

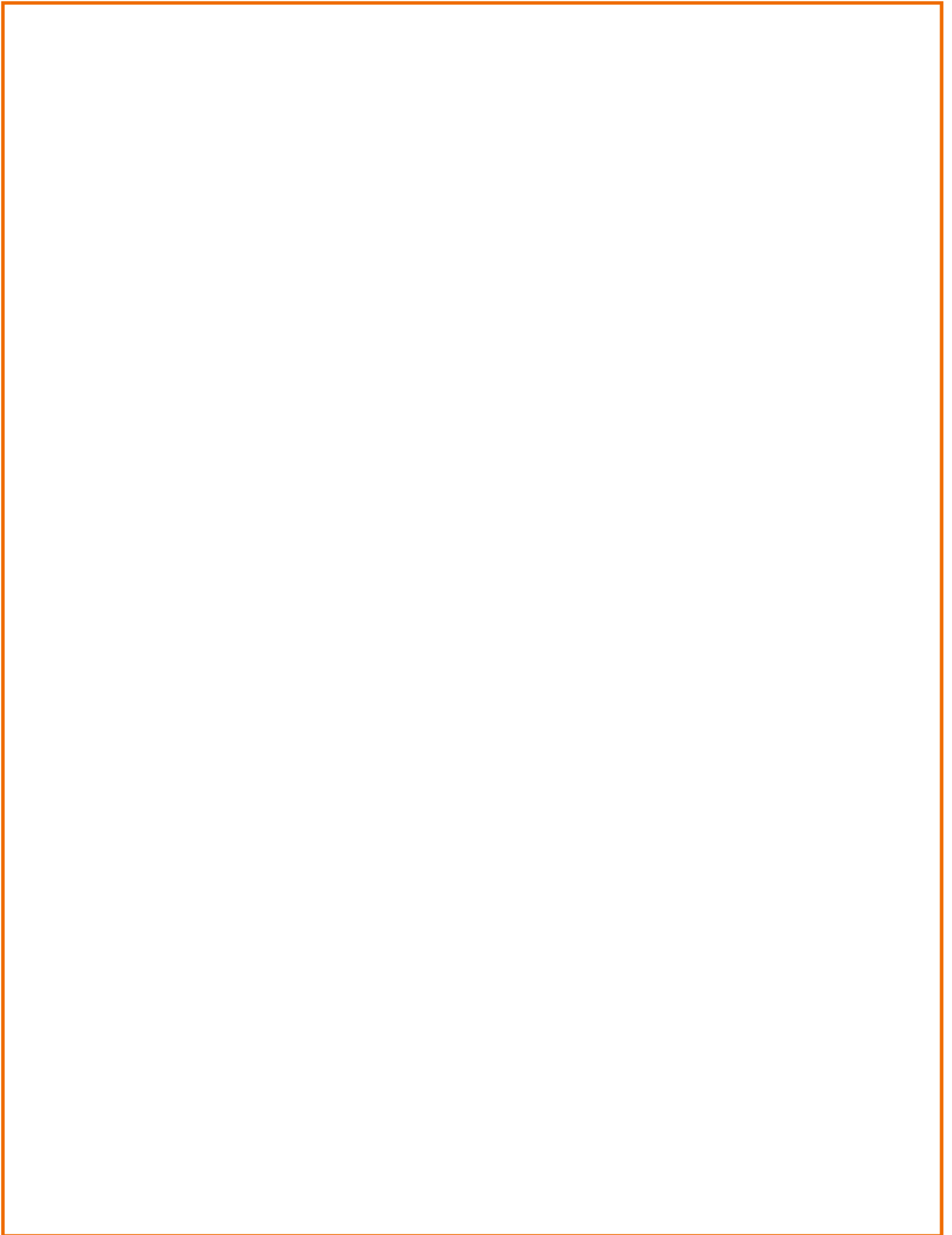


# Energy in the Americas

## Building a Lasting Partnership for Security and Prosperity



A Report of the Council of the Americas' Energy Action Group



# **Energy in the Americas Building a Lasting Partnership for Security and Prosperity**

Secure access to global energy resources on market terms is a strategic imperative for the United States. The devastation wrought by Hurricanes Katrina and Rita is a tangible reminder of the potential impact on the health of the US economy and the well-being of US citizens when energy supplies are interrupted. Few issues have as significant a strategic national component. At the same time, Canada, Latin America, and the Caribbean have been blessed with abundant energy resources, which, if developed efficiently and effectively, can be a leading engine of regional development and an important contributor to global competitiveness.

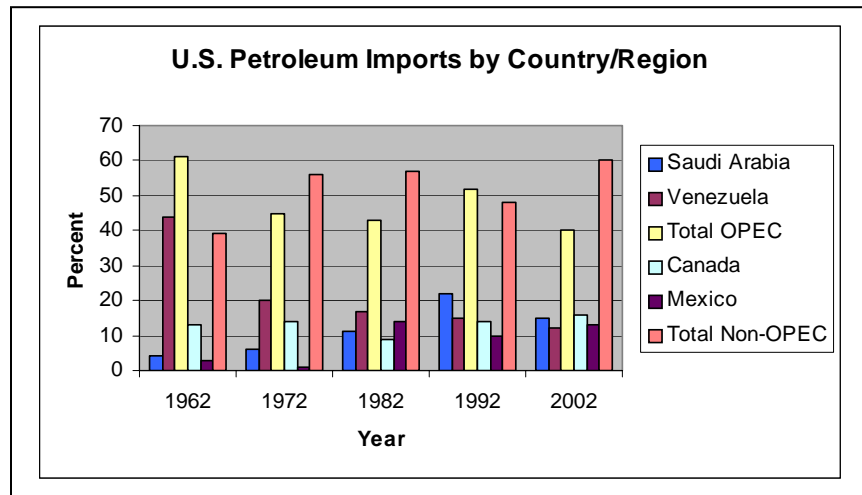
If geography is destiny, the Americas are ripe for development of an energy partnership benefiting both suppliers and consumers while linking our economies as envisioned at the Miami, Santiago, Quebec City, and Monterrey Summits of the Americas.

Indeed, as the hemisphere convenes for the next Summit, in Mar del Plata, Argentina, in November 2005, the idea of a united hemisphere is largely a vision that remains unfulfilled, even utopian, and the Free Trade Area of the Americas announced with fanfare 10 years ago in Miami will not occur in 2005 as originally agreed. As disappointing as this may be—and it is disappointing to those of us who have worked diligently for hemispheric integration—the fact remains that a regional free trade area remains a goal worthy of consideration and active pursuit, particularly as Asia, Eastern Europe, and others move smartly ahead in the global economy.

Without a greater sense of what is at stake and a strategy to position the Americas for success in the global economy, however, the Western Hemisphere will fall increasingly behind. A seminal report prepared by the Council of the Americas in advance of the 2004 Defense Ministerial of the Americas in Quito clearly showed that, from personal security to corruption and rule of law to education and other critical indices, Latin America and the Caribbean writ large are less attractive places to do business than other areas of the world, although a handful of countries, like Chile, are positive exceptions.

Regrettably, those broad trends have continued. If the region is to achieve its maximum potential by attracting the domestic and direct foreign investment that will otherwise seek safer harbors, there must be a new way of thinking, and creative leadership, that literally begins to transform Latin America and the Caribbean into a globally competitive commercial region built on true political and economic partnership. This is a long-term project, to be sure, but it must begin now.

Enter energy as a significant catalyst for broader hemispheric partnership and a means to increase broad-based development prospects.<sup>1</sup>



In a global economy, competitiveness is a key, and energy is a critical input in the productive process. The cost of energy and reliability of supply are paramount in every nation. It bears noting, in fact, that the day the Council of the Americas launched our Energy Action Group activities in September 2004, oil had just breached the \$50/bbl threshold, a historic nominal high. Yet even as this report is issued, oil has gone over \$70/bbl, and is now hovering in the upper \$60's/bbl. Numerous analysts predict a drag on US economic growth as higher energy costs ripple throughout the broader economy. Indeed, the energy bill that passed the US Congress in July 2005 seeks to increase domestic energy supplies, in part to keep costs relatively stable. Whether or not it will have the desired impact absent greater attention to conservation measures will be seen, but the point is that, even before Katrina, energy security has been much on the minds of national leaders. That is now not likely to change.

As the United States seeks to increase supply and moderate demand, energy exploration and production can—and should—form a backbone of regional economic development, particularly given a lack of viable alternatives among various energy producing nations in the hemisphere. As well, Brazil's global leadership in the production of non-traditional energy including sugar-based ethanol must be considered. Nonetheless, historical realities, political maneuvering, grandstanding, uncertain conflict resolution, and the subversion of efficient energy production and usage to overtly political ends in numerous countries has limited the prospects for hemispheric energy development and integration while raising energy costs along the entire spectrum of the production chain. Regional competitiveness and long term prospects have suffered accordingly.

Of course, significant changes in global energy markets are also apparent. On the demand side, the rise of China, India, and other emerging markets has permanently altered the energy landscape, as those economies grow and mature and their leaders

<sup>1</sup> Annual Energy Outlook 2005. Energy Information Administration.

increasingly seek to guarantee their own energy supplies, either by purchasing assets outright (with Bank of China lending at 2 percent) or by entering into long-term energy contracts. We do not yet have a sense of the true implications for these dramatic changes. Suffice it to say, however, that there is no going back. Energy markets, and the global economy, are in flux, and questions naturally abound with regard to energy in the Americas. Greater systematic attention to energy issues and a long-term strategy for the region are clearly required.

With these issues in mind, the Council of the Americas established an Energy Action Group to facilitate the interaction between private and public sector representatives in the establishment of a strategic approach for US engagement in hemispheric energy affairs. In conjunction with the US Department of Energy and the Inter-American Development Bank, as well as with the support of numerous Council member companies, the Council has gathered a select number of private and public sector experts to shed light on hemispheric energy issues and to suggest a path forward in the development of a hemispheric energy strategy.

In five meetings in Washington from September 2004 through July 2005, with additional meetings in Cartagena and Rio de Janeiro, the Council has devoted significant attention to building a body of evidence for hemispheric energy cooperation while recommending a mutually-rewarding, forward looking approach. The report that follows represents the fruit of these discussions.

