (ICO₂N) initiative that is promoting CCS in Canada brings together 13 major companies from a cross-section of industries with the potential to capture carbon dioxide and to advance carbon capture and storage. In February 2007, the ICO₂N firms (Suncor, TransAlta, Agrium, Conoco Phillips, Nexen, Husky, Sherritt, Syncrude, Shell, EPCOR, Air Products,

CNRL, and Imperial Oil) urged all levels of government in Canada "to engage industry in an effort to overcome the challenges facing CCS." The firms noted that CO₂ capture and storage is potentially the most substantive way for Canada to reduce emissions. It can deliver large scale CO₂ reductions within five to ten years, the industry says.

Beyond oil sands, Alberta's substantial coal reserves may come to offer the Americas electrical power generation with near-zero emissions. By processing coal to produce synthesis gas (syngas) and hydrogen, the Dodds-Roundhill Coal Gasifica-

tion Project, a partnership between Sherritt and Epcor, is designed to provide Alberta with a new source of economic and environmentally sustainable energy. The project represents a key step toward clean power generation, as its syngas is designed to be burned in an oxygen-rich environment, thereby producing a concentrated stream of carbon dioxide emissions that can be readily captured and sequestered.

All this doesn't mean that Alberta's path is set in stone. Only through a timely and unique blend of abundant energy resources in an open and democratic society, and the desire to develop our resources in a philosophy of environmental stewardship, can Alberta ensure its place as a leader in providing energy security to the Americas. 

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Who Will Help Cuba Exploit Its Offshore Oil Wealth?

Q Cuba reportedly plans to start drilling sometime next year to access several billion barrels of crude believed to lie off the country's coast. With Cuba's limited resources and technology, who will help the Caribbean nation exploit its offshore oil wealth? Will U.S. companies be allowed to be involved? What impact would production from the fields have on Cuba's economy?

A **Vicki Huddleston:** Citing rising oil prices, President Bush called for repealing the ban on drilling for oil along our continental shelf. Vice-President Cheney, in an effort to justify U.S. drilling in offshore waters, claimed that China was drilling for Cuban oil 60 miles from the Florida coast. Ironically, neither Bush nor Cheney have any intention of allowing American companies to exploit any of the 4.6 billion barrels of unproven oil reserves or the 9.8 trillion

cubic feet of natural gas off of Cuba's coast.

Yet, allowing U.S. petroleum companies to do so would go a long way toward resolving both their concerns. If we had access to Cuba's offshore oil, it would diversify our sources—Venezuela is now our fifth-largest supplier—and help dampen the upward price spiral at the pump.

If American companies with expertise in oil exploitation and protection of the environment were able to cooperate with the six oil companies that have contracts to search for Cuba's offshore resources, we would have considerably greater confidence that the latest and safest technology would reduce the environmental impact and diminish the possibility of a spill that might impact states along the Gulf of Mexico.

Critics will argue that allowing American companies to become involved in exploiting Cuba's oil is

SEC proposes new rules

The U.S. Securities and Exchange Commission (SEC) proposed updated rules on June 27, 2008 that would require companies to provide investors with more detailed information about their oil and gas reserves. Reserves are an oil company's most valuable asset and a critical indicator of its long-term financial prospects.

The proposal would replace the SEC's current reporting rules adopted more than 25 years ago. The proposed changes would allow companies to use new technologies to measure their proven oil and gas reserves and require companies to certify the independence of petroleum auditors that audit their assessments of reserves. The new rules, if passed, would allow resources such as oil sands (now considered to be mining reserves) to be classified as oil and gas reserves.

a concession to an autocratic government. But excluding American companies will not prevent others from doing so nor change the Cuban leadership. Rather, it will simply exclude us from a new source of oil and possibly heighten the risk to the environment. As the competition for oil grows, our isolationist policy may become more costly to us than to Cuba.

A Jonathan Benjamin-Alvarado: In spite of the U.S. economic embargo against Cuba, no less than eight countries, led by Venezuela, are actively working in cooperation with Cupet, Cuba's oil production enterprise, to develop various sectors of Cuban oil and gas resources. This includes joint venture agreements worth billions of dollars in foreign direct investment to develop increased refining capacity, petrochemical facilities, and deepwater oil exploration.

At this moment, there is little or no chance that any U.S. oil companies will be involved because of the embargo. This is not to say that there isn't significant interest, but barring a sudden reversal of the 50-year-old opposition to the Cuban regime, the prospects are dim that any U.S. companies can be involved.

