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We hope you enjoy this issue. If you have any questions, please call me at (978) 287-0301.

Best regards,

Judy Kuan

Editor

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Newsletters

Brazil's Upcoming 6th Oil & Gas Blocks Licensing Round

BY GLENN FAASS AND ROBERTO CARNEIRO
(MACLEOD DIXON CONSULTORES EM DIREITO ESTRANGEIRO)

[Editor's Note: Brazil's National Petroleum Agency (Agência Nacional de Petróleo - ANP) is scheduled to hold its 6th licensing round this summer, offering a variety of blocks for hydrocarbons exploration and development. The 6th Round introduces some changes to bidding rules from previous rounds. The following article analyzes the offered blocks and the sentiments of potential bidders as the August deadline for submitting bids approaches.]

Geological Risk Dropping?

Many potential investors players complain that the number of blocks with high potential has been declining in size since the first bidding round in 1999. As evidence, the skeptics have often noted that there have been few discoveries on the acreage from the first five rounds.

This main concern of oil companies looking at Brazil has been lessened to an extent by recent discoveries. Discoveries last year in Blocks BS-400 and BS-500 in the Santos Basin are estimated at 419 million m³ of natural gas, which

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Argentina Private Sector Calm About New Government Energy Measures

BY LAURENCE NORMAN

BUENOS AIRES (Dow Jones)—In many countries, a government announcement creating a state-run energy company, hiking oil export taxes and blaming the private sectors for widespread gas and power shortages would have energy companies up in arms.

Not in Argentina, it seems, where executives have grown accustomed to abrupt changes in the rules of the game and are used to official hostility.

Sector officials seem unfazed about the state resuming a direct role in the energy sector, five years after ex-President Carlos Menem sold the government's remaining stake in former state oil company YPF SA. For now, they say, there is no indication the government plans to muscle out the private sector.

And while companies are hardly enamored with the higher export duties, officials admit that with oil prices at 13-year highs and wellhead gas rates set to rise, the tax hike is manageable.

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May 13, 2004

Highlights

BRAZIL: An analysis of the ANP's 6th Bidding Round for oil & gas exploration blocks, with a comparison of rules from previous rounds. *page 1*

ARGENTINA: ENARSA, the newly created state-run energy company, has been met with surprising calm from the private sector. *page 1*

CROSS-BORDER ENERGY: Projects along the U.S.-Mexico border create unique issues for energy companies. *page 3*

BOLIVIA: The *Hydrocarbons Update* features the latest news on the Bolivian-Argentine gas supply agreement. *page 4*

ECUADOR: OCP Pipeline dispute; New energy reform timetable. *page 5*

COLOMBIA: The growing coal sector is balancing out falling oil output. *page 6*

UPSTREAM OIL & GAS: Suriname's hydrocarbons concession round; Repsol-YPF in Suriname; BP in Venezuela; Increased interest in offshore Colombia; Precision Drilling in Venezuela; Venezuelan oil income tax reform; Conoco in Venezuela; Halliburton in Mexico. *page 7-10*

FUEL / LNG: Darby acquires SAT share; Enap LNG project; Peru's Camisea. *page 12-14*

POWER SECTOR: Project finance in Honduras; Renewable Energy in Mexico; Brazil's PROINFA program. *page 19-24*

Brazil 6th Licensing Round

Brazil Round 6 from page 1

would nearly triple Brazil's reserves to 690 billion m³, and would change the Brazilian energy matrix.

The year 2003 also saw oil discoveries increasing estimated reserves by 4 billion barrels.

Approximately 150 million barrels of crude (at 42° API) are estimated to underly Block SEAL-100 in the Sergipe-Alagoas Basin in northeast Brazil. Block BES-100 in the Espirito Santo Basin (offshore the state of the same name) hosts approximately 450 million barrels of 40° API, with nearly the same volume of 30° API discovered in Blocks BS-400 and BS-500 in the

Official policy is to attract small and medium-sized companies to bid for the blocks, but journalists and industry commentators are predicting that this round will see the supermajors and large independents back in full force.

Santos Basin, in a border region between the States of Rio de Janeiro and São Paulo.

Nearly 3 billion barrels of mostly heavy oil were found in the Campos Basin. These discoveries are: 950 million barrels in the Cachalote and Jubarte fields; 150 million in Marlin Leste and 1.85 billion barrels of heavy oil (17° to 20° API) in Blocks BC-10, BC-20, BC-50 and BC-60.