It is our hope that, in the run-up to the Mar del Plata Summit, hemispheric leaders will return to the idea that energy partnership is an obvious area for exploration and development, working diligently to establish a framework for energy cooperation in a sustained and thoughtful manner. For the United States, the stakes are high. When it comes to US energy security, and thus national security, the Western Hemisphere must play a significant role. Policymakers, take note. The Americas are critical to our well-being; energy in the Americas must be a national strategic priority for the United States.

On a personal note, I would be remiss if I did not thank the numerous people who have participated actively in our deliberations, either as speakers, meeting participants, or in the many discussions we have had concerning these issues. I would like especially to thank those companies who have generously underwritten our Energy Action Group activities, encouraging our exploration of issues and themes that otherwise receive only limited attention within the broader policy community. Though these are the distilled ideas and best thinking of a number of Council members, nonetheless this report is the product of the Council itself and no part of this report can nor should be ascribed to any individual or specific company. I would also like to thank Council President and CEO Susan Segal for her support, as well as Luis Pinto who coordinates our Energy Action Group efforts and who was also the primary author of this report.

*Eric Farnsworth  
Vice President, Washington  
October 2005*

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# Executive Summary and Synopsis of Recommendations

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Energy is a strategic matter for the United States, pure and simple, and a priority area for regional development. The entire Western Hemisphere stands to gain if energy partnership is pursued, assuming the implementation of terms and conditions consistent with a market-based, public-private approach to energy sector development. Actions must begin now, however, given the long-term changes to energy markets brought on by the economic maturation of China, India, and other developing nations, as well as short term shocks including recent hurricanes and refining bottlenecks.

Beyond politics, the key questions for the development of energy in the Americas center on the ability to raise and utilize effectively the massive amounts of increased investment required to develop the resources that already exist. Fundamentally, unless investment climates are improved in the energy sector and elsewhere, investors will continue to look to other markets as opportunities with greater interest than the Americas. Without necessary investment, reserves will be depleted, energy imports will increase, and terms of trade will deteriorate. That affects all consumers and hurts competitiveness. For a region struggling to find its way in the global economy, such a result would be a serious setback.

Some countries, among them Brazil, Canada, Chile, Colombia, Peru, and Trinidad and Tobago, have instituted aggressive measures to develop their respective resources in productive ways. Their leaders are thinking creatively, implementing forward-looking policies to draw the investment needed for energy sector development. Other countries in the region, regrettably, are going in the opposite direction, in some cases letting events take their course and hoping for the best, in others actively taking steps that are driving investors away. There is still time to reverse course, as necessary, even though much of the world is moving ahead, threatening to leave Latin America and the Caribbean behind.

With these issues in mind, the Council of the Americas makes the following recommendations for the development of lasting energy partnership in the Americas:

- Energy is a strategic matter for the United States and support for increasing partnership in hemispheric energy must be a priority. For energy producing nations of Latin America and the Caribbean, energy offers a significant potential engine of growth and development. Such long-term, mutual interests should form the basis of regional partnership.
- Increasing energy production in Latin America and the Caribbean requires massive new investment, drawing from a limited pool of global capital. As a result, increased attention must be paid to overall investment climate matters generally, and energy investment specifically. Conditions must be proactively created to draw the amounts of investment required. Among them: improved

education rates, regulatory certainty, non-discriminatory and stable tax regimes, effective personal security, anti-corruption, and effective dispute resolution.

- Long-term investors in all sectors are reassured when laws are respected and regulations are clear and fair. In a competitive global environment, nations that seek healthy investment inflows in their respective energy sectors must abide by contractual obligations as mutually agreed. When disputes arise, they must also be willing to implement the rulings of international arbiters in good faith.
- Energy in the Americas is traditionally viewed as part of the national patrimony, but it is also a commodity. Governments must therefore do a better job of communicating the long-term benefits of energy projects to the broad spectrum of their citizens, while ensuring that such benefits are widely and visibly distributed. Beyond such benefits, reducing the cost of energy generally will also improve consumer well-being and improve competitiveness across the entire production chain. Both countries and companies should ensure a robust consultative process with environmental and indigenous communities during the development of new projects, and be willing to listen to legitimate concerns.
- In the North American context, trilateral energy coordination focused on regulatory and harmonization standards, improved infrastructure, and increased Mexican energy production is fundamental to strengthen regional security and competitiveness.
- Greater integration requires the standardization of regional and sub-regional laws, taxes, royalties, and transmission rates. Nations should consider linking their energy sectors more closely together based on a high standards, best practices approach in order to enhance market efficiencies and economic development.
- Energy diversification would lessen the impact of supply shocks, while increasingly utilizing alternative resources of significance in the Americas. Creative means should be found in trade policy and elsewhere whereby the use of such alternative fuels is encouraged or, at a minimum, not discouraged, understanding that alternative fuels will not be a large percentage of the regional energy profile for many years. More generally, the sustained application of new technologies can deliver solutions to supply, efficiency, and environmental challenges that currently vex regional markets.
- Finally, multilateral organizations should continue to prioritize support for infrastructure development projects in the Americas, particularly those focused on energy. Enhanced project support and guarantees would encourage the rapid development of the energy sector in the Americas. Regional partnership should be encouraged.



# Introduction

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Global energy markets are unsettled. The mere mention of China, India, and other emerging economies on the demand side, or the Middle East, Hurricanes Katrina and Rita, oil sands and shale, tar bed methane, or alternative fuels on the supply side, highlights the fact that global energy markets are in flux. At the same time, energy is both a strategic and a political matter for the United States, as it is most everywhere else, and virtually nothing attracts the attention of political leaders, strategic planners, or economic forecasters more quickly than uncertainty in global energy markets or significant changes in energy costs.

Outside the United States, the nations of the Western Hemisphere are no different. Certain nations, particularly those that produce only limited energy on their own, remain vulnerable to sudden energy shocks or even measured but consistent energy cost increases. Unsettled markets have significant implications for national budgets and economic well-being, productivity, competitiveness, income levels, and job creation. Indeed, in Honduras, one gallon of gasoline now costs more than a day's wages for many Hondurans. Such realities contribute to perceptions of whether democratic governments can deliver a better way of life for their citizens. Over time, broad economic discontent can lead to demands for political changes that may be anathema to the consolidation of democracy, putting pressure on democratically-elected leaders to find alternative solutions. Given the strategic US interest in promoting democracy, this becomes a priority matter for high-level consideration among US foreign policy leaders.

At the same time, there is a huge upside to higher energy prices for those nations in the Americas that produce energy. It would be unwise not to take full advantage. In the absence of viable development alternatives, those nations blessed with energy resources would do well to work actively and aggressively to bring such resources to market as a significant component of their respective national development strategies. To do so, however, greater attention must be paid to creating the appropriate political, economic, and financial conditions that will draw the foreign investment and technical expertise needed to develop hemispheric energy resources. With these points in mind, this report has three primary goals:

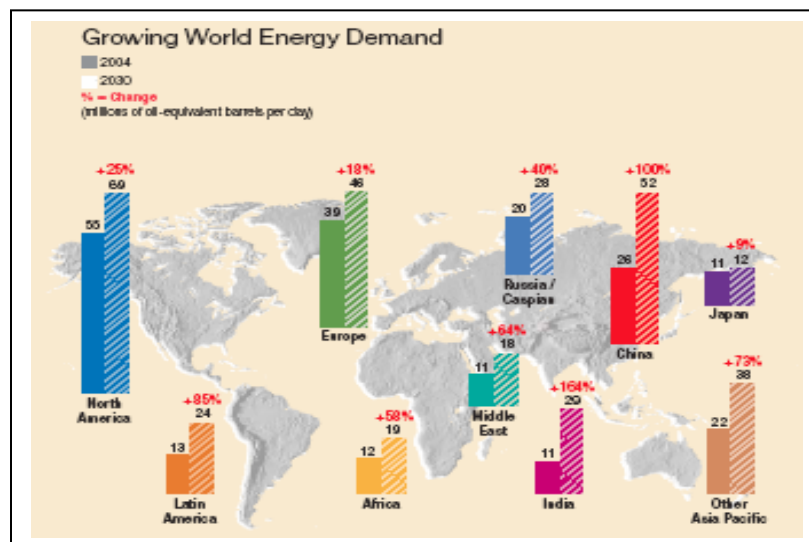
- Within the context of existing and projected global energy conditions, illustrate the natural energy partnership that exists within the Americas, assuming relevant political and economic obstacles to integration can be overcome;
- Identify best practices for emulation, and existing roadblocks for elimination, for energy sector investment and integration, given that the profile of regional energy investment is changing due to a more uncertain investment climate; and,
- Recommend specific actions to improve the hemispheric energy landscape.

Before we discuss the hemisphere, however, we must have a better understanding of global energy trends, and where the hemisphere fits in.

# Global Energy Trends

## World Energy Demand to 2030

Literally and figuratively, energy drives the global economy. As the global economy grows, naturally, too, will total energy demand. Total North American and other industrialized region energy demand is expected to grow at a constant rate through 2030. But in the developing world, GDP in emerging Asia is expected to expand at an average annual rate of 5.1 percent, compared with 3.0 percent per year for the world as a whole. With such strong GDP growth, total demand for energy in emerging Asia is projected to *double* by 2030, accounting for about 40 percent of the total projected increase in world consumption and 70 percent of the increase in the developing world. On their own, Chinese and Indian consumption of oil to fuel factories and automobiles will *more than quadruple* between 1990 and 2030.<sup>2</sup>