With a new administration or a significant oil find, the U.S. position might change, but it will require revoking many of the elements of


the Helms-Burton Act of 1996. The estimated size of the offshore oil reserves are about half the size of the ANWR reserves in Alaska and would provide a significant boost to the Cuban economy in terms of investment in and technological transfer to the energy sector.

In no way would the impact negate the fact that Cuba must also develop alternative energy sources, as it will remain a net oil importer for some time as resources are developed. This is a fact that Cuban of-

any production.

There is only one known plan to drill: Repsol, leading a consortium that includes Norsk Hydro, drilled in 2004 and will drill again next year. That's a sign of confidence on the part of those companies, but even if they hit the jackpot they are years away from delivering oil to market.

Cuba's domestic production now covers about half of Cuba's energy needs. About 70,000 barrels per day of added output would make Cuba self-sufficient. Gulf oil has the clear potential to end Cuba's perennial foreign exchange crunch, and to make the Venezuela relationship less indispensable for Havana.

American companies are barred from participation in any part of Cuban energy development: onshore, offshore, ethanol, oil, gas, exploration, production, refining. 

Excluding American companies will not change the Cuban leadership, it will simply exclude us from new oil and heighten the risk to the environment.

officials are cognizant of and working diligently to address.

A Philip Peters: Vice-President Cheney erred when he said that Chinese companies are drilling for oil in Cuba's Gulf waters, but he sure got this right: "even the communists have figured out that a good answer to higher prices means more supply."

Cuba has sold rights to about one-third of its offshore blocs; foreign partners pay their own exploration costs and share in the profits of

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Costa Rica asks to join Petrocaribe

Costa Rica on July 16 formally requested membership in the Petrocaribe alliance, a Venezuela-led initiative that offers member countries oil on generous terms. Minister of the Presidency Rodrigo Arias, brother of President Oscar Arias, expressed confidence the government would receive a quick response to its request, although he did not predict when, according to a press release. He said membership in Petrocaribe would be of "enormous benefit" to Costa Rica because its generous financing terms would allow the Central American country to pay greater attention to "urgent issues in the social field." Petrocaribe, created in 2005 by Venezuelan President Hugo Chavez in a bid to boost his regional influence, sends 85,900 barrels per day in crude oil and derivatives to its members, which include Cuba, several Caribbean nations, and Honduras. Guatemala is expected to join the group later this month.

Petrocaribe allows its members, which are dependent on oil imports for their energy needs, to buy oil from Venezuela under generous financing terms. Chavez recently said Petrocaribe will allow members to defer payment on 60 per cent of their Venezuelan oil bill for up to 25 years, with interest of only one per cent, as long as oil prices stay above \$100 a barrel, and up to 70 per cent if oil hits \$200 a barrel, according to Reuters.

Four Questions To Ask About Latin America's National Oil Companies

J. Matteson Ellis

The majority of Latin America's oil and gas reserves are now controlled by national oil companies (NOCs).

Free market reforms, including energy sector privatizations, took place in many parts of the region in the 1990s, promoted by international financial institutions and the then emerging market-driven policy consensus. But these energy sector reforms failed to generate easily identifiable society-wide benefits. As a result, new political leaders seized the initiative to generate a wave of "hydrocarbon nationalism" over the last decade.

These nationalizations are not unique and reflect a global trend: today, 77 per cent of the world's oil reserves are controlled by NOCs that lack any private equity.

Some Latin American NOCs, like Brazil's Petrobras and Trinidad & Tobago's Petrotrin, are proving that they can find and produce oil and natural gas efficiently, serving as successful models for nationally-owned companies. Others, like Mexico's Pemex and Venezuela's PDVSA, are increasingly debilitated by inefficiencies flowing from excessive political interference. Moreover, nationalizations in countries like Bolivia have arguably impeded their ability to supply other countries, highlighting the interdependence of the region's economies. In most every case, NOCs are assuming ro-

bust and assertive roles in the region and are bolstered by record-high oil prices. Four key questions provide a framework for analyzing this trend.

Does political interference in the management of an NOC keep it from operating based on market forces?

Viewed purely from a business perspective, NOCs in the region range from wasteful to relatively efficient market actors. At one extreme, certain companies appear to act more like arms of the state rather than innovative oil and gas companies.

For example, part of PDVSA's official mandate now is to further the government's social priorities. The Venezuelan government has even created subsidiaries at PDVSA to distribute powdered milk, grow corn, and undertake other non-energy related activities. The company's social expenditures ballooned to \$13.3 billion in 2006 for health programs, foreign aid, and defense purchases. Political interference has led to arguably excessive employment—PDVSA employed 48,000 workers when President Hugo Chavez took office and aims to employ 113,000 by the end of 2009. The company sells to domestic consumers at greatly subsidized prices.