None of these amounts includes the forecast for Camamu-Almada. *Grupo Interdisciplinar de Modelagem*

e Análise de Bacias of Coppe of the Federal University of Rio de Janeiro (UFRJ) indicates reserves of 4.2 billion barrels of light crude and 280 million m³ of natural gas in this basin, offshore the northeastern State of Bahia.

December 2003's production in Bahia was less than 45,000 barrels of oil equivalent per day, all onshore.

The UFRJ study suggests 100 wells producing from high quality reservoir/rock; atypically for Brazil, which has mostly heavy crude, this resource is expected to be 30-35° API. This is a shallow water discovery, but deep and ultradeep targets also have good prospects. The ANP considers Camamu-Almada to be a new frontier geological prospect, but exploration costs are high.

UFRJ also presented studies of the Santos and Pernambuco-Paraíba basins, which are considered attractive for the 6th Round. Pernambuco-Paraíba is not yet well known, and the study recommends further organic geochemical analysis. Perhaps this is why Pernambuco-Paraíba has not yet been included in the 6th Round.

Expectations for the 6th Round

In this context, the ANP announced on March 16 that 33 companies had pre-qualified to participate in the 6th Licensing Round, scheduled for August. The rest of the 6th Round timeline is reproduced below from the ANP website. Note the key date in early August, for qualification to bid.

Although the Minister of Mines and Energy has just announced the bidding conference will be on August 17, this information is not yet confirmed on the ANP website.

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ANP 6 th Round Timetable	
Publication of Final Tender Protocol and Concession Agreement	July 2004
Deadline for qualification of interested companies	Beginning of August 2004
Deadline for payment of participation fees	August 2004
Bidding Conference	August 2004
Signature of Concession Agreements	Until November 2004

Source: ANP 6th Round website, <http://www.brasil-rounds.gov.br>

Opportunities and Challenges for U.S. and Mexico Cross-Border Energy Projects

BY LEOPOLDO BURGUETE STANEK AND GABRIELA GONZÁLEZ-MERLA LAGUNA
(BURGUETE, CELIS Y ASOCIADOS, S.C. - MEXICO)

Introduction

A new “virtual” country is emerging along both sides of the US-Mexican border—not in a political or sovereignty-threatening sense, but as part of a shift in demographics. It is estimated that within 20 years, 40 percent of Mexico’s population might be concentrated in this border region.

It is possible to assume that this “new virtual country” is the result of liberalization, globalization, and technological advances that are blurring international boundaries.

Considering the fading of international boundaries and realizing that economic prosperity cannot be assured without energy security, countries are turning their attention to regional energy cooperation as a means of strengthening their energy security. Mexico and the United States are no exception.

In addition, the world has become increasingly conscious of environmental issues. Establishing an efficient and environment-friendly energy production structure has become a top priority for countries striving to prevent economic stagnation, and to continue economic development instead.

The border region of Mexico and the United States has not been immune to this environmental conscience. Consequently, various organizations are pushing for the creation of a Commission to review the consistency of North American environmental standards governing the construction and operation of electricity generating facilities, including but not limited to those sited in border areas.

On the same order, the North American Environmental Cooperation Agreement, in its article 10 (7) enjoins the CEC Council (Commission for Environmental Cooperation) to develop recommendations for the execution of transboundary environmental impact assessments on projects which may adversely affect the territory of another Party.

Any person or entity involved in the development of energy projects in Mexico must be aware of these aforementioned issues: (1) the significance of the US-Mexico border area, (2) the opportunities for energy cooperation, and (3) the need for environmental awareness in planning and engaging in border region energy projects.

The purpose of this article is to present to the reader the opportunities and environmental challenges of cross-border energy projects.

The Power Sector in the Border Region

The electricity sector in the border area has a strong potential for future growth. In 2010 it is expected to grow by 21% in the US, and 66% in Mexico.

Likewise, it is expected that along the border the annual energy use will grow 6% - 8%, translating into the doubling of current energy consumption levels within 9-12 years. Energy projects to be developed in the border region include natural gas pipelines, LNG terminals, power plants and electric transmission lines.

Countries are turning their attention to regional energy cooperation as a means of strengthening their energy security.

Existing generating capacity requirements will increase, resulting in a rise in environmental concerns as well. Electricity generation can contribute to urban and regional ozone, release of atmospheric pollutants, sulfur oxides, nitrogen oxides, mercury and carbon dioxide, particles, acid deposition, eutrophication of important water bodies, culminating in negative impacts on health and ecosystems, nitrogen saturation of forest ecosystems, regional haze and climate change.