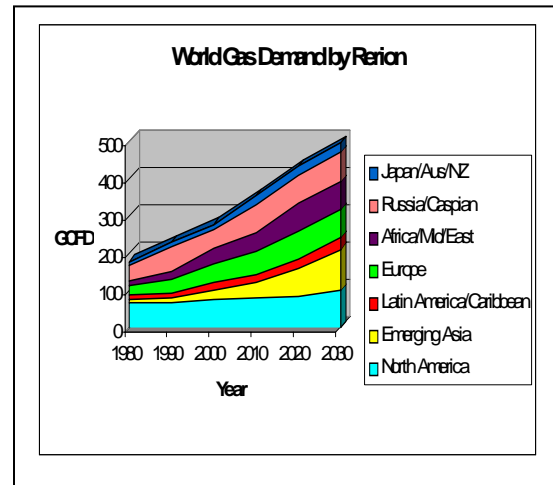
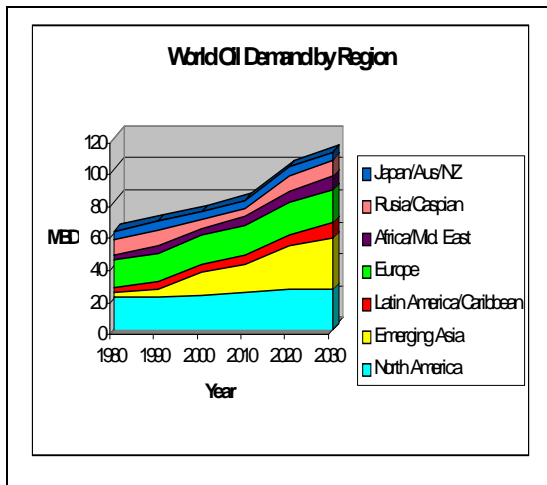


While reliance on oil is projected to remain steady with a growth rate of 1.5 percent annually in all regions except emerging Asia, all other things remaining equal, natural gas is projected to be the fastest-growing primary energy source in the world due to increasing requirements for power generation.<sup>3</sup> (The demand for power generation will also increase the demand for coal and alternative energy such as nuclear, hydro, wind, and solar, though to a much lesser extent.) As countries continue to diversify their energy sources, global demand for natural gas is expected to double by 2030. Specifically, developing countries will play a large role in the increased demand, accounting for some 75 percent of that growth—almost 50 percent of which will go to power generation. Much of this growth in demand will come from the Russian and Caspian regions, which will be able to supply their own increasing demands from their

<sup>2</sup> ExxonMobil, *The Outlook for Energy – A 2030 View*, 2/1/2005, <[www.exxonmobil.com/Corporate/Citizenship](http://www.exxonmobil.com/Corporate/Citizenship)>

<sup>3</sup> Ibid.

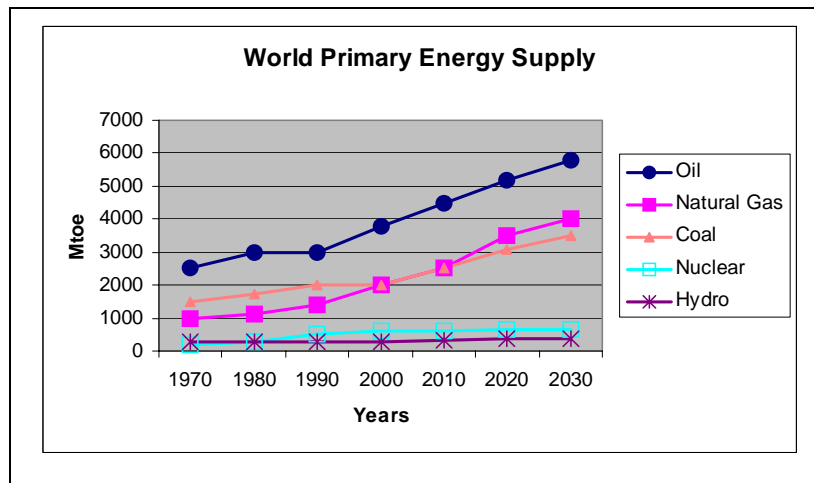
own plentiful reserves of natural gas, and, once again, emerging Asia. Demand growth in Latin America and the Caribbean barely registers.



## World Energy Supply to 2030

Despite advances in different energy technologies, such as nuclear, hydro, wind, biomass, and solar, fossil fuels will remain the leading source of world energy for the foreseeable future. According to the International Energy Agency's (IEA) 2005 World Energy Outlook, fossil fuels will account for almost 80 percent of the growth in energy supply between 2005 and 2030.<sup>4</sup> To be sure, if consumption and production patterns remain stable, world petroleum and natural gas reserves are sufficient to last at least through 2030 and well beyond; at issue is the necessary \$3.5 trillion in investment needed to meet that demand. The question is not whether the energy resources exist—at this point, they do. Rather, the question is whether cost-effective means can be found to get at them, and whether governments will create the conditions necessary for such high risk investments to be made. It is that question which increasingly vexes the Western Hemisphere. In part, this is because the IEA also reports that new oil and gas production will increasingly come from non-OECD countries, where fossil fuel extraction is dominated by state-run companies and political rather than economic factors often drive exploration and production decisions. This increases long-term political risk in the energy sector thus reducing potential investor interest absent a greater potential upside. Lack of investment leads to a lack of exploration and production, and a concurrent reduction in the quantity of energy supplied.

<sup>4</sup> World Energy Outlook 2005, International Energy Agency.



## Hemispheric Energy Trends

### Energy Outlook for the United States<sup>5</sup>

Absent significant conservation efforts, total US energy consumption is projected to grow steadily through 2025 at 1.4 percent per year, approximately one-half the rate of GDP growth. To meet this demand, the United States will have to increase net energy imports even if domestic production increases. As a result, imports are expected to constitute 38 percent of total US energy consumption in 2025, up from 27 percent in 2003.

For the foreseeable future, the two largest US energy sources, as with the rest of the world, will be oil and natural gas. According to the EIA Administrator, “Led by growth in the transportation sector, which accounted for 67 percent of total petroleum demand in 2003, petroleum demand will rise from 20 million barrels per day (2003) to about 30 million barrels per day by 2025; while US oil production will stagnate at about 9 million barrels per day—creating an oil import deficit of about 68 percent if the trends remain.”<sup>6</sup> (See appendix Chart 1 for the US oil balance.) Currently, the United States imports more oil from Canada than anywhere else; Saudi Arabia is second, Mexico third. Additionally, Venezuela accounts for approximately 14 percent of total US oil imports.

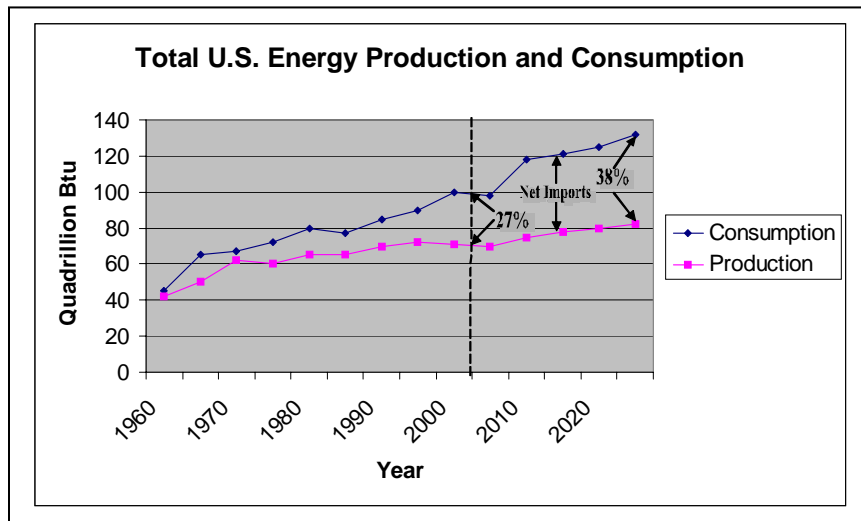
Demand for natural gas in the United States will rise at an even higher rate than oil, about 20 percent by 2030, outpacing national production capabilities whose growth has been flat since the middle of the 1990’s. Without concerted conservation efforts, by 2030 the United States will have to import approximately 30 percent of its annual needs. (See appendix Chart 2 for the US natural gas balance.) To feed this increased gas consumption in the medium to long-term, 75 percent of which will be used to generate electricity, the United States will have to continue to diversify its natural gas sources. After 2015, due to depletion and growing domestic demand within the US’ largest natural gas provider—Canada—net exports to the United States from Canada are projected to

<sup>5</sup> Annual Energy Outlook 2005. Energy Information Administration.

<sup>6</sup> Congressional Testimony by Guy F. Caruso, Administrator, Energy Information Administration, Department of Energy. United States Senate, Energy and Natural Resources Committee. February 3, 2005.

decline steadily.<sup>7</sup> Demand will remain, though, and the supply exists within other hemispheric nations including Trinidad and Tobago, Bolivia, and Peru to meet US needs.

Coal will remain the third largest US energy source. It could be the top source of energy, given massive US reserves, but environmental concerns have limited its usage. In 2003, the United States produced 1,072 million short tons (Mmst) of coal, a 2.1 percent decrease in production from 2002. In 2004, however, the US coal industry experienced an increase in year-to-year production of 3.0 percent in the first ten months alone. Nonetheless, the United States imported an estimated at 25.0 Mmst in 2003, a 48 percent increase from 2002. This trend should continue if new domestic sources are not exploited. On the flip side, US coal consumption rose in 2003 to 1,095 Mmst, a 2.7 percent increase from 2002. A rebounding US economy in conjunction with above average summer temperatures helped drive this demand increase as coal-based energy generation rose to meet these conditions. Coal-based energy generation increased by 1.6 percent, resulting in a 26.8 Mmst increase in total coal consumed in the electric power sector. The use of coal for power generation will likely remain constant in the near future. Prices, however, will continue to increase, as the United States will have to import more coal due to environmental restrictions on the use of lower quality, “dirtier” North American coal.



## Energy Outlook for the Western Hemisphere<sup>8</sup>

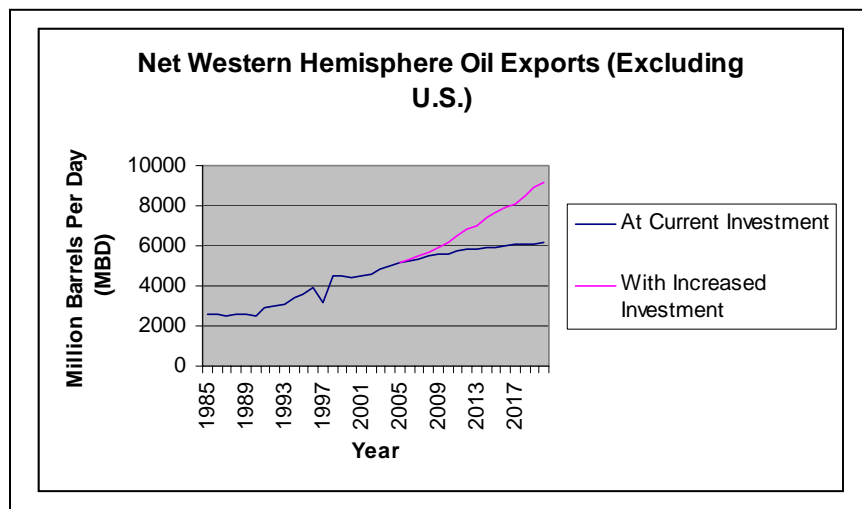
Although total energy consumption is expected to grow in North America and Latin America and the Caribbean, the region as a whole will remain a net energy exporter through 2025 *if current investment trends continue*. With increased production of natural gas in Trinidad and Tobago and Peru, increased exploration in Colombia and the deep waters of the Gulf of Mexico, and the increased feasibility of unconventional energy sources especially including Canadian oil sands, the regional energy surplus could well

<sup>7</sup> Ibid.