Similarly, Pemex has been widely criticized as a bloated company with 150,000 employees, acting as a "dis-

torted bureaucracy” and purveyor of employment largesse rather than a competitive market participant.

At the other end of the spectrum sits Petrobras, which is publicly traded and 56 per cent owned by the Brazilian government. Its operations are significantly isolated from political interference—its executive management is separate from Brazil’s Ministry of Energy. It engages in business-focused strategic planning that has already led to major field discoveries, turning Brazil’s Atlantic coast into the world’s largest research area for off-shore, deep water exploration. Brazil’s leadership has largely refrained from stacking Petrobras’ technical management positions with political allies.

Do the NOCs have access to technical expertise and experienced professionals?

Nationalizations in Latin America have often led to significant losses in technical expertise when international oil and gas companies leave. PDVSA lost 19,500 executives, geologists, and engineers as a result of President Chavez’s reforms, by some estimates. Conoco Philips and ExxonMobil left Venezuela after their shares in joint ventures with the government were decreased by mandate. Dozens of oil rigs have been abandoned in the country.

Some observers say that, though these losses might result in some inefficiencies, NOCs can still afford to operate given current high energy prices. Others argue that aspects of oil and gas extraction and production simply cannot be performed without a high level of technical expertise, especially given new and challenging landscapes like extra-heavy crude and deep water extrac-

tion. Aging machinery must be replaced to keep up with innovation. PDVSA will not meet its production goals with only 73 rigs in operation when more than twice that many are required. In fact, since President Chavez took office, oil production has fallen 28 per cent. Similarly, Pemex must invest in deep water exploration in the Gulf of Mexico to make up for losses at Mexico’s largest oil field, where production is now falling rapidly. The ability to retain and attract experienced professionals will be essential to the longer-term viability of these NOCs.

Loss of technical ability has had regional impacts as well. Some question whether Bolivia, which has the second largest natural gas reserves in the region, can maintain its contractual obligations to supply Brazil and Argentina after disrupting its investment flow by bringing the industry under tighter state control. It has cut back some supply to Argentina, which has led Argentina to restrict its own supplies to Chile, contributing to the current Chilean energy crisis. Similarly, continued decline in production in Venezuela and Mexico could have serious implications for the United States, since Venezuela is the U.S.’s third largest supplier of oil, and the U.S. gets 14 per cent of its imported oil from Mexico.

The continued engagement of international oil and gas companies can be crucial to filling these “expertise” gaps. Their participation will be linked, in part, to political stability as well as predictable regulatory and legal structures. Unfortunately, such stability and predictability continue to be called into question in many countries. At the same time, the most sophisticated international oil

and gas companies might seek to stay and manage such risks with the knowledge that government intervention has historically been cyclical. They might calculate that they can accommodate the swings while still remaining productive and profitable.

What are countries doing with the windfall rents from the NOCs?

In order to assess the long-term viability of the NOCs, it is helpful to consider how countries are putting to use the money they are making from NOCs.

Some have become largely dependent on these revenues. PDVSA’s revenues provide more than 50 per cent of the Venezuelan government’s budget, and Pemex’s revenues provide 40 per cent of Mexico’s. Though the record profits in Venezuela have allowed President Chavez to take steps toward his vision of a “21st century socialism,” they leave the country exposed to swings in the sector, potential inability to produce at current levels in the future, and eventual exhaustion of resources, which would all contribute to a major gap in funding government programs with ensuing social problems.

Conversely, Brazil’s problem might be rooted in an overabundance of production. Its major Atlantic coast finds are predicted to make it one of the ten largest oil producers in the world. The Brazilian government might use its resulting rents to re-invest in infrastructure or invest externally in the country’s future through sovereign wealth funds, but this will require political restraint. If the spending is not well controlled, it could lead to inflationary pressures, especially when com-

bined with the rapid influx of foreign capital—Brazil's \$30 billion in annual foreign direct investment is expected to double as these oil finds are developed.

Will expanding NOCs be prepared for the corporate governance and compliance requirements of global business today?

Petrobras by any standard is becoming a major global energy player. It just passed Microsoft to become the sixth largest company in the world by market value, is the most profitable company in Latin America, and is expanding internationally. Colombia's state-owned oil company, Ecopetrol, also has publicly traded shares and seeks investments internationally. But, to be successful, these types of companies will need to embrace the corporate governance structures and internal compliance measures that are becoming the norm in international business. As businesses operating internationally, they will be subject to laws and standards relating to anti-corruption compliance, accounting and internal controls, competition, environmental protection, and corporate social responsibility. NOCs will protect themselves from risk by adopting certain corporate practices. They might also be required to do so by the companies with which they partner that are also subject to these laws. The ability of NOCs to adopt these measures will facilitate their future successes. 🌐

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Will Argentina Make it Through the Southern Hemisphere Winter?