The question is clear: How can the region’s growing energy needs be addressed without compromising its environmental integrity?

This question is particularly relevant when your project is to be located in the border area and the environmental impacts are not only going to be constrained to one nation but two.

Following, we will try to provide an answer to this question, based on our own experience developing energy projects in the border region.

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Bolivia: The Controversial New Gas Supplier

BY IVER VON BORRIES A.
(INDACOCHEA Y ASOCIADOS - SANTA CRUZ, BOLIVIA)

On April 21, 2004, after intense negotiations and just when Argentineans were running out of winter energy resources, Bolivian President Carlos Mesa G. decided to sell a small but crucial amount of its vast gas reservoirs to its neighboring country. Supplies of 4MMcm/d from Bolivia to Argentina began this month. The signing of the Bilateral Agreement and its content has already produced consequences that might become pivotal and historical in Bolivia's hydrocarbons policy.

Bolivia must monetize its gas reserves, define its hydrocarbons policy, and take advantage of its privileged position as a gas supplier.

Some of the historical consequences are not only caused by the recent gas reserve discoveries, which resulted in Bolivia's current ability to export large amounts of gas and supply demands worldwide. Most importantly, this commercial operation has been conditioned under unusual circumstances, such as prohibiting the Argentine government from reselling gas to third countries, particularly Chile. It is important to point out that, just as in Argentina, Chile is experiencing an energy crisis, and if no additional energy resources are supplied to their internal market soon, a rise in Chilean costs of living will be inevitable. As is widely known, Argentina, up until now, has been providing Chile with a large amount of its energy requirements.

In order to understand the abovementioned circumstance, we must make reference back to 1879 when, during the "Pacific War", between Bolivia and its ally Peru on one side, and Chile on the other, the latter cloistered Bolivia by taking possession of its only exit to the Pacific Ocean. Since that date, diplomatic relations between Bolivia and Chile have been suspended, and the unstable commercial relationship still exists.

Due to the prohibition or conditional clause described above in the Bolivian-Argentine gas sale agreement, Chile has been obligated to make some difficult decisions, such as considering whether or not to present claim against Argentina before the WorldTrade Organization. Furthermore, it has decided to purchase gas from other countries, mainly Ecuador (which, coincidentally, has been a historical rival of Peru since 1942, when border conflicts started between both countries).

On the other hand, another peculiarity we find in this commercial transaction is that Bolivia will only supply the 4MMcm/d to Argentina for six months. Since the last social convulsion that Bolivia went through in October 2003 (which resulted in the resignation of President Gonzalo Sánchez de Lozada), certain segments of the Bolivian population — especially the indigenous groups — have been pushing for higher government income through the imposition of higher taxes and royalties on foreign oil companies operating in Bolivia. In this sense, and if a new hydrocarbons law is passed, Bolivia will probably have to renegotiate with Argentina the conditions for future sales of gas.

Notwithstanding the above, Bolivian President Mesa and Argentine President Kirchner have agreed to join efforts in order to build the Northeastern Argentine Pipeline which will be able to supply 20 MMcm/d to Argentina and satisfy its energy demands.

Under these circumstances, and as a final statement, we believe that Bolivia must monetize its gas reserves, define its hydrocarbons policy, and take advantage of its privileged position as a gas supplier. It is clear that in order to achieve the above goals, Bolivian society should leave behind the grudges and controversies of the past.

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Petroecuador, OCP Group at Odds over Pipeline Connection

BY MERCEDES ALVARO

QUITO (Dow Jones)—A disagreement between officials at Ecuador's state-owned oil company and a privately run consortium that operates a new heavy crude pipeline threatens to leave oil transportation in this Andean nation in a vulnerable state.

Last month, state-run *Petroecuador* removed a valve that allowed for the connection of its Sote pipeline with the new heavy crude pipeline, known as the OCP. The connection allowed for either Petroecuador or the OCP consortium to use the other's pipeline in the event of an emergency.

According to Petroecuador, the valve was removed because it was only designed to be a temporary measure aimed at dealing with the effects of a landslide that took the Sote out of commission for two weeks in March. The rupture to the Sote caused Petroecuador to have to suspend exports for a similar period of time.

Petroecuador and the OCP group reached an accord, through which the private-sector company would provide the materials and carry out the work to install a permanent connection. However, the valve that the OCP group planned to install wasn't accepted as it didn't comply with the technical specifications demanded by Petroecuador.