<sup>8</sup> Excluding the United States.

continue positive growth for the next twenty years. In fact, advances in exploration and production technologies will allow the Western Hemisphere's net oil import/export balance to grow from 5.5 mb/d in 2004 to just over 8 mb/d by 2025.<sup>9</sup>

This surplus is potentially misleading however, because as production has increased the region's proven reserves have stagnated. According to analysis, apart from Venezuela, Canada, and to a lesser extent Brazil, countries in the region have not seen any important expansion in the reserve base, and some like Mexico have actually seen a decline in reserves.<sup>10</sup> As can be observed in the following graph,<sup>11</sup> Western Hemisphere net exports will begin to level off in the next five years if current production and reserve levels remain unchanged. However, the hemisphere has the second largest global production capability (second only to the Middle East), and with increased investment in exploration and production the region could significantly increase its net export surplus.



Canada is perhaps the best example in this regard. With the use of new technologies in the extraction of unconventional oil deposits (oil sands), Canada's proven oil reserves have ballooned from 4.3 billion barrels of conventional oil to 179 billion barrels including non-conventional oil (see appendix Map 2).<sup>12</sup> Remarkably, this dramatic increase in reserves now gives Canada the second largest reserves in the world, and by far the largest in the hemisphere. Additionally, given the current price of oil, the extraction of Canadian oil deposits is now commercially viable. Global investors are rushing in, from the United States, Canada, China, India, and elsewhere, as companies and nations seek to tap into the largest new source of non-renewable energy deposits the Western Hemisphere has ever seen.

<sup>9</sup> World Energy Outlook 2005. International Energy Agency.

<sup>10</sup> Palacios, Luisa. "Latin America Update." Japan Bank for International Cooperation. July 2004.

<sup>11</sup> Espinasa, Ramon. Presentation to Council of the Americas Energy Conference on behalf of the Confederacion Andina de Fomento. December 2004.

<sup>12</sup> PennWell Corporation. Oil & Gas Journal, Vol.102, No. 47. December 2004.

As elsewhere, the Western Hemisphere's natural gas demand will grow by 4 percent per year, nearly doubling by 2010.<sup>13</sup> This increase will be due primarily to increased production of electricity using natural gas and the conversion of public transportation vehicles and flex fuel vehicles to natural gas from gasoline or diesel. All other things being equal, however, this increasing demand could well be met with the increased production of liquefied natural gas (LNG). Venezuela, with proven reserves of 151 tcf;<sup>14/15</sup> Trinidad and Tobago (26 tcf), Bolivia (24 tcf), and Peru (9 tcf) are the leading candidates to supply additional LNG under such a scenario, though as will be seen later, the politics of energy in certain of these countries are complicated at best. As well, Brazil is a global leader in the production of sugar-based ethanol, with the ability to produce massive, as yet untapped quantities of such fuel for use in automobiles and elsewhere. Depending on the course that hemispheric markets take, such alternative fuel could also play an increasing role in satisfying some percentage of the regional demand for gasoline.

As a region, however, in spite of the existence of proven energy resources that could produce an increasing (non-US) Western Hemisphere energy surplus, governments and national energy companies from North to South have not produced and dedicated the daunting amounts of investment revenue required to finance the oil and gas exploration internally. In virtually all cases, this has been due to political decisions that have been made over time either to limit private participation in oil and gas extraction, to create disincentives for private investment, or to use the receipts from energy production for general budget support. Exploration and production activities have not been given optimal levels of investment, and energy output has suffered accordingly.

Fortunately, though not always easily, political decisions can be reversed if the political will exists to do so. As nations seek the direct foreign investment required to increase exploration and production, they realize that they are competing for a portion of a fixed pool of global capital, and must begin to refocus their efforts to draw such capital if they are to be successful. Without concrete steps designed to frame a competitive investment climate for energy, better matching overall risk and reward, countries will not reach optimum returns. Some countries in the region are aggressively seeking to take such steps, while others are going in the opposite direction. It is to these matters that we now turn.

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<sup>13</sup> Palacios, Luisa. "Latin America Update." Japan Bank for International Cooperation. July 2004.

<sup>14</sup> Proven reserves are estimated quantities that analysis of geologic and engineering data demonstrates with reasonable certainty are recoverable under existing economic and operating conditions.

<sup>15</sup> PennWell Corporation. Oil & Gas Journal, Vol.102, No. 47. December 2004.

# **Examples of Best Practices in the Hemisphere**

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As previously noted, greater investment in the hemispheric energy sector is required to allow for the region to increase total exploration and production. The resources exist; at this point, the capital does not. Nonetheless, in spite of historic and political obstacles, some of the countries in the region are actively seeking to improve their investment climates to attract capital for energy sector growth and development. The following section will highlight a few countries that are taking the necessary steps to improve their investment climates to attract foreign capital. Though each nation is different, certain common approaches can be discerned, including a long-term commitment to sector stability, clear and transparent government rules and responsibilities, an appropriate role for state-owned energy companies, and an improved risk-reward profile. Both sector-specific (exploration and production) and political and economic risk must be mitigated.

## **Petroleum**

### **Canada<sup>16</sup>**

Canada is the United States' most important trading partner. It provides an equivalent of over \$1 billion a day in goods and services to the United States. It is also the largest supplier of energy, including oil, natural gas, and electricity to the United States. Canada exports over 30 percent of its total energy production, and the United States is the main customer. In fact, almost 90 percent of US natural gas imports come from Canada.

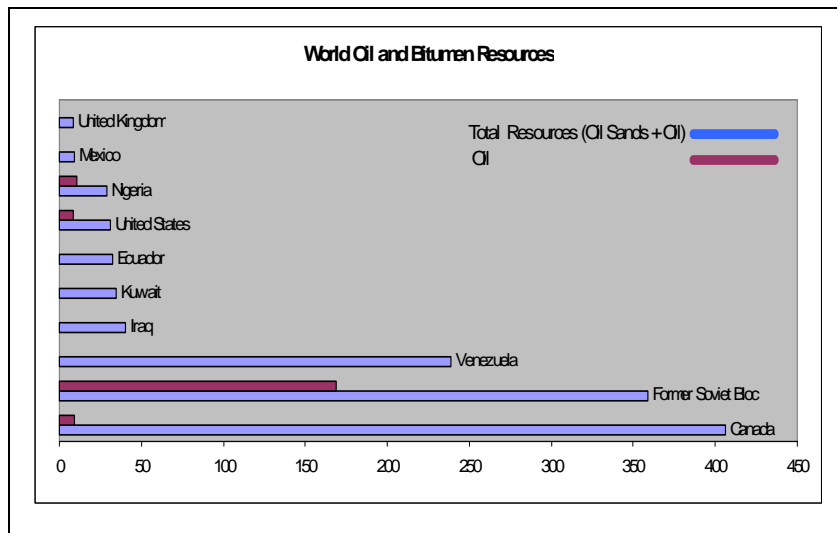
Canada possesses an astonishing 179 billion proven barrels of crude oil, including oil sands, representing the world's largest proven crude reserves after Saudi Arabia. In 2002, however, Canada did not even rank in the top 20 countries in terms of crude reserves. This massive increase in Canadian reserves reflects the inclusion of oil sands, which currently stand at almost 175 billion barrels (see chart on following page).<sup>17</sup> In 2003, Canada's total oil production averaged 3.1 million barrels per day and is expected to increase as new oil sands production comes on line. The increase in oil sands production will offset the decline in conventional crude production, thereby becoming Canada's main energy source. Forecasts estimate that by 2012, combined production of oil sands and conventional oil will reach 3.7 million bbl/d, 77 percent of which will be supplied from oil sands concentrated in Alberta. With such vast potential in the oil sector, Canada has seen significant mergers, acquisitions, and investment in recent years. In 2001 alone, US firms purchased over \$35 billion in Canadian oil and natural gas assets. In 2005, mirroring global trends, Chinese firms made their first investment, and a pipeline from the Canadian fields to the West Coast, primarily to supply Chinese markets, will likely come on line in the next few years.

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<sup>16</sup> Energy Information Administration, Official Energy Statistics from the U.S. Government, December 1, 2005, <[www.eia.doe.gov](http://www.eia.doe.gov)>

<sup>17</sup> Alberta Oil Sands Technology Research Authority.





Despite Constitutional issues impacting energy, the Canadian political system has been able to create conditions that both domestic and international investors find favorable. The Canadian Constitution divides the responsibility for energy policy between the provincial and federal governments. The provincial governments own the natural resources, and they are responsible for most aspects of regulation and energy sector development within their geographical boundaries. The federal government is responsible for harmonizing energy policy at the national level, promoting regional economic development, frontier lands, offshore development, interprovincial facilities, plus international and interprovincial trade. Both levels of governments are involved with energy research.

In addition to Canada's unquestioned commitment to democracy and the rule of law, Canada's federal energy policy underwent a major reform during the mid-1980s, the result of which was a more market-oriented energy sector. Ownership restrictions in the upstream oil and gas industries were relaxed and oil exploration and fuel switching subsidies removed. The government's commitment to a market-based energy policy is evident by ratification of the North American Free Trade Agreement and by the elimination of foreign ownership restrictions for production licenses on frontier lands. Though each nation is different, the Canadian model offers interesting ideas to other hemispheric nations on ways to open their respective energy sectors while remaining within the framework of Constitutional requirements and provisions.

