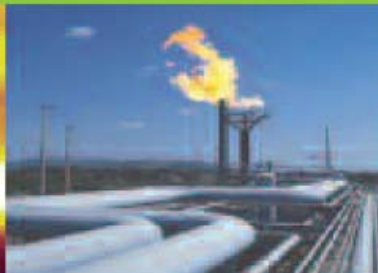


CENTRAL AMERICAN ENERGY SUPPLY SECURITY FORUM

Securing Tomorrow's Energy Supply Today



May 14–16, 2008

Panama City, Panama
Intercontinental Miramar Hotel

Host: Caribbean Central American Action
In Collaboration With: US-Panama Business Council



Caribbean Central American Action
Co-hosted by the U.S. – Panama Business Council
Intercontinental Miramar Hotel

CONTEXT

CCAA's Central American Energy Supply Security Forum was designed to bring together decision makers from the government, public and private sector to discuss what is preventing the regional governments from taking advantage of their natural resources, to define the regulatory framework that the region is adopting for their energy markets and ultimately highlight possible areas for investment. While the 2007 Central American Energy and Competitiveness Conference in Honduras addressed the need for reliable power supply, more public-private partnerships and the promotion of a regional case study to expose further "best practice" solutions, the 2008 Forum looked to answer strategic questions.

Are infrastructure projects and current energy policies increasing the region's energy security? Is it time for a more comprehensive regional energy strategy? Given that fossil fuels are still the backbone of Central American energy supply, what steps are being taken to make the supply side more cost efficient, reliable and less environmentally damaging? Have the governments facilitated investment by reviewing their regulations and policies? Are there signs of continuity in energy policies despite changes in political regimes?

Meeting the challenges in the energy sector will require dialogue, especially if the need for a regional regulatory body for energy policies is needed to ensure the proper development of the Regional Energy Market (MER) which is to help protect and promote the Central American Electrical Interconnection System (SIEPAC.) Only when a consensus has been met on the regulations that will allow for an effective open energy market will the region truly be less dependent on imported fossil fuels.

To access the Conference agenda, please visit CCAA's website at http://www.c-caa.org/conferences/centralam_energy08/overview.html.

SESSION REPORTS

Welcome Session

Welcome:

David Lewis, Vice President, Manchester Trade & CCAA Trustee

Juan B. Sosa, President, U.S. – Panama Business Council

Comments:

Rafael Jaen Williamson, Regional Manager for Policy, Government and Public Affairs, Chevron Corporation

Victor Carlos Urrutia, Chairman, Regulatory Commission for Public Services, Government of Panama

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Since 1980, the growing number of petroleum based plants for electric power generation in addition to robust economic growth, have contributed to doubling petroleum consumption rates in Central America to approximately 310,000 barrels of oil a day in 2006. In Panama, oil consumption grows an average of 3.2% per year regardless of its cost. In 2007, oil imports consumed 6% of the country's GDP and if the trend continues, this figure is expected to nearly double in the next decade. While outdated laws have slowed down investments in Panama's energy sector, it is clear that protectionist regulations region-wide are also deterring the development of a more diverse energy matrix in the short term.

Carbon-based energy currently exists as an option for the short-term diversification of resources. Although it would remain in the group of fossil fuels which the region should strive to be less dependent on, it still provides affordable energy that can help the region meet its more immediate needs. Consumption in the region of this fossil fuel would not be expected to cause serious damage to the environment.

In Panama, major investments have also taken place since the privatization of the energy sector, including the opening of the energy market to foreign investors and successful alliances between the public and private sectors. The government of Panama is working with the Inter-American Development Bank on the development of an interconnection project with Colombia which would connect the Andean energy market with the Central American energy market, diversifying energy sources and further opening its economy. True solutions to guarantee energy supply security would be possible by fostering more of those relationships in Central America.