While the two sides discuss how to proceed on installing the connection, the OCP group has asked Petroecuador to sign an accord that would enable either of the companies to use the other's pipeline in the case of emergencies.

Jaime Cadena, who manages OCP's technical operations, said Wednesday that the group would seek to have this accord in place for 20 years, which is the same amount of time the private consortium will manage the heavy crude pipeline before it is transferred to state control. Petroecuador hasn't yet responded to the request from OCP.

The Sote, with a capacity of 390,000 barrels per day, currently transports a daily average of 363,000 barrels. In addition to output from Petroecuador, that total includes 70,000 barrels that are produced by private sector companies with which the state-run company has contracts.

According to the OCP group, Petroecuador could save about \$26 million per year if it were to ship those 70,000 barrels of heavy crude through the OCP pipeline, as the state-run company would avoid mixing the lower quality crude with its higher-grade, lighter output.

The OCP pipeline has a capacity of about 450,000 barrels per day, but is only shipping 180,000 barrels at present.

Alvaro Bayas, an OCP official, said Wednesday that there won't likely be an increase in the volume of oil shipped by private companies via the pipeline. "Conditions aren't favorable for foreign companies to invest in the country and increase production," he said.

Ecuador's President Outlines Energy Reform Bill Timetable

BY MARIA ELENA VERDEZOTO

QUITO (Dow Jones)—Ecuadorean President Lucio Gutierrez said last Thursday that he'll give Congress until the end of May to approve an energy reform bill that they're currently debating.

If it's not approved by then, he'll send a new bill to lawmakers with an "urgent" label that will require them to vote on it within 30 days, Gutierrez told *Dow Jones Newswires* in a telephone interview.

The government is struggling to get the reform, which would set out clear guidelines to allow greater private-sector participation in the sector, through a divided Congress.

"The opening of the energy sector is fundamental for the development of the country, which makes the legislation imperative," Gutierrez said.

Securing legislative approval would boost Ecuador's bid to ink a new loan program with the International Monetary Fund. The previous IMF program expired last month, without the government being able to tap much of the funds after failing to carry out a series of economic reforms.

Gutierrez said he plans to disclose other policy measures next week in a television broadcast.

The oil sector is a crucial part of the Ecuadorean economy, representing about 15% of gross domestic product and roughly a third of government revenue.

The government wants to open the sector up to more foreign investments as output at *Petroecuador*, the cash-strapped state entity, falters.

Petroecuador produced around 230,000 barrels a day when he took office in January 2003, but output has dropped to 198,000 barrels per day, according to the latest data.

Colombia's Coal Industry Booms, Helping Offset Oil Woes

BY DIANA DELGADO

BOGOTÁ (Dow Jones)—Coal has become a life saver for Colombia at a time the country's leading export product, oil, has suffered a sharp decline in output.

Thanks to government and private-sector investment, and surging demand for the commodity, Colombia has become the world's fourth-largest coal exporter. The Andean nation shipped 45 million tons of coal last year generating revenues of \$1.5 billion, a 51% increase from the year before and up from \$16.9 million in 1983.

The jump in revenue comes at a critical time for the government as oil production has been cut in half over the past three years to 541,000 barrels per day, sparking concerns that Colombia become a net importer of the pricey commodity by 2006 if there are no new discoveries.

"The value of coal exports could reach oil, if no oil wells are quickly found," Fabio Villegas, President of the *National Association of Financial Institutions*, said in a recent interview. Exports of oil accounted for \$3.3 billion in 2003.

The future for the local coal industry does indeed appear rosy. The mining sector was the second fastest-growing segment of the economy in 2003 — surpassed only by construction — and the coal sub-segment posted growth of 35.85% for the year. In the first two months of 2004, revenues from exports of the commodity reached \$284 million, 55% higher compared to the like period last year.

"We anticipate a 45% increase of coal exports in terms of tons by the end of the year. Meanwhile, it's very likely coal prices will keep surging because most of the countries are growing this year," said Alvaro Camaro, head of research of *Promotora Bursátil*, one of the leading trading companies in the country.

The sharp rise in coal prices on international markets is a dominant factor in the growth of the local industry. Amid strong demand from Japan and China, prices of thermal coal rose to an average of \$52 per ton in April, from about \$26 in October 2002. High caloric value steam coal rose nearly four-fold in the same comparison to as much as \$150 per ton. Colombia ships mainly thermal coal, of which it has reserves of above 6.7 billion tons.