## Colombia

Colombia became a net oil exporter in the 1980s following important discoveries in the Caño Limón, Cusiana and Cupiagua reservoirs. The country's oil production grew from 126,000 bbl/d in 1980 to 816,000 bbl/d in 1999, and oil exports peaked at \$4.5 billion in 2000. By 2004, however, as a direct result of a lack of investment, production had decreased to 529,000 bbl/d. In spite of high potential, Colombia was not able to attract new investment due to a deteriorating internal security environment brought on by the ongoing civil conflict coupled with unfavorable energy investment terms. As reserves

have fallen, fears have risen that Colombia will become a net energy importer by 2010, dramatically changing the nation's terms of trade and fiscal condition. Despite its potential, Colombia remains more than 80 percent unexplored. Indeed, Ecopetrol (Colombia's national oil company) estimates that the country's potential petroleum reserves are approximately 47 billion barrels, but so far the investment has not materialized to find out.

To turn the trend around and attract more international investment, the Colombian government has instituted several policy reforms to benefit the investor by creating a new, more favorable environment for discovery, exploration and production. First, although additional progress must still be made, the security environment has dramatically improved (see appendix Chart 3 for Advances in the Colombian security environment), leading to increased investment generally. Second, seeing opportunity in regional uncertainty, Colombia's leaders have shrewdly taken concrete steps to attract investment in the energy sector specifically by doing away with unnecessary bureaucratic steps, decreasing the required participation in new projects by Ecopetrol, and formalizing regulatory standards to allow for fair bidding on exploration and production contracts by all national and international companies.

Ecopetrol, which once served dual roles as the administrator of Colombia's hydrocarbon resources and also as a for-profit oil and gas exploration and production company, has now been split into two independent entities. This initiative has eliminated Ecopetrol's dual role as regulator and partner. Additionally, Colombia has revitalized its exploration and production contract model and royalty and tax systems. Working with international investors, Colombia's royalties and taxes are now more attractive than the former production sharing system, giving greater autonomy and flexibility to the contractor. Under the new system, the contractor gains the upside from undertaking exploration risk, with no back-in by Ecopetrol. Moreover, the contractor has more autonomy to develop and operate facilities, and has full ownership of project assets. Finally, the contractor does not have to commit a proportion of the production in advance, when the costs, reserves, timing, development, and production are unknown. This arrangement provides a more attractive model for investors, limiting the potential downside, increasing the upside, and securing better rates of return. In turn, investors are returning to Colombia.

As well, working with neighbors Ecuador and Peru, Colombia has also led the effort for an Andean Free Trade Agreement with the United States to lock in reforms and build a long-term bridge to the United States. Once ratified, the free trade agreement will expand market access by Colombian companies to the United States and US firms to Colombia. It will also lower and eliminate tariffs, provide permanent rules and regulations for investment, and, critically, establish dispute settlement procedures. By helping to improve the trade and investment climate generally, a US agreement with the Andean nations will also help long-term investors in the energy sector specifically.

# Natural Gas

## Peru

The Camisea natural gas project is the most ambitious energy project in Peru's history. Consisting of the extraction, transportation, and distribution of natural gas throughout the region, the development of this project is a fundamental aspect of Peru's energy strategy. By tapping into a reliable, low-cost energy source, Camisea will not only provide direct benefits to electricity end-users, it will also improve the competitiveness of Peruvian industry and increase Peru's technical capacity. Furthermore, if all goes according to plan, the project will help alleviate Peru's trade deficit by converting the country from an energy importer (mainly diesel) to an energy exporter by as early as 2007.<sup>18</sup> Camisea will require approximately \$1.6 billion in direct investment.

Camisea comprises the development of reserves, the construction and operation of two pipelines, one for natural gas (NG) and one for natural gas liquids (NGL), and the distribution network for natural gas in Lima and Callao. Over the course of the following years, additional networks will be developed to connect an increasing number of industrial, commercial, and residential customers. The development of Camisea also presents the possibility of developing a liquefied natural gas project for export to countries such as Mexico and the United States.<sup>19</sup> The first phase is already complete. Gas is currently being delivered in Lima, and the export of liquids has also begun. It is estimated that within the next year, Peru's fuel trade deficit, approximating \$700 million per year, will be eliminated and ultimately replaced by a surplus of up to \$300 million per year. Furthermore, by reducing the country's energy costs by an estimated 40 percent, Camisea is expected to add a full point to Peru's GDP for every year the project operates.

Environmentally and culturally speaking, Camisea is located in an area that requires detailed attention and could be significantly and negatively affected if not developed properly. As a result, specific measures have been taken to ensure the environmental and social viability of this project. Leading this initiative is the Inter-American Development Bank (IDB), devoting itself to establishing the necessary protocols to ensure that the direct, indirect, and cumulative negative impacts and risks associated with Camisea will be properly mitigated. In fact, protective measures have been an important part of Camisea since the early stages of development. It was designed with a specific focus on protecting the area's unique biodiversity and ensuring respect for the indigenous communities in the Camisea region. The project's erosion control and re-vegetation initiatives have been designed so that the areas affected by the gas pipelines will be returned to their pre-construction state. In addition, the Camisea project companies have implemented protective measures to prevent migration and colonization, a main concern of local communities. Finally, through a ground breaking public-private partnership designed to ensure that these issues will continue to be adequately addressed, the IDB has approved a \$5 million loan to the Government of Peru to help strengthen social and

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<sup>18</sup> Camisea Project, Camisea, 2002, June 27, 2005, <[www.camisea.com.pe](http://www.camisea.com.pe)>

<sup>19</sup> Ibid.

environmental investments, monitoring, and enforcement, helping to stabilize the politics surrounding the project for the long-term.<sup>20</sup> Such actions are of fundamental importance to investors.

## **Trinidad and Tobago**

Unlike the rest of the islands in the Caribbean Basin, Trinidad and Tobago is hydrocarbon rich and is the largest producer of oil and natural gas in the region. Since the 1970s, Trinidad and Tobago has embarked on several successful initiatives that have expanded its local natural gas industry as a part of a deliberate government strategy to promote further industrialization. Most of Trinidad and Tobago's inward investment to date has been pegged for the energy sector, which, in turn, produces about 72 percent of the country's exports. Its hydrocarbon resources and natural gas reserves (a proven 17.3 tcf and rising) have enabled Trinidad and Tobago to become the most industrialized country in the Caribbean.

Currently, foreign participation in the Trinidad and Tobago energy sector is governed by Exploration and Production Licenses and Production Sharing Contracts (PSC), allowing for an initial six-year exploration period, divided into three phases, only the first of which is obligatory. If a commercial discovery occurs, the contract totals 25 years, with five year extensions available and subject to negotiation with the Ministry of Energy and Energy Industries. Furthermore, the PSC defines the maximum portion of production that is available for recovery of capital and operating expenses on an annual basis. As a result, the foreign contractor's share of production varies from year to year as a function of costs, price, and production volumes.<sup>21</sup> This contractual regime has proven to be a great incentive for foreign companies to invest and re-invest in the Trinidadian energy sector. Trinidad and Tobago's political stability and attractive geology, as well as its proximity to the high demand US, Latin American, and European markets, have further supported high levels of direct foreign investment.

Internationally, Trinidad and Tobago is exploring the idea of regional integration. Such integration would include the construction of an undersea natural gas pipeline, which would link its reserves to eastern Caribbean states, thereby providing a greater number of outlets for its energy production and increasing supply to otherwise isolated island nations in the Caribbean. In addition, there has been significant discussion between the Venezuelan and Trinidadian governments of combining the two countries' gas reserves. Such integration would be the beginning of an important process by which Venezuela would use Trinidad and Tobago's existing LNG export infrastructure to bring its own natural gas to market.<sup>22</sup> Though there may be political questions of the integration plan that must be addressed, nonetheless the economics of this plan would appear to be sound, both for Trinidad and Tobago and also for investors in the regional energy market.

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<sup>20</sup> Amazon Alliance, *The Camisea Project*, July 15, 2005, <[www.amazonalliance.org](http://www.amazonalliance.org)>

<sup>21</sup> BHP Billiton, *Major Developments*, June 28, 2005, <<http://tt.bhpbillington.com/majordevelopment/angustura.asp>>

<sup>22</sup> International Energy Agency. *Caribbean Energy Outlook*.

# **Power Generation**

## **Chile**

As with many other sectors in its economy, Chile has led the way in developing an appropriate investment climate to attract long-term energy investment in the country. Through the enactment of Short Laws I and II, Chile incorporated three crucial elements into electricity contracts. The first element includes a long-term contract requirement between supply and regulated demand, with price setting mechanisms to secure interest, and price transferring mechanisms to end-customers. The second element provides for an interim period, allowing newcomers to enter the market, thereby furthering competition within the sector. Third, short-term economic signals are included in the regulated prices so as to sensitize markets to material changes in energy prices. By transferring the “real” price of electricity to the consumer, Chile has allowed the market to set the price rather than imposing a price subject to potentially arbitrary government intervention.

Chile has also made significant advances in maintaining competition among suppliers by incorporating crucial elements into its Short Laws. By providing clear tolling and access rules, Chile is able to avoid significant barriers to any supply competitor wishing to enter the market. The law also calls for transparency of information, thus regulatory studies are made available to all relevant parties and criteria for regulatory enforcement are clear and public. Furthermore, Chile has recently established the concept of a Panel of Experts as an arbiter of last resort on electricity regulatory matters. The Panel expedites the resolution of disputes and relies on a highly technical body. Provisions such as the Panel of Experts within Short Law I allow for adequate and expeditious conflict-resolution mechanisms by which stability in the sector can be maintained. Strict criteria on the qualifications of panel members has allowed the process of nomination to be transparent and free from politics, strengthening transparency for all involved parties.

By allowing the market to set prices, minimizing government intervention in contracts, and transmission, and promoting transparency across the board, Chile has created an electricity sector where private investment can flourish in a fully competitive environment. From free trade and trade diversification to macro-economic stability to strong democratic institutions and political stability, Chile continues to set the pace in many regards for other hemispheric leaders to consider.