Session 1: The State of Energy Security in Central America

Moderator: Noemi Castillo, Universidad Interamericana de Panama

Discussants: Teofilo de la Torre, SIEPAC Interconnection Project; Juan Carlos Posadas, Central American Electrification Council; Marcelo Valenzuela, Inter-American Development Bank

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Challenges to Central American electricity supply have been historically due to monopolies in the energy sector, first experiencing total control by the private sector and later by the state. Currently, however, even though much of the industry is back under private sector control, existing protectionist government measures continue to be the main cause of slow rates of investment.

Electricity interconnection projects can be a very effective way to combat the supply issue and maximize supply security. Theoretically, regional integration efforts, rooted either in electricity, pipelines or manufacturing projects, offer opportunities for countries to open their markets and increase access to supply. However, whether or not nation-wide electrification projects can predict successful regional interconnection projects in Central America remains to be seen. Panelists stated the need for consistency between national and regional energy policies in order to achieve synergies and greater benefits for all. Although building these synergies may not solve the energy crisis in Central America, projects such as SIEPAC Electricity Interconnection project and other similarly proposed projects linking Panama with Colombia as well as Central America with Mexico provide a powerful tool for the governments of the region who need to address issues of supply and demand by giving them access to better quality of energy, continual supply and moderate energy prices.

Even though Central American countries are linked by common variables such as language, religion and similar cultures, the differences in governments and political outlooks towards the energy market continue to create barriers to the development of a regional market and regulatory body. SICA (Central American Integration System) has proposed a regional energy policy until the year 2020, which is strongly supported by the respective energy ministries of the region, but still faces the challenge of implementation by the varying governments. Regulatory issues as well as other challenges, ranging from a lack of access to capital, environmental concerns and unstable oil prices have created a series of shortcomings that further threaten the energy supply security of Central America.

Session 2: The Need for a Comprehensive Energy Strategy

Moderator: David Lewis, Manchester Trade

Discussants: Silvia Alvarado, Globeleq; Gabriela Elizondo-Azuela, The World Bank; Vahid Sadeghpour, Cutuco Energy Central America, S.A.



From the perspective of the World Bank, there are three fundamental pillars to a successful regional energy policy. The first is anticipation of rising prices in oil and commodities. The second is adequate access to energy. In Mexico, 97% of the population has access, but three million inhabitants do not mainly due to poverty and lack of access based on location. Energy policies have to consider the needs of the poor in Central America. There are also new challenges brought about by climate change. Central America has the potential of becoming a great source of hydroelectricity if properly developed but it must always factor into its policies that climate change can directly affect hydrology and therefore hydroelectricity and power generation in the long term.

In this session, panelists stressed the need for a successful Regional Energy Market (MER). The three fundamental bases for a working MER to take place are the following: 1. There needs to be a regulatory body that is common to all countries; 2. There has to be a robust model for the planning and operation of the MER system (optimized use of technology, software and hardware, as well as the proper training and capacity building on the market); 3. Lastly, there needs to be a commercial regulatory body that allows the countries to have their own commercial transactions and/or exchanges of energy.

Ultimately, the primary goals should be to have an integrated regional energy market with cohesive policies between the respective governments and a diverse energy matrix that will reduce dependency on any one or two sources, particularly on oil. The question as to whether it would be best to privatize the electricity sector or to keep it under government control may not necessarily have an

immediate answer. While some governments in Central America have opted for the privatization of their energy companies, others have opted out. Panelists agreed that the time has come for Central American countries to start showing more leadership and commitment to the integration process, beginning at a national level since a regional energy market will only thrive if there is political buy in these countries. If protectionist measures continue to exist, the MER will not function and its further development would be a waste of resources. As each country works to reach such political consensus, each country will still have to find its solutions for its individual energy supply needs.

On average, energy demand in the region is growing at about 4.5% yearly and will most likely continue that trend. In order for the region to meet the rising demands of energy, supply must be increased considerably. In many instances, although hydroelectricity accounts for 47% of the annual energy production in Central America, it faces serious environmental problems including fauna, flora, deforestation and population displacement. Natural gas offers a very attractive option, not only as a clean burning fuel but as an alternative source to reduce dependency on oil. However, the dependence on fossil fuels is such that although renewables and alternative energy diversify the energy matrix, production volumes will still be unable to compete against traditional sources of energy. Biofuels, although a more popular source of energy, are not expected to be a solution to fuel shortages. Rather, they will continue to be a supplement to other fuel products.