Q Argentina last week temporarily halted gas exports to Chile and has reportedly ordered leading energy distributors to restrict natural gas supplies to industrial users and gas stations to ensure residential supplies amid near-freezing temperatures in Buenos Aires. Will Argentina make it through the Southern Hemisphere winter with gas supplies as they are? Will it have enough gas for Chile?

A Maria Velez de Berliner: Argentina is caught amid energy dependency on Bolivia and Brazil; real inflation of 22 per cent; a nationwide strike by farmers; workers' demands for higher wages and pensions; and foreign debt equal to 56 per cent of GDP.

Imports from Bolivia of 1.9 million cubic meters per day (cmd), rather than the 4.6 million cmd contracted for May, will keep the Fernandez government going, for now, on subsidies, price controls, power shortages, usage restrictions, and diversion of energy from the industrial to the residential sector in Buenos Aires and the Greater Buenos Aires area.

The high-cost import of Liquefied Natural Gas (LNG) by docking a Repsol/YPF LNG-pre-processing ship at Bahia Blanca will not compensate for the Bolivian decline. Nor will electricity imported from Brazil and Uruguay, or imports of propane and fuel oil. Venezuela's PDVSA is

reselling fuel to Argentina at world market prices. Argentina's recurrent winter crises result from a lack of oil and gas resources, coupled with five years of Kirchnerian mismanagement of the energy sector and lack of planning for energy security.

Chile is catching the pneumonia caused by the energy cold of Argentina. Chile is at the end of the energy chain that runs from Bolivia through Brazil and Argentina. Energy shortages and declining exports, due to the appreciation of the peso against the dollar will result in estimated GDP growth of four per cent in 2008. Workers' demonstrations against high energy costs, strikes for higher wages, and the Mapuches' retaliation against Foreign Direct Investment (FDI) in southern Chile are also hurting the Bachelet government. Unlike Argentina, Chile—lacking its own energy resources—is planning for future energy security. It will import gas directly from Bolivia, Peru, and Indonesia. However, these imports and the LNG plant being built with France's Suez will not prevent the consequent industrial decline and personal discomfort this winter.

Argentina and Chile are but two reasons why the energy integration of South America, with its vast but unevenly distributed energy resources, is imperative for the economic growth and political stability of the region. Not [based] on Chavez's Bolivarian model, but on free, intraregional energy markets.

A José Martínez de Hoz, Jr.: The low temperatures of the last week of May evidenced once more the worsening of Argentina's gas and electricity shortages caused by the imposition of price controls on domestic energy prices, and exorbitant export taxes on energy exports.

This time, the shortages were aggravated by a 30-day union strike in the province of Santa Cruz. Natural gas exports to Chile and natural gas supplies to local industries suffered almost entirely the burden of the approximately 20 million cubic meters per day (cmd) natural gas shortage. Natural gas exports to Chile were reduced to zero, disregarding the 0.5 million cmd floor supposedly guaranteed to the Chilean government in order to supply Chilean residential customers.

The domestic natural gas shortages are being tackled through the import of expensive natural gas via pipelines from Bolivia (at prices that are 3.5 times higher than the price paid by domestic industrial users and 14 times higher than the price paid by distributors for serving residential consumers), as well as the import of LNG through the regasification ship recently docked at the Bahia Blanca port (the cost of the LNG is twice as expensive as the Bolivian gas).

These imports, and other imports of fuel oil, gasoil, and electricity will probably reverse Argentina's current status of energy exporter to that of a net importer by 2009. This is an unfortunate scenario considering current international energy prices. Moreover, the 1,600 megawatts expected to be contributed by the two government-sponsored combined cycle power plants scheduled to be fully operational in 2009 are being threatened by domestic natural gas shortages, political risk in Bolivia, and the delay in the construction of the long-projected northeastern pipeline required to transport natural gas from Bolivia. These two power plants are currently operating below their maximum efficiency levels on the basis of expensive liquid fuels that are subsidized by the government. The government's subsidies to cover energy imports are expected to exceed \$5 billion this year.

A Juliette Kerr: The triggers for the temporary suspension of gas exports to Chile may have been a strike in Santa Cruz and the arrival of a cold front, but the problems facing Argentina's gas sector run much deeper, with insufficient investment and regulatory uncertainty blamed for the country's increasing dependence on imports.