## **Bio Mass**

### **Brazil**

Brazil is the world’s largest producer and exporter of ethanol. Over half of all cars in the country are flex-fuel, meaning that they can run on 100 percent ethanol or on an ethanol-gasoline mixture. Ethanol in Brazil is made from sugar, which prospers in the country’s tropical climate. In the mid-1970’s, Brazil, then a military dictatorship, launched efforts to wean the nation off oil imports. Those efforts included its National Alcohol Program,

known as Proalcool. With the help of public subsidies and tax breaks, farmers planted more sugar cane, investors built distilleries to convert the crop to ethanol and automakers designed cars to run on 100 percent alcohol. The government financed a mammoth distribution network to get the fuel to gas stations and kept alcohol prices artificially low to entice consumers. By the mid-1980s, virtually all new cars sold in Brazil ran exclusively on ethanol. Nonetheless, by 1989 a shortage coupled with low gas prices soured many on the renewable fuel. The market fell apart. Sales of alcohol-only cars tumbled in the 1990s, and the government gradually withdrew its subsidies and lifted price controls.

However, with oil prices again on the rise, the Brazilian government has instituted a mandate requiring all gasoline to contain 25 percent alcohol. This, and a new generation of flex fuel cars that can run on gasoline, ethanol or any combination of those two fuels, have once again sparked interest in Brazilian ethanol production. With such an approach, as well as regional interest in utilizing such alternative fuels, Brazil's biomass industry is poised for takeoff.

## **Regional Integration Projects**

Just as the United States depends on other nations to help meet significant energy needs, so too do other hemispheric nations depend on significant energy imports. To make up for their energy deficits many of the hemisphere's countries have developed or are in the process of developing sub-regional agreements to formalize partnerships, provide financing (through multilateral lending institutions or country-to-country loans), and build connecting infrastructure to help make regional energy markets more efficient. With a number such projects underway, it is appropriate to ask which will ultimately prove to be the most effective.

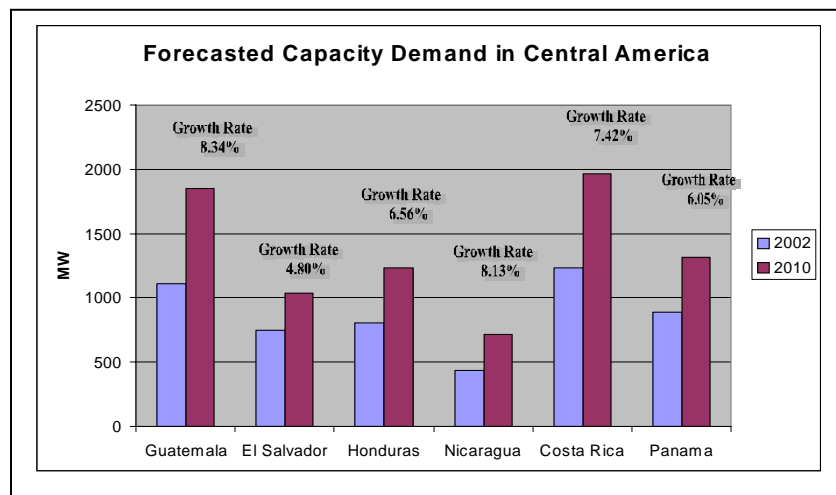
### **Plan Puebla Panamá (PPP)**

PPP is a five-year integration initiative including the states of Southern Mexico and Central America launched by Mexico in 2001. It supports three regional development goals: equitable economic growth, sustainable management of natural resources, and human and social development. In conjunction with its regional development goals, PPP also seeks to promote regional integration and encourage dialogue among authorities and civil society in order to promote a shared vision of social and economic development. As well, it takes the first steps toward linking the NAFTA and CAFTA countries more formally, thus providing a model for deeper economic integration that should be more broadly considered by hemispheric trade negotiators.

The PPP consists of eight initiatives, one of which is electrical interconnection. Led by SIEPAC (Central American Electric Interconnection System), the initiative seeks to improve the region's power grid and create a regional market for power generation. In so doing, PPP is designed to reduce both the risk and cost of regional power generation—by an estimated 20 percent—greatly increasing economies of scale and making private

investment that much more attractive while increasing the use of alternative energy such as hydro and geothermal which is more plentiful in Central America. Regional economic growth spurred by the Central American trade agreement with the United States passed in 2005 could increase regional electrical demand more than 550 percent over the next 30 years.<sup>23</sup> As a result, the region will inevitably face the challenge of meeting its energy needs. PPP is therefore a timely and necessary initiative. The interchange of power through interconnected power lines is scheduled to begin in 2007.<sup>24</sup>

By standardizing transmission rates, creating economies of scale, lowering costs throughout the economy, and providing the necessary infrastructure to make investment in the power generation sector more attractive, Southern Mexico and the countries of Central America should increasingly attract much needed, long-term investment into the region. SIEPAC may be the key to unlocking significantly greater foreign investment in Central America, and ultimately the capacity to meet the potential expansion of power demand in the region. Once the unified energy market within the Central American countries begins operating efficiently, investment in power generation could reach as much as \$700 million annually for the ensuing ten years. Estimates indicate that foreign investment at such levels would increase regional power generation capacity almost fourfold over the next 30 years to 26,000 gigawatts. On their own, the relatively small nations of Central America and the underdeveloped region of Southern Mexico would never draw such levels of investment in energy or the compounded investment in other sectors that a secure energy infrastructure brings. Without PPP, power generation would lag, electricity costs would remain high, and other, non-energy investment in the region would remain below optimal levels. PPP is thus a creative way to promote both integration and regional development, using sound, targeted government actions to draw direct foreign investment that would otherwise go elsewhere.



<sup>23</sup> International Energy Agency. Central America Energy Outlook. September 2004.

<sup>24</sup> Japan Bank for International Cooperation. PPP-Stage II Tokyo Presentation 2002.

## **Southern Cone Energy Ring**

As political and social instability continues to mount in Bolivia, in part caused by the potential extraction and sale of natural gas, a void has been created in the Southern Cone's natural gas market. With the second largest natural gas deposits in South America, second only to Venezuela, Bolivia would normally be in perfect position to become the leading source of that commodity for its neighbors. However, with Bolivian politics and energy markets currently inhospitable to energy investors, supplies have become less reliable and members and associated members of MercoSur are looking to find a more stable partner from which to import natural gas to meet their increasing demand.

With Camisea, discussed earlier, Peru is rapidly acting to diversify its export markets by seeking to become the Southern Cone's natural gas hub, providing natural gas to Argentina, Brazil, Chile, and Uruguay. This market expansion will require an initial infrastructure investment of over \$2.5 billion to transport the natural gas to regional markets. Using existing pipelines from Chile to Argentina, the proposal is to construct a 1,760 km pipeline from the Camisea gas fields to Chile (which could be finished as early as 2007), then onward to Argentina, Uruguay, and finally Brazil, which already has an existing pipeline with Bolivia.

Peru and the other interested nations are asking the IDB to provide the bulk of the initial financing for the pipeline extension, while looking to private investors to make up the difference in pipeline costs. At the time this report was written, the IDB had conceptually supported these efforts by the regional governments, but had not committed any funds. However, the IDB's outgoing President offered to create a study group to bring experts from the Bank and private lending institutions together with potential investors to work out financing details. With the recent change of IDB leadership, it remains to be seen what will ultimately come of this plan.

But financing is not the only issue Peru and its neighbors must contend with. A major question that must also be answered is whether Peru can supply the Southern Cone's demand while still honoring current contracts to supply natural gas to Mexico and the United States. With estimated reserves of only 9 tcf (Bolivia has estimated reserves of 24 tcf), the long-term viability (20-30 years) of the project has been raised. More overall investment needs to go into exploration and production to make the entire project feasible. Accordingly in virtually every other sector in Peru and throughout the region, general investment climate issues once again come to the fore.



## Regional Energy Sector Investment Concerns

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Unlike the examples highlighted in the previous section, concerns about the regional energy sector are also prevalent. Primarily, these center on respective investment climate matters, but the broader development implications are significant.

In some countries, like Bolivia, despite the existence of significant energy resources, investment has slowed to a trickle and some companies are leaving due to an insecure and arbitrary operating environment. This is more than just a shame; it is a tragedy. Though the popular will might be for Bolivia to reserve its natural gas for domestic use, there is virtually no credible alternative scenario whereby Bolivia—the third poorest nation in the hemisphere behind Haiti and Nicaragua—would be able to develop economically without the effective exploration, production, and sale to external markets of its natural gas reserves. By choosing to create a climate for energy investors that is risky and unrewarding, Bolivia’s leaders, ultimately, are condemning their population to continued underdevelopment.

At the same time, Ecuador is also seeing international energy investors depart due to what they perceive to be an unfair and arbitrary investment climate without recourse to effective redress. Ecuador’s primary engine of economic growth becomes uncertain if its highest foreign currency earner—petroleum—is reduced as direct foreign investors pull out, as some are already beginning to do. As well, the implications of replacing US and Canadian investment in Ecuador with Chinese investment, in terms of corporate social responsibility, the environment, and worker rights, have yet to be addressed. These are significant questions with national and regional implications.

Elsewhere, national budgets have taken priority over necessary reinvestment in the energy sector as profits from the state energy companies are used to support general government spending. In Mexico’s case, for instance, this has led to the unfortunate scenario whereby, with the fourth largest crude oil reserves in the Western Hemisphere, Mexico nonetheless imports billions of dollars of gasoline and natural gas every year. A lack of investment has led to falling reserves, since Mexico has not yet been able to attract significant foreign investment in the energy sector despite the priority efforts of the current administration. Venezuela, too, has been diverting petroleum sector resources over the last several years, reducing potential energy sector investment by the state and impacting future production capacity. To be sure, these are decisions made by sovereign governments, but the practical impact of such decisions is that in some cases the investment needed to develop resources at optimal levels has not materialized.

The same is true in the power generation sector. Needed investments in necessary infrastructure are delayed or eliminated by private companies if regulated rates—the lifeblood of the sector—are insufficient to promote growth. After the economic crisis of 2001, for example, Argentina capped rates tightly which led to power shortages. New

investment in the sector dried up, and four years later it remains minimal, leading some analysts to worry about medium- and long-term results.

More broadly, among the most common concerns of foreign companies working in Latin America and the Caribbean is a lack of effective dispute resolution mechanisms and the high level of bureaucracy, unpredictable regulatory processes, and high or arbitrary and inconsistent tax structures. International investors also face serious challenges when conflicts of interest arise with the state and its national company. In some cases, for example, the national oil company is directly linked with the national regulatory agency. This can create an unbalanced environment when bidding for new projects or resolving disputes. Even if such concerns prove to be unfounded, the perception of a conflict of interest can have profound adverse consequences which can only be mitigated by a commitment to transparency and fairness.