The main export destination for Colombian coal is the U.S., but the Andean nation also ships the product to faraway destinations such as India and Japan.

The government and private sector investors have launched a myriad of infrastructure projects of late to tap into Colombia's estimated 8 billion tons of coal reserves and take advantage of the strong market conditions.

Two ports that will be exclusively dedicated to handling the fossil fuel are under construction and will require investments of at least \$120 million.

The bigger of the two, the Port of Aguadulce, located on the Pacific coast next to the Buenaventura Harbor, is in a first stage of development that will require investments of up to \$71.5 million. Another smaller port is being built on the Caribbean coast.

Aguadulce's chief executive, Jose Pablo Castillo, said that a U.S.-based ports group will inject \$50 million in the new Colombian facility, while the government is investing \$11.5 million in the construction of a road.

"By the year 2007, this port will boost coal exports by 150%. The figure will increase year by year," Castillo said.

The government, for its part, is also planning to build a 300-kilometer railroad to facilitate the transportation of coal from inland mines.

Colombia's coal resources are distributed all over the country, along the Andean highlands, in the Magdalena and Cauca river basins, in the Pacific region, in the Caribbean coastal plains and in the north-east towards Venezuela.

"We have some 15,000 small mines, 80% of them producing less than 2,000 tons a year. The large-scale open mine pit operations produced 43.7 million tons last year," Minister of Mines Luis Ernesto Mejia said at a recent conference.

Colombia is home to the largest open pit mine in Latin America, the Cerrejon complex, which is projected to export 55.7 million tons this year. Cerrejon's mines are owned by *Anglocoal*, Australia's *BHP-Billiton Ltd.* (BHP) and Switzerland-based *Glencore*. The second-largest open cast mine, La Loma, operated by U.S. coal company *Drummond Co Inc.* (DRM.XX), expects to export 25 million tons in 2004, a 50% increase from the previous year.

Suriname's 2003-2004 International Bidding Round

BY JUDY KUAN

On May 24, 2004, *Staatsolie Maatschappij Suriname N.V.*, the Surinamese state-owned oil company, will wrap up its 2003-2004 bid round. In this licensing round, 13 blocks in the Guyana basin are on offer for hydrocarbons exploration and development. The size of the blocks range from 1413 km² to 3402 km², with a total of 28,919km² being offered. According to Staatsolie, the Guyana basin contains 15 billion barrels of potential hydrocarbons reserves.

Through this licensing round, the government of this former Dutch colony hopes to attract oil companies to its hydrocarbons sector. The bidding round is being held in accordance with the Petroleum Law (1990) which "accommodates private companies that want to invest in the petroleum industry of Suriname."

Oil companies are invited to enter into production sharing contracts (PSCs) with Staatsolie, and they may bid individually or in consortia. There is no limit set on the number of blocks that a company or consortium may bid for.

Qualifications include the technical and financial capacity to carry out exploration and production activities. Technical capacity will be demonstrated by areas in the world where current exploration and production activities are conducted, as well as current production and investment (E&P) levels. Financial capac-

ity will be demonstrated by company financial statements and credit ratings. Submitted bids must also include proposals for the duration of each Exploration Phase (with a maximum of five years for the entire exploration period), as well as a minimum exploratory work program.

Bids must be submitted by Monday, May 24, at 13:00 local time. Winners are scheduled to be notified of blocks awarded on July 2. The PSCs must be approved by the Ministry of Natural Resources.

Under the PSC, a winning oil company receives exclusive rights from Staatsolie to perform petroleum operations in the bid block. If Staatsolie chooses to participate in Development and Production Operations, that participation will be limited to 15%.

The oil company will bear all exploration risk and expenses during the Exploration Period (five years, divided into three Exploration Phases). For all development and production expenditures, Staatsolie will participate as a fully paying partner.

Regarding a cost oil ceiling, a maximum of 65% of gross production per year may be payable to the contractor for the recovery of costs associated with Exploration, Development, and Operations.

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R-factor*	Contractor Share of Profit Oil	Staatsolie Share of Profit Oil
<1	85%	15%
1-1.25	70%	30%
1.25-1.5	60%	40%
1.5-1.75	45%	55%
1.75-2	30%	70%
>2	15%	85%

***R-factor Calculation:**

$$\frac{(Cumulative\ Gross\ Revenue) - (Cumulative\ Royalty)}{(Cumulative\ Capital\ Expenditure) + (Cumulative\ Operating\ Expenses) + (Cumulative\ Income\ Tax)}$$

Source: Staatsolie company website <http://www.staatsolie.com>

Suriname *Bidding Round* from page 7

Currently, a proposed royalty rate of 6.25% of gross production is being considered by the government. In the past, royalty rates have been set on an individual basis between the contractor and Staatsolie, ranging from 3% to 12.5%.