Keynote Luncheon

Introduction:

Mauricio Nicholls, General Manager, Global Marketing, Chevron

Keynote Address:

Manuel Jose Paredes, Vice Minister of Industry and Commerce, Panama



Mauricio Nicholls stated that Chevron is committed to finding options that will guarantee the energy security of the region and that will meet the challenges that energy companies will confront to provide clean and accessible energy for economic growth. The expansion of the Bahia Las Minas terminal in Panama should be seen as an important step in that direction.

Although one of the immediate needs in Central America is an increase in investment in the electricity generation sector, investment in energy storage is also required to help control demand and prices. Vice Minister Paredes, stated that the current Administration is working to make Panama a regional energy hub by establishing policies that would guarantee regional and international investors the ability to take advantage of the opportunities that an open energy market brings and that in conjunction with the government, would allow for the development of business that is beneficial to the investors and to all stakeholders.

Vice Minister Paredes highlighted public/private alliances as the strategy that allows for strong investment in the region for the growth of Panama's energy supply systems. The current Administration realizes that if it has an energy supply problem with the high prices of fuels, the measures taken must have an immediate effect and also prepare for the next 10 to 20 years to properly guarantee its success. Sound partnerships with the private sector, clearly defined regulations and investors' rights are also encouraged to promote investment not only for Panama but for the region as a whole.

Session 3: Fossil Fuels – The Bridge to the Future

Moderator: Arturo Condo, INCAE

Discussants: Alfredo Fernandez-Sivori, Exxon Mobil; David Taylor, Halcrow



This session again stressed that fossil fuels will continue to be the single most important source of energy until at least 2030. Continued economic progress, population growth and the pursuit of improved living standards in the developing world will be the key drivers of global energy demand over the next two decades. Access to reliable, affordable energy is essential to economic prosperity worldwide. The challenge for all energy companies and regulators is to meet energy demand with practical, broad-based solutions that promote economic development and energy security while balancing the need to protect the environment. Increased reliance on coal and strong growth in all fossil fuel use is expected to increase energy-related CO2 emissions in the developing world by 2% per year.

In the petroleum market, Central American companies have done very well in diversifying sources of supply. High international prices and regional supply problems compelled the companies to look for new suppliers. Traditionally there were 3 points of supply (US, Mexico, Venezuela). By 2006, there were 31 points of supply, including points as diverse as Korea, Tunisia and Lithuania.

The region also has import capacity for the construction of new energy storage facilities. One good development that occurred in the region is the harmonization of product specification. This gives some economy of scale to importers helping to keep product costs as low as possible.

Session 4: Strategies for Increasing Energy Supply

Moderator: Jose Gabriel Miralles, AmCham Panama

Discussants: Mario Arana, Polaris Geothermal; David Felipe Pérez-Salazar, Banca de Inversion Bancolombia; Julian Nebreda, AES Corporation



Countries in Central America are facing the challenge of diversifying their matrices, which are heavily oil-dependant and therefore have to withstand the pressures volatile energy prices. Financing from both the public and private sectors will be essential to ensuring the regions ability to make a shift away from oil dependence. The investment climate will also need to show stability so as to attract investment (foreign and local) and ensure confidence in projects, as returns on investment are medium and long term.

Colombia experienced an energy crisis during which the government decided that the private sector should become more involved in energy projects. This resulted in increased investor confidence. The government created an Energy Regulatory Commission that has complete credibility within the market, is not politicized, has clearly stated rules, and makes stable decisions with public and private sector consensus. In earlier years, the majority of Colombia's energy projects were financed by the government, but now, nearly 25% of them are financed by capital markets and many of them by national financial institutions. The transparency of the system and the integration of the private sector has allowed for long term energy projects and new ways of financing them locally.