In short, there are numerous areas for further investigation and reform. Each nation has its own reasons for treating its respective energy sector as it does. Economic efficiency or investment climate certainty may not be at the top of the priorities list. Indeed, sovereign nations can make sovereign decisions. With that in mind, however, the practical impact of such actions may be that domestic and foreign energy investors begin to look elsewhere, thus limiting investment inflows and reducing the opportunities for energy to serve as a long-term catalyst for broad-based economic growth and development in the Americas. It is a tradeoff that affects not just governments, but also the people whom they represent. Citizens in the Americas need to know: at what cost are they supporting current political policies at the expense of future economic development? Greater education and an understanding of the real tradeoffs is required.

## Recommendations

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With this overall framework in mind, the Council of the Americas makes the following recommendations for the development of lasting energy partnership in the Americas:

- Energy is a strategic matter for the United States and support for increasing partnership in hemispheric energy must be a priority. For energy producing nations of Latin America and the Caribbean, energy offers perhaps the most significant potential engine of growth and development, especially in a high-price environment. The logic of a mutually-rewarding partnership is straight-forward, assuming political obstacles to greater integration can be overcome. Such long-term, mutual interests should form the basis of US engagement in the region generally, and should be developed even as short-term political disagreements may arise from time to time.
- Increasing energy production in Latin America and the Caribbean requires massive new investment, drawing from a limited pool of global capital. As a result, increased attention must be paid to the overall investment climate—not just the energy sector—in nations across the Americas. Key indicators that investors

routinely review include education rates, regulatory certainty, non-discriminatory and stable tax regimes, effective personal security, and attention to the rule of law including anti-corruption and effective dispute resolution. Absent additional progress, further investment is at stake.

- Long-term investors in all sectors are reassured when laws are respected and regulations are clear and fair, whether in their own immediate sector or more broadly. Investments in the energy sector are inherently risky because they often do not mature for many years. Even when price points are high, as in the current environment, energy sector investments are generally made on the assumption that prices will decrease at some point, perhaps significantly. Non-price indicators of investment risk are therefore equally important. Though each nation is different, certain approaches have proven successful, including a long-term commitment to sector stability, clear and transparent government rules and responsibilities, an appropriate role for state-owned energy companies, and an improved risk-reward profile. In addition, in a competitive global environment, nations cannot expect to receive sufficient investment inflows unless their governments routinely abide by contracts as mutually agreed and, when disputes arise, implement in good faith the rulings of objective international arbiters.
- Energy has traditionally been viewed as part of the national patrimony in Latin America, but it is also a commodity. Efforts to de-politicize, de-sensitize, and commoditize the sector in the regional consciousness will expand the potential for greater regional partnership. Energy resources do no good to anyone from a development perspective if they are not developed in efficient and effective ways. As part of this process, governments must do a better job of communicating the long-term benefits of energy projects to their people, while ensuring that the benefits of such projects are broadly and visibly distributed throughout society. Beyond such benefits, reducing the cost of energy generally will also improve consumer well-being and improve competitiveness across the entire production chain, both for domestic and international producers. As well, in order to help ensure the long-term political viability of energy projects, both countries and companies should ensure a robust consultative process with interested parties during the development of new projects in the Americas, and be willing to listen to legitimate concerns and take mitigation actions as appropriate.
- In the North American context, trilateral energy coordination focused on regulatory and harmonization standards, improved infrastructure, and an increase in Mexican energy exploration and production is fundamental for strengthening regional security and competitiveness. Regulators and interested parties from each country should seek to incorporate best practices from within North America, working toward the full integration of North American energy markets and the efficient, market-based matching of supply with demand. Further, the United States specifically should begin to view North America as an integrated energy marketplace, seeking to strengthen its own security by bolstering strategic relationships with Canada and Mexico. Transport costs are lower and the security

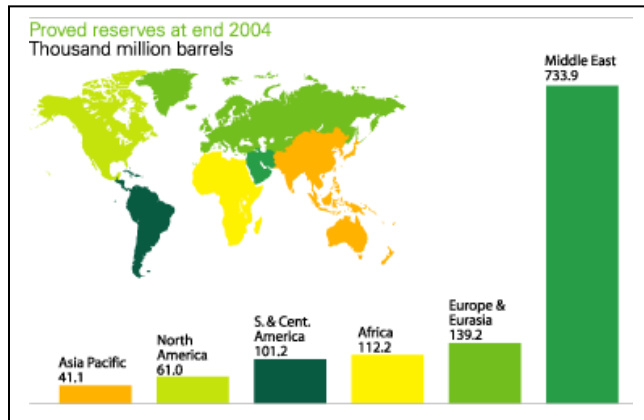
of supply within North America is unquestioned. As well, a North American energy alliance could well be the spark that ignites deeper regional economic integration beyond NAFTA, much as the coal and steel community was an anchor that led to broader European integration.

- Greater integration requires the standardization of regional and sub-regional laws, taxes, royalties, and transmission rates. By linking their energy sectors more closely together based on a high standards, best practices approach, trading blocs such as NAFTA, CAFTA, the Andean Common Market, and MercoSur would greatly enhance market efficiencies and standards, thus leading to greater efficiencies of scale and supporting regional integration. If coupled with the Plan Puebla-Panama process already underway, such energy linkages could engage the entire NAFTA and CAFTA regions, thus leading, perhaps, to the linkage of the two regions on trade terms, as well. Of course, this is highly dependent on standardizing cross-border energy regimes in a manner that will maximize economic efficiency, consumer wellbeing, and investor interest.
- Appropriate energy diversification would lessen the impact of supply shocks, while utilizing renewable sources of significance in the Americas. For example, Central America obtains 50 percent of its electricity from hydroelectric sources, while Brazil is a world leader in ethanol production. Creative means should be found in trade policy and elsewhere whereby the use of such alternative fuels is encouraged or, at a minimum, not discouraged. In Brazil, the development of sugar-based ethanol has already been incorporated into automobile production, led by US manufacturers. Its further use can be considered an opportunity, not a threat. More generally, the sustained application of new technologies can deliver solutions to supply, efficiency, and environmental challenges.
- Finally, multilateral organizations such as the Inter-American Development Bank should continue to prioritize support for infrastructure development projects in the Americas, particularly those focused on energy throughout the region. Energy is the backbone of the global economy, and its effective and efficient usage is a requirement for global competitiveness, at which Latin America and the Caribbean currently lag vis-à-vis their global competitors. Enhanced project support and guarantees would encourage the rapid development of the energy sector in the Americas, encouraging development generally and directly assisting Latin American and Caribbean competitiveness.

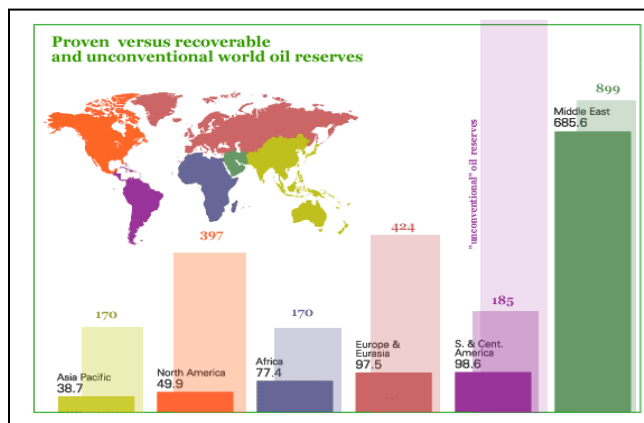
The opportunities are vast, but so are the challenges. To make energy partnership in the Americas workable, governments, industry, and other interested parties must understand the straight-forward reasons to pursue partnership, looking beyond politics to build up mutual interests that would bring us together, rather than pull us apart. Energy is both a strategic issue and a development issue, two symbiotic sides of the same coin. In some ways, the future of hemispheric integration depends on the outcome of this discussion, leading to the implementation of a strategic hemispheric plan for energy cooperation and development. The time to begin is now.

# Appendix

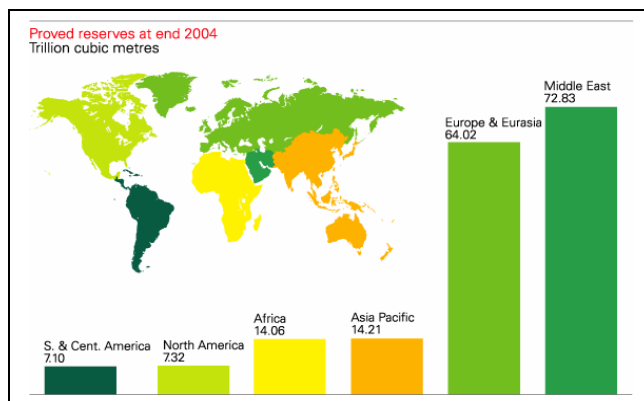
Map 1<sup>25</sup> –



Map 2<sup>26</sup> –



Map 3<sup>27</sup> –



<sup>25</sup> BP Statistical Index, 2004.

<sup>26</sup> Ibid.

<sup>27</sup> Ibid.