Profit oil is the remaining amount of oil after payments of royalty to the state and cost oil to the contractor. The PSC sets forth the formula for dividing the profits between Staatsolie and the Contractor, as shown in the accompanying table.

The oil company's share of the profit oil will be subject to income tax; to ensure contract stability, this income tax rate will be fixed for the duration of the contract. In 2003, the rate was set at 36%.

Repsol-YPF Signs Production Sharing Contract with Staatsolie

On April 24, 2004, *Repsol-YPF* signed a production sharing contract (PSC) with *Staatsolie Maatschappij Suriname N.V.*, the state-owned oil company of Suriname, to engage in oil exploration and production activities in Block 30, located 100 km offshore Suriname.

The block has a surface area of approximately 18,600 km² and is situated in the Guyana-Suriname basin, where oil production at the Tambaredjo and Calcutta fields are under way.

The PSC is for thirty years, including a six-year three-phase exploration period, followed by the evaluation, development, and production periods. *Repsol-YPF* plans to begin the exploration program in the last quarter of this year, which includes collection and processing of two-dimensional seismic data. According to the contract, *Repsol-YPF* is obligated to drill at least one exploration well in the last phase of the exploration program.

Seismic studies by *Repsol-YPF* and existing seismic and geological data supplied by *Staatsolie* demonstrate that significant hydrocarbon accumulations may be located in this area. Block 30 shows particular promise.

For *Repsol-YPF*, this PSC marks yet another step in the company's strategy to boost its exploration portfolio in high-potential basins. - J.S.K.

BP Abandons Plans to Sell Two Venezuela Oil Fields

BY PETER MILLARD

CARACAS (Dow Jones)—*BP PLC* (BP) has abandoned plans to sell two marginal oil field operating contracts in Venezuela after the government failed to approve the deal, a spokesman for BP said Tuesday.

In February 2003 BP agreed to sell operating contracts for the DZO and Boqueron fields to Anglo-French independent *Perenco* for \$160 million. The spokesman declined to comment on why the government failed to approve the deal.

"For the time being we will keep those assets," said the spokesman.

BP acquired DZO and Boqueron in 1999 when it purchased U.S. oil firm *Arco*. In 2002 the two fields produced at roughly 26,000 barrels a day. *Perenco* bought the Pedernales field from BP in 2000, which it still operates. In 2000 BP also sold interests in two other Venezuela fields to Spain's *Repsol-YPF SA* (REP).

ExxonMobil, Ecopetrol, Petrobras Target Offshore Colombia

BY DIANA DELGADO

BOGOTÁ (Dow Jones)—Colombia's government-owned *Ecopetrol* (ECO.YY) signed an accord Friday with *Petróleo Brasileiro SA* (PBR) of Brazil and U.S.-based *ExxonMobil Corporation* (XOM) to explore gas deposits off the coast of Colombia.

The three companies will explore the Tayrona block, an area of more than 4.4 million hectares off Colombia's northern coast in the Caribbean Sea, *Ecopetrol* stated in a press release.

State-owned *Petrobras* will head exploration activities and *ExxonMobil* will oversee drilling operations if gas is discovered.

"The agreement shows *ExxonMobil* is back in Colombia," said Mauricio Tellez, a spokesman at *Ecopetrol*, noting that the U.S. company withdrew exploration and production activities from the South American country nine years ago.

The companies will define an exploration plan by July 31.

Precision Drilling CEO Sees Venezuelan Oilfield Recovery

BY TAMSIN CARLISLE

CALGARY (Dow Jones)—After expanding its international reach through two planned acquisitions, *Precision Drilling Corp.* (PDS) expects to benefit from a turnaround in oilfield activity in Venezuela.

Formerly among the top exporters of crude oil to the U.S., the South American OPEC-member has seen its oil production decline recently due to civil unrest. But now, an upturn in drilling activity in Venezuela is “already under way”, Hank Swartout, Precision’s chairman, president and chief executive, told reporters following the company’s annual meeting here Tuesday.