The Argentine government has been trying to secure additional energy supplies from other countries in an attempt to avert a repetition of last winter's gas shortages. Venezuela has agreed to supply fuel oil, Brazil is exporting power, and LNG supplies have been contracted for the first time.

However, with Bolivia struggling to increase gas exports, the supply outlook remains highly uncertain, and the severity of any supply disruptions will depend largely on how cold the winter is.

As for Chile, Argentina has promised to guarantee supplies of gas to the residential and commercial sectors. However, it is very likely that other sectors will face tougher supply restrictions in the winter, as they did last year. This could cause added problems for Chile's power sector, which has been trying to conserve hydroelectric supplies and reduce energy consumption following a drought.

A Luciano Gremone: Standard & Poor's expects the natural gas market in Argentina to continue to be under pressure, mainly this winter, with increasing supply shortages (more days of gas restrictions) likely in the industrial sector, power plants, and to a lesser extent natural com-

Shell investing \$300 million in Peru

Royal Dutch Shell may invest up to \$300 million in oil and natural gas exploration in northern Peru, the *Associated Press* reported. Adolfo Heeren, chief of Shell's Peru operations, said at a news conference July 17 that the company will finalize a partnership with Houston-based BPZ Energy in the next few months to explore for gas and oil near Peru's border with Ecuador. BPZ may invest a similar amount in exploration and up to \$150 million in an electric plant in the region, said company President Manuel Pablo Zuniga. BPZ will fully control the electricity plant, but Shell would have the option of buying a 50 per cent stake. BPZ owns exclusive license contracts for oil and gas exploration and production covering approximately 2.4 million acres in four properties in northwest Peru. It also owns a minority working interest in a property in southwest Ecuador.

pressed gas. However, the magnitude of shortages will mainly depend on weather conditions, considering that residential consumption has priority.

With relatively stable production (at around 140 million cubic meters daily), natural gas demand grew more than 38 per cent between 2003 and 2007, mainly driven by high industrial demand, a consequence of economic growth, and also by higher consumption at power plants, a consequence of the steep hike in electricity demand.

Residential demand also grew, but is much more dependent on weather conditions due to heating purposes. So far, the mismatch between natu-

ral gas supply and demand growth has been covered in part by lower exports, higher imports from Bolivia, and the use of liquid fuels. In this context, Bolivia appears to enjoy advantages as a complementary long-term supplier.

However, significant investments are required for transportation and for the exploitation of reserves in Bolivia, whose current production would not be enough to supply a new gas pipeline project that Argentina and Bolivia plan to build. As a result, a significantly larger Bolivian participation in Argentine natural gas offerings is highly unlikely to have an impact prior to 2010. 🌐

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Are Fuel Subsidies Helping Latin America?

Jeremy Martin

Striking truckers, angry bus drivers and protesting construction workers signal the social unrest in Latin America sparked by rising fuel prices. In response, the region's governments are footing a hefty bill to assure cheap fuel supplies for their citizens.

The numbers are staggering. According to analysis by *The Financial Times*, Mexico will spend almost \$20 billion this year. Venezuela and Argentina will each spend \$11 billion. Colombia will spend \$3 billion. And Chile, which had estimated \$311 million for the year, recently approved an emergency increase of \$1 billion for its fuel stabilization fund.

The politically sensitive topic of fuel subsidies raises this critical question: can governments in Latin America allow fuel prices to rise and

then manage the discontent and the threat of growing inflation against the backdrop of a shaky world economy? Recent actions by leaders of several Latin American countries suggest that the answer is a resounding no.

From a purely economic perspective, subsidies are a regressive approach to the social and economic inequalities plaguing countries in the region. Countless studies have analyzed the winners and losers when a government subsidizes fuel prices. They have consistently found that the big winners are the affluent —vehicle owners and energy-intensive consumers— instead of the intended target group, the poor. Furthermore, fuel subsidies distort the already tenuous balance between global oil supply and de-

mand and thus do little to address the core issue of price. Also left out of this narrative are the cross-border smuggling issues and losses that are tied directly to the price distortions dotting the region.

What international economic studies and supply-versus-demand concepts do not adequately capture is the socio-political element. In a region where social unrest threatens fragile democracies, any measure that dampens inflation and provides economic relief to a large and often impoverished population is valuable from a political standpoint.

Mexican President Felipe Calderón, whose conservative National Action Party, faces a challenge in the 2009 mid-term elections, vowed last month that his government would not cut fuel subsidies, even though

the \$20 billion spent this year could have underwritten Mexico's entire 2008 federal education budget.