Participants agreed that the Central American governments' creation of stable financial environments, sound regulations and policies, discipline and incentives can also attract and keep new

and former investors, most especially in times when allocating government funds for oil or alternative energy exploration becomes more costly. Such an environment would create opportunities for new public/private alliances and move the region towards achieving energy security.

FORUM CONCLUSIONS AND RECOMMENDATIONS

Challenges to the Private Sector

Questions arose about the influence that private oil companies have over the volatile oil prices, and it was stated that more than 90% of global oil reserves are controlled by governments or state owned oil companies. Prices have been high because OPEC (Organization of Petroleum Exporting Countries) controls 40% of the world's oil supply and today's world demands more and more energy. Current consumption is of 86 million barrels of oil a day, which exceeds existing production levels. Concerns rise for the private sector when some governments consider changing product specifications (offering constituents lower quality products) as a reaction to volatile prices. Unfortunately, the consensus was that such government actions will ultimately increase prices.

The private sector also faces scrutiny when conservationist groups begin to see public/private alliances on energy projects as cartels, monopolizing their resources and their environment. A speaker mentioned that unfortunately, the construction of new energy projects are sometimes being deterred by non-governmental organizations and environmentalist groups that are ill-informed of the impacts of these facilities and therefore stressed the importance of the governments' need to aid the private sector in providing educative campaigns. Publicized campaigns on these types of projects, the benefits that new plants being built would bring, and studies showing the expected effect on the environment should help the region not only in dispelling the cartel image, but also in deterring others from preventing further developments. Governments also have to provide incentives to the private sector for the installations of more renewable energy source plants, especially in hydroelectricity and thermoelectricity, the region's largest natural resources for energy.

Recommendations & Conclusion

In Central America, there are urgent energy supply needs and no short term solutions to meet these needs; a disciplined approach is needed. There is no solution that provides for cheap energy without an impact on the environment as well. Certain trade-offs will exist. In recognition of this, several oil companies such as Chevron and Exxon are investing in corn production for biofuels, in university programs that are doing research on biofuels, in geothermal energy, as well as investing more than \$125 billion dollars on exploration to help diversify energy sources.

The importance of the region's need to increase its energy conservation efforts was also stressed throughout the forum. This was seen as a smart and low-cost investment for the short and long term. One recommendation was to build more energy efficient infrastructure. While demand levels are not expected to decrease, there have to be more efficient ways of using energy, such as requiring more insulation in the construction of new buildings. It would increase the costs of construction but the results would be in less energy consumption and ultimately, lower energy costs. The need for the governments to also publicize energy efficiency and conservation campaigns was also stressed,

supporting the idea that the campaigns would raise awareness not only of the energy shortages that current energy consumption trends would bring, but also of its future environmental impact.

With Central America's growth comes the opportunity for hydropower projects to be financed and developed and for coal-fired power plants to be built. Although these projects are expected to bring about CO2 emission issues, they still offer a viable short term solution to the energy shortage crisis. It can also help reduce the consumption of biomass for basic needs, a topic of special concern especially since biomass is not a renewable energy source and causes deforestation. Wind power generation is another alternative with possibilities; nevertheless, for Central America the fact remains that hydrocarbon products will continue to play an important role in the economic equation and over 60% of the total energy demand will continue to be supplied by fossil fuels.

It is expected that Central America will continue its path to development as trade agreements are implemented and foreign investment grows. Power generation and supply security will be a key factor in maintaining that growth. Brazil and Colombia have successfully used long term energy policies to reach a level of sustainability; however, in Central America, such efforts have failed to last. The challenge therein lies in the continuity of the regions strategic energy plan, where all political leaders – current and future – will have to be aware that regardless of the length of their terms, consistency in changes to national energy policies and plans must remain. Only then will the region be able to support its Regional Energy Market and advance in its goals to achieve energy security.

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2ND ANNUAL
Central American Energy Supply Security Forum
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