Chart 1<sup>28</sup> –

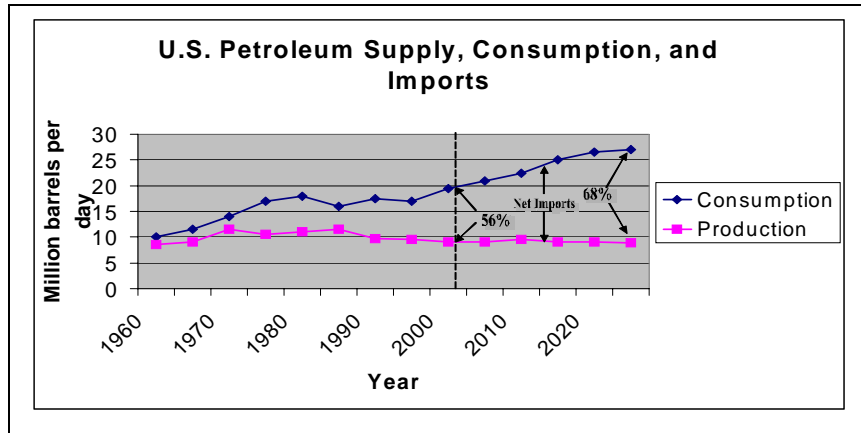


Chart 2<sup>29</sup> –

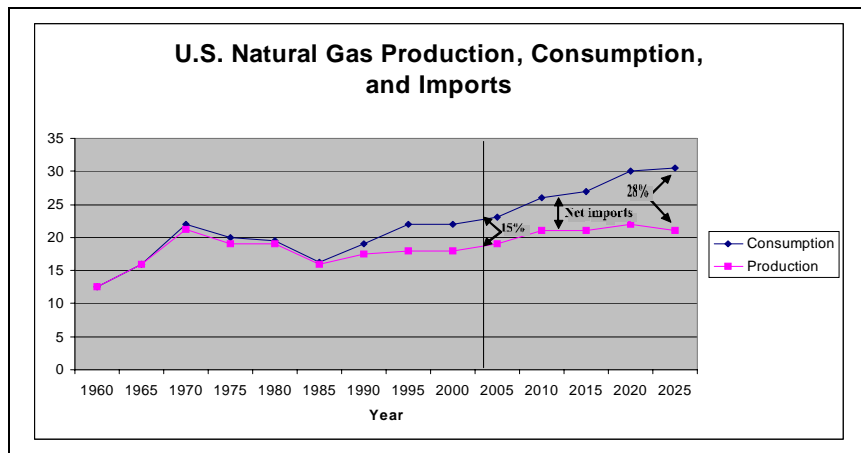
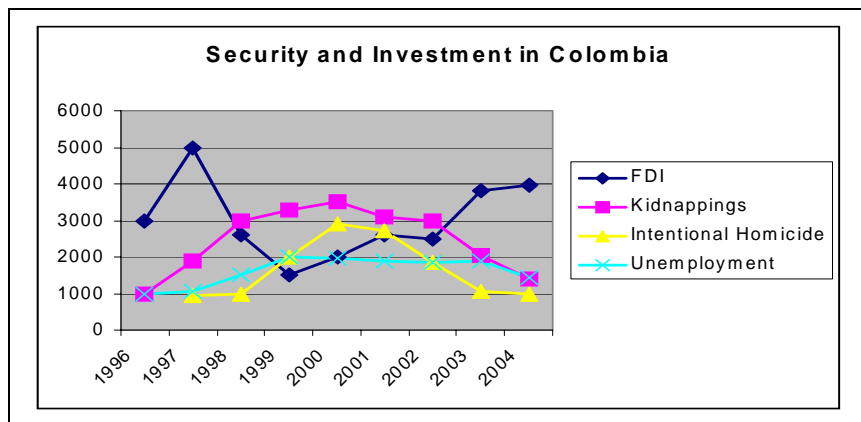


Chart 3<sup>30</sup> –



<sup>28</sup> Annual Energy Outlook 2005. Energy Information Administration.

<sup>29</sup> Ibid.

<sup>30</sup> Ministry of Defense, Colombia.

# Energy in the Americas

## Conference on Energy Issues in the Andes

September 28, 2004  
United States Department of Energy

### Welcoming Remarks

**Eric Farnsworth**, *Vice President, Council of the Americas*

### Opening Presentation: Outlook on Regional Energy

**Secretary Robert Mosbacher**, *President and CEO, Mosbacher Energy Company*

### Panel Discussion

**Guillermo Castillo**, *President, ElectroPeru*

**Chris Steele**, *Planning & Commercial Manager, Latin America Upstream, ChevronTexaco*

**Iván Díaz Molina**, *General Manager, PPL-Global, Latin America LLC*

**Moderator: Joaquin Moreno Uribe**, *Country Chair for Venezuela, Shell Venezuela*

### Featured Speaker

**Introduction: Bjorn Fermin**, *Director of New Business Development for the Americas, Shell Exploration and Production*

**Luis Ernesto Mejia**, *Minister of Energy and Mines, Republic of Colombia*

# **Energy in the Americas**

## **Integrating North American Energy**

**Thursday, December 9**  
**Inter-American Development Bank**

### **Welcoming Remarks**

**Dennis Flannery**, *Executive Vice President, IDB*

**Susan Segal**, *President and CEO, Council of the Americas*

### **Opening Presentation**

**The Honorable John B. Breaux (D-LA)**, *United States Senate*

### **Opportunities in North American Energy**

**Chandler Wilhelm**, *Director of Drilling Exploration, Shell Exploration and Production*

### **North American Energy Integration**

**Daniel Yergin**, *Chairman, C.E.R.A.*

**Thomas McLarty**, *President, Kissinger McLarty Associates*

**Ramon Espinasa**, *Consultant, Integration and Regional Programs, IDB and former Chief Economist PDVSA*

**Moderator: William Loveless**, *Chief Editor, Platts Inside Energy*

### **New Technology for Extraction of Unconventional Resources**

**Murray Smith**, *Energy Minister for Province of Alberta, Canada*

**Darcel Hulse**, *President of Sempra Energy LNG Corporation*

**Roger Berliner**, *Partner, Manatt, Phelps & Phillips LLP*

### **Luncheon Keynote Address**

**Jose Alberto Acevedo Monroy**, *Undersecretary, Ministry of Energy, Mexico*



# **Energy in the Americas**

## **Supplying the Demand: Hemispheric Energy Cooperation**

**Tuesday, March 15, 2005**  
**Inter-American Development Bank.**

### **Welcoming Remarks**

**Dennis Flannery**, *Executive Vice President, IDB*

**Eric Farnsworth**, *Vice President, Council of the Americas*

### **Opening Presentation**

**Charles Gonzalez (D-TX)**, *House Energy and Commerce Committee,  
United States House of Representatives*

### **Liquefied Natural Gas as a New Source of Hemispheric Energy**

**Jaime Aparicio**, *Ambassador of Bolivia*

**Daniel McElduff**, *Senior Director, Natural Gas Research,  
New York Mercantile Exchange*

**Hector Morales**, *Executive Director for the United States, IDB*

### **Integrating the Region**

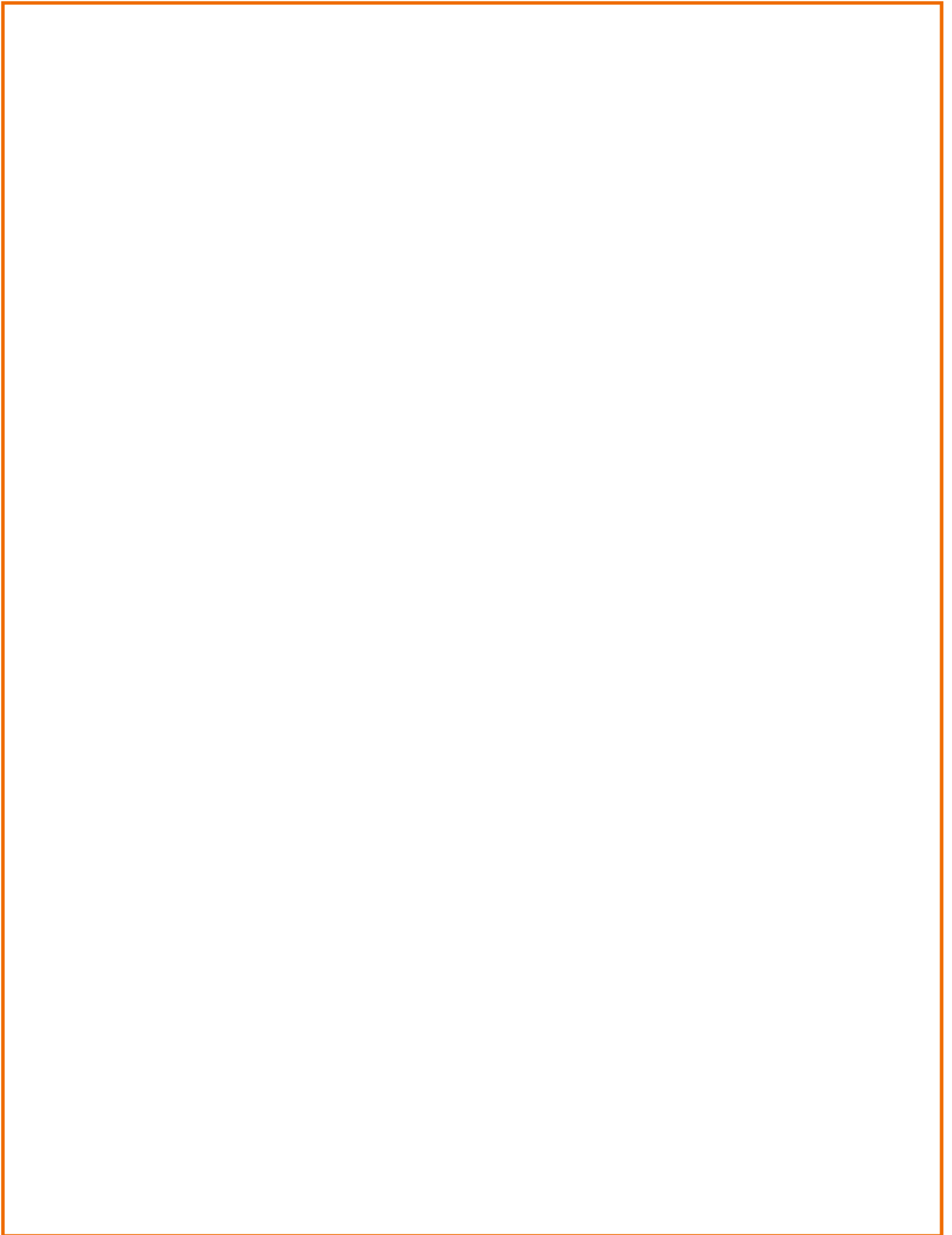
**Luis Enrique Berrizbeitia**, *Executive Vice President, Andean Community*

**Martin Foley**, *Vice President, Gas and Power Americas, Shell Corporation*

**Roger Stark**, *Partner, Kirkpatrick & Lockhart LLP*

### **Luncheon Keynote Address**

**Mark Maddox**, *Principal Deputy Assistant Secretary for Fossil Fuels,  
U.S. Department of Energy*



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