"We are not going to do it because we want to protect the poorest families," he said.

As a result, Mexico's state oil company, Pemex, is importing ever-increasing amounts of fuel. Fuel imports cost Pemex \$15.8 billion last year compared to \$2.4 billion in 2003. But even those costly imports did not satisfy demand during a June fuel crisis in Baja California. A shortage of diesel fuel virtually shut down public transit in the state, with Mexican truckers lined up for non-existent refills as anger grew over U.S. motorists crossing the border to buy diesel at roughly half the pump price in San Diego.

The border fuel crisis underscores fundamental problems caused by subsidies combined with inadequate supplies and Mexico's inability to find, produce and refine oil.


Mexico is not alone. Venezuela, home to the world's cheapest gasoline, quietly abandoned an effort last year to raise gasoline prices. Venezuela's national oil company, PDVSA, will spend \$11 billion in fuel subsidies this year, almost twice the oil company's 2007 net income of \$6.27 billion. With regional elections this November, it is highly unlikely that an already embattled President Hugo Chavez will even contemplate mentioning a hike in fuel prices.

Even Chile, whose economic policies were dubbed "the miracle of Chile" by famed free marketer

Milton Friedman, plans to increase its fuel subsidy fund by \$1 billion to quiet protests by slashing fuel prices – and dampening inflation.

oil consumer and economic force, these changes merit attention from governments in Latin America. Most countries have only recently

revised their energy and fuel subsidy policies, but if they prove successful, leaders from across Latin America may wish to take a deeper look.

As oil production declines in Mexico and Venezuela, home to two of the largest national oil companies in the region, the cost of fuel subsidies will only become more onerous for the economic and energy balance and all of the countries in the Western Hemisphere will pay the price. 

As oil production declines in Mexico and Venezuela, the cost of fuel subsidies will become more onerous for the economic and energy balance and all of the countries in the Western Hemisphere will pay the price.

Yet, there are alternatives to fuel subsidies. Asia, with its millions of poor, has done a remarkable about-face on the issue. Countries from China to Indonesia to Malaysia have undergone structural economic changes in recent months to address the fiscal imbalances created by their fuel subsidy programs. With that region's growth as a global

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Iberdrola Latin American production up 32 per cent

Spanish power company Iberdrola announced July 18 that its Latin America electricity production rose 32 per cent in the first half of 2008 over the same period last year, to 18.96 billion kilowatt hours (kWh). Latin America is the company's largest market outside of Spain. Overall, the company increased its electricity production by 14.2 per cent over the same period a year ago, rising to 69.15 billion kWh. International generation surpassed 51 per cent of the company's total production for the first time in its history.

What Does a World Bank Report Mean for Biofuels in the Region?

Q According to a recent World Bank report, increased biofuels production has caused a 75 per cent increase in global food prices, well above other, previous estimates. Will the report's findings force countries to cut back on biofuels production? What does it mean for biofuels production in Latin America, particularly Brazil?

A Cláudio Frischtak: The conflict over biofuels is unlikely to subside any time soon, unless food prices were to fall as dramatically as they have increased over the last two years.

What has driven food prices? While supply-demand imbalance may have contributed, driven in part by climactic factors, there are other relevant factors, including the depreciation of the U.S. dollar, which in itself has driven up oil prices (and thereby food prices).

Up to now, the role of biofuels was not obvious: it seemed material—after all, ethanol consumes around three per cent of world grain, mostly corn—but not overwhelming, as the leaked World Bank study seems to imply.

If the results of the study are corroborated, the implications may be momentous: there would be an enormous pressure on the new U.S. administration to shift its policies away from subsidizing corn and

other grain-based biofuels, while possibly opening up to ethanol imports; at the same time, attaining the European Union targets would most likely equally depend on the import of biofuels, again mostly ethanol. In both instances, that would mean a major boost to Brazil and Caribbean nations as exporters of sugar cane-based ethanol insofar as there appears to be no clear link between

was very carefully done. I have not seen the report. I've been anxious to look at it. It is the highest estimate of the impact of biofuels on food prices, and it is 25 times larger than the estimate produced by U.S. Department of Agriculture for the FAO meeting several weeks ago, and it raises the interesting question how such a huge discrepancy in the supposed impact of biofuels on food prices could result from careful analysis.

My own judgement is to go with something like the International Food Policy Research Institute estimate of about 30 per cent, but I would be inclined to say it's likely to be higher rather than lower than that. And no one, I think, is now in a position to argue that biofuels are not having a clear impact on increasing food prices.