When Precision, which is Canada’s biggest oilfield-services provider, last month agreed to acquire *GlobalSantaFe Corp.’s* (GSF) onshore drilling assets for \$316.5 million, GlobalSantaFe had four deep-drilling rigs in Venezuela, all idle, Swartout said. Now, one rig is back in service, under contract to Venezuelan national oil company *Petróleos de Venezuela SA*, and Precision is in talks with the Venezuelan government concerning the deployment of the other three rigs, he added.

Swartout told the meeting that the GlobalSantaFe acquisition also will expand Precision’s international operations into several Middle Eastern countries in-

cluding Kuwait, Saudi Arabia, Oman and Egypt. The acquisition of GlobalSantaFe’s 12 rigs in Kuwait also would make Precision a “logical player” in neighboring Iraq, he said after the meeting.

Swartout told reporters that Precision’s proposed spin-off of its Technology Services Group as a separate corporate entity likely will take place within the next two years. He suggested Houston as a possible location for TSG’s head office, arguing that this would enhance shareholder value, as the stocks of Canadian oilfield-services companies currently trade at a discount to those of their U.S. peers.

In addition to its agreement to acquire GlobalSantaFe assets, Precision on Saturday agreed to buy closely held *Reeves Oilfield Services Ltd.* of the UK for GBP92.4 million. On Monday, it filed a registration for the sale of up to \$1 billion in debt and stock to help finance the transactions. The company said in a filing with the U.S. Securities and Exchange Commission that it plans to issue up to \$240 million of common stock as part of that financing, which may take place within the next 25 months.

Swartout and other Precision executives declined to elaborate Tuesday on the company’s financing plans.

Venezuela Tax Chief Proposes Oil Income Tax Reform

BY PETER MILLARD

CARACAS (Dow Jones)—Venezuela’s *Seniat* national tax office hopes to push an income tax reform through the National Assembly aimed at halting tax evasion in the oil industry, *Seniat* chief Jose Vielma said in a press statement Wednesday.

Vielma estimated accumulated tax evasion in the oil industry at \$3 billion, but didn’t specify offending companies. Venezuela opened its oil industry in the early 1990s, but it wasn’t clear if the \$3 billion figure is annual or cumulative from that time.

According to the statement, the reform is aimed at “putting a fiscal fence around all the companies linked to the oil business, that in some way are evading the payment of taxes.”

The pressure for more taxes comes as the government ramps up social spending ahead of state and local elections, which are slated for September. Apart from state elections, President Hugo Chavez faces a possible recall referendum this year.

Earlier this year, Vielma has said the office could lift income tax receipts from the oil and natural gas industry to 5 trillion to 7 trillion bolivars (\$1=VEB1917.60) in 2005, up from VEB600 billion last year, if income tax rates are adjusted.

Venezuela’s 2001 hydrocarbons law lifted royalty taxes to 30% from 16.7%, but cut income tax rates to 50% from 67%.

Conoco to Start Drilling 14 Offshore Venezuela Oil Wells in December

BY PETER MILLARD

CARACAS (Dow Jones)—*ConocoPhillips Inc.* (COP) plans to begin drilling 14 offshore oil wells in Venezuela's Gulf Of Paria in December 2004, the company said in a statement on its Web site Wednesday.

Drilling will take place at the Corocoro field, in the Gulf of Paria West. ConocoPhillips has a 32.5% stake in the project. ConocoPhillips asked local oil-service companies interested in working on the project to register for a bidding process by May 21. Company officials weren't available for further comment.

ConocoPhillips discovered the field in 1999, and it was declared commercial in 2002 after the company drilled four exploratory wells.

ConocoPhillips' other partners in the field are *ENI SPA* (E), which has a 26% stake; *OPIC Karimun Corporation* with a 6.5% stake; and *CVP*, a subsidiary of state oil company *PdVSA* (PVZ.YY), with a 35% stake.

Halliburton Gets \$175M Pemex Drilling Pact

NORA DEVINE

HOUSTON (Dow Jones)—*Halliburton Co.*'s (HAL) Mexican unit received a two-year, \$175-million contract from *Petróleos Mexicanos S.A.*, the state-owned oil company of Mexico.

In a press release last Thursday, the oilfield services company said it agreed to to drill 27 turnkey wells in Southern Mexico for the Mexican company, commonly known as Pemex.

Halliburton, which also provides engineering and government-contracting services, recorded revenue of \$16.27 billion for 2003.