With respect to Latin America and Brazil, the Brazilian industry is entirely based on sugar, which although it is consumed is not really a food

crop; it's more a food additive. The Brazilian ethanol program in my judgement has probably had minimal impact on food prices around the world.

The problem is not the sugar cane producer in Sao Paulo, but the protectionist policies of the U.S., Europe, and other developed countries.

A C. Ford Runge: The report, which was actually leaked and has apparently been finished since April, was prepared for the Bank by a very reputable agricultural economist named Don Mitchell and I'm sure

A Roger Tissot: In reality, there are two biofuel industries: one in the north—the United States and Europe—competes with food produc-

tion and whose viability is only due to government subsidies; the other in the south, notably in Brazil, where despite some earlier subsidies, a combination of natural advantages, technological development, and private-sector investments has resulted in a highly competitive industry.

However, the discussion masks what I would define as a comedy of errors in agriculture policies in the last 20 years. In fact, misguided by international advisors from the same institutions that today cry foul, the 'south' adopted a series of economic policies that resulted in a constant decline in the productivity of its agriculture sector.

Unable to offer soft credit to small farmers, and finding it too expensive to compete with imported grains from rich countries that benefited from some strong subsidies, developing countries became more and more dependent on imported food. Moreover, the push for agro-exports

resulted in the curse of success, as prices of products such as coffee collapsed when too many countries started to compete for the same few global commodities.

Now that the terms of trade are improving, as a result of increased demand, countries worry about inflation, and they are adopting what some experts have called a 'reverted mercantilist' strategy: taxing or imposing hefty quotas on exports.

The real solution is for the 'north' to stop the subsidies for its powerful farming lobby groups, and allow the south to increase its productivity and thus the supply of food. There is still plenty of unused land in the developing world which should not threaten the environment if transformed into farm land. But in order to do that, farmers need to see market signals offering some level of confidence that their investments will pay off. One clear signal would be to allow them to compete under

equal conditions in the global market. If that's the case, then biofuels would have a place, among many other solutions, in a post-petroleum economy, without threatening food inflation or global hunger.

In short, the problem is not the sugar cane producer in Sao Paulo, but the protectionist policies of the US, Europe, and other developed countries. 🌍

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Brazil's Petrobras announces offshore oil discovery

Brazilian national oil company Petrobras announced July 14 that it has made a discovery of "good quality" oil in the offshore Espirito Santo basin. In a press release, Petrobras said the find, at a depth of 1,374 meters, has potential of 150 million barrels of recoverable oil and is near existing infrastructure. In recent months, Petrobras has announced large offshore finds that could turn Brazil into a major oil exporter.

Brazil to slash wait time for environmental licenses

Brazilian Environment Minister Carlos Minc said July 17 that the ministry was slashing the time required to secure environmental licenses for new large-scale projects, Reuters reported. Minc, who assumed the post in May after Marina Silva resigned amid what she called a lack of political support for environmental protections, said the licensing process would be reduced to 13 months from the current 21 to 37 months. The licensing period has been seen as a deterrent to investment in large-scale projects in Brazil, such as hydroelectric plants, especially in the Amazon region. Rumors had been circulating that the strike could be extended. Petrocaribe will allow members to defer payment on 60 per cent of their Venezuelan oil bill for up to 25 years, with interest of only one per cent, as long as oil prices stay above \$100 a barrel, and up to 70 per cent if oil hits \$200 a barrel, according to Reuters.

U.S. Policy and Energy Security in the Americas

Johanna Mendelson Forman and Susana Moreira

It is ironic that the U.S. has paid so little attention to Latin America, which is particularly well-endowed with natural resources: the world's third-largest supplies of proven oil reserves, significant natural gas discoveries, abundant hydro-electric power potential, and substantial capacity for biomass energy (40 per cent of the world's biodiversity is in this hemisphere).

According to the Energy Information Administration, the U.S. imported 28.3 per cent of its oil from Latin America and the Caribbean in 2007, far surpassing the 16.6 per cent imported from the Middle East.

At the June 2007 General Assembly of the Organization of American States, Secretary of State Condoleezza Rice explained the U.S. approach to energy security in the Americas.

"We seek to promote the democratization of energy in the Americas, increasing the number of energy suppliers, expanding the market and reducing supply disruption," she said. "Our goal should be nothing less than to usher in a new era of inter-American security in energy."

This statement, along with the administration's late focus on renewable energy via the U.S.-Brazil

biofuel agreement of March 2007, are among the few indicators we have to go on when evaluating what a Western Hemisphere energy security strategy might entail.