Halliburton said *Parker Drilling Co.* (PKD) will provide it with rigs and drilling crews for the project. Separately, Parker Drilling said the subcontract will utilize five of its rigs in the Samaria, Iride, and Cunduacan fields in the Mexican state of Tabasco. It expects to begin operations in June.

Parker said it also received a two-year contract for its barge rig 53 from Pemex for work in the Macuspana Basin off Tabasco beginning this month. Parker, which recorded \$313.8 million in revenue for 2003, didn't disclose the value of the contracts but did say the five land rigs on the Halliburton project will no longer be reflected as discontinued operations.

Company websites: <http://www.halliburton.com>, <http://www.parkerdrilling.com>, <http://www.pemex.com>

Brazil Round 6 from page 2

Official policy is to attract small and medium-sized companies to bid for the blocks, but journalists and industry commentators are predicting that this round will see the supermajors and large independents back in full force. The round has been cited as having the capacity to generate \$20 billion in new investment, and to move Brazil back into the world's E&P consciousness.

In a recent speech, President Luiz Inacio Lula da Silva emphasized the importance of Round 6 and a more modest expectation, that it would lead to 20 billion *reais* (nearly US\$7 billion) in investment.

Another commentator (in *Gazetta Mercantil*) comments that the 6th Round may attract as much exploration expenditure as all five previous rounds. With the first three rounds having been huge successes (bid

bonuses totaling approximately R\$1.4 billion), this suggests very high interest for Round 6.

Acreage on Offer

The 6th Round blocks will span 12 sedimentary basins and 29 sectors, representing nearly a quarter of a million km².

Three block groups will be offered:

- mature onshore acreage;
- established producing areas; and
- exploration frontiers.

The 917 blocks offered are located:

- in deep waters (more than 400 meters) in the basins of Pelotas, Santos, Campos, Espírito Santo, Jequitinhonha, Camamu-Almada, Sergipe-Alagoas, Pará-Maranhão and Barreirinhas;

- shallow waters in Santos, Campos, Espírito Santo, Barreirinhas and Foz do Amazonas; and
- onshore in Espírito Santo, Recôncavo and Potiguar basins.

The average of onshore block areas will be 30 km², with average area increasing with depth to 180 km² in shallow water and 720 km² at more than 400 meters.

Investors disappointed by some important exclusions (*see below*) can also take heart from included acreage that is in the area of sizeable discoveries of light oil in Santo's basin Block BS-500, and in Sergipe-Alagoas's SEAL-100.

In the Aracruz Sea (Espírito Santo Basin), 38 blocks will be offered, some of them in ultra-deep waters of more than 1,300 meters. In this region, two accumulations of light oil (40° API) were discovered by Petrobras with total estimated reserves of 450 million barrels. At least four of the blocks offered are adjacent to Block BES-100 where the accumulations of light oil were found. However most of the blocks are located in shallow waters in the vicinity of the natural gas fields of Peroá and Cangoá.

Disappointing Exclusions

Some very desirable areas will not be offered, including:

- acreage adjacent to the giant gas field found in Block BS-400 in Santos, especially with Wintershall's discovery of the Mexilhão gas field, 20 km away from BS-400.
- blocks returned the ANP last August.

Of the 22 blocks with an August 2003 relinquishment date, Petrobras had discoveries in sixteen of them; five of those were in partnerships with other companies. Petrobras's "*tour de force*" exploration activities in the months preceding the August deadline resulted in a number of "late finds" that included the Santos gas field, and resulted in Petrobras indicating that it needs more time and acreage to evaluate the full extent of those finds. In light of the August deadline for returning blocks, the ANP agreed that "special terms" would apply to "late finds" on such blocks. Most of these blocks had already been the subject of a previous controversial extension of the exploration period.

Environmental Issues Moving to the Fore

Upon the initiative of the Brazilian environmental agency, IBAMA, and some state environmental agencies, 142 blocks originally included in the 6th Round list were later withdrawn. 28 of the withdrawn

blocks are in the State of Espírito Santo, close to the Abrolhos Archipelago, which is the biggest coral reef in the South Atlantic.

The ANP's decision to exclude nearly 15% of the original blocks was motivated by avoiding the challenges that winning concessionaires could face in obtaining environmental licenses. But the intention is to keep open the possibility of future bidding for those excluded blocks after analysis of the environmental situation is completed.

Environmental issues are also clouding some of the 68 million *reas* worth of pipelines that Petrobras plans to build. After noting IBAMA's objections, Lula set guidelines for the ANP and the Ministries of Environment, and of Mines & Energy to seek a solution for the environmental issues