How does the U.S. plan to "democratize" energy? How much can energy exports be expected to significantly expand when regional

The U.S. imported 28.3 per cent of its oil from Latin America and the Caribbean in 2007, far surpassing the 16.6 per cent imported from the Middle East.

key suppliers are themselves having problems meeting their own energy commitments? And with most resources held by national oil companies, how much can the U.S. depend on their capacity to supply?

With U.S. energy security anchored in the hemisphere, and its own addiction to energy growing, the Americas will play an important part in U.S. policy in years to come.

A Complex Relationship

There is a general consensus among leading energy information sources that energy consumption will surge as much as 30 per cent by 2020. A growing world population and strong economic growth in developing countries will propel energy consumption, and the twin forces of urbanization and industrialization will accelerate this trend.

Latin America, which has experienced a healthy increase in energy consumption already, will face a doubling of demand for all forms of energy in this time period.

The energy security relationship between Latin America and the United States is therefore complex. The U.S. has its national needs for energy resources, yet the Latin America and Caribbean region has its own desire to realize long pent-up economic potential. But as they compete

for ever-scarcer natural resources, both the U.S. and Latin America are highly dependent on each other. The U.S. needs the fossil fuels, but Latin America needs U.S. trade, investment, and technology.

The energy dynamic in the region is changing. Although U.S. dependency on Venezuelan oil is expected to continue in the near-term, the production limitations at Venezu-

elan state oil company PDVSA will force the U.S. to seek more diversified sources of fuel.

Brazil is poised to increase its importance as a supplier of fossil fuels to the U.S., thanks to recent pre-salt discoveries of oil and natural gas, which will make Brazil the country with the eighth-largest oil reserves in the world. The benefits of these discoveries will not be realized for at least a decade. As Brazil assesses its place in the world of major oil players, there are signs of energy nationalism that may conflict with U.S. interests, which have traditionally been led by the private sector. This situation makes it even more important for the U.S. to continue to develop a positive relationship with Brazil.

The next U.S. administration faces a challenge of defining its energy priorities vis-à-vis Latin America. Because there is no single specific solution to the diversity of problems that exist, from poor infrastructure to a lack of integrated energy systems to poor legal-regulatory systems, the U.S. will need a multi-dimensional approach to its energy relationships in the Americas.

Such a policy framework will require sensitivity to issues such as climate change and environmental needs, energy inequality, and the impact that high costs of energy

have on socio-economic development.

The Path Forward

In the future, the U.S. can build on relationships that have started to grow around different types of energy solutions. Energy from biomass has become a central focus of the U.S.-Latin American energy security relationship. It has emerged in two ways.

First, it has been the source of an important bilateral diplomatic effort between the U.S. and Brazil to expand to other nations of Central America and the Caribbean the benefits of the Brazil and U.S. experience in the production of ethanol.


Second, the debate over the use of different feedstock for the production of ethanol for transport has been subsumed by a larger global conversation about the use of food sources for fuel. The debate has also assumed a political dimension in the hemisphere as both Venezuelan President Hugo Chavez and Fidel Castro in Cuba have condemned the use of biofuels made from food as a driver of increased poverty and hunger in Latin America.

Energy diplomacy is a tricky subject. Even if Chavez's regional petro-diplomacy is a source of friction with the U.S., it is also pushing the U.S. to find closer alliances with

countries like Brazil and Colombia as well as in the Caribbean.

Brazil is considering new agreements with Cuban President Raúl Castro around cooperation to develop renewable energy sources, thus paving the way for Cuba's potential as an ethanol production and refining center just 90 miles from the U.S. market.

Simultaneously, Venezuela continues its petro-diplomacy in Cuba, which has helped sustain the Castro government amid record high energy prices. It seems clear that Washington will need to pay closer attention, from an energy security perspective, to Cuba in the future.

It is likely that energy security in the Americas will increasingly dominate the geopolitical conversation in the years ahead. But it will remain only one element in a complex set of shared interests that will require cooperation and dialogue. 

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Biofuel and South America

Brazil is emerging as a powerful international player in the refining and transporting of ethanol, fuel derived from starches and sugars found in a variety of organic sources. Petrobras, Brazil's national oil company, signed a cooperation agreement on with American oil company ConocoPhillips on July 3 to facilitate knowledge transfer in the area of biofuel and petroleum. ConocoPhillips is particularly interested in Petrobras' technology for pipelines that transport both ethanol and oil. Brazil is not the only South American country producing biofuel. Peruvian company PureBiofuels Corporation is investing in building Peru's infrastructure for alternative fuel development.

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The Inter-American Dialogue is the leading U.S. center for policy analysis, exchange, and communication on issues in Western Hemisphere affairs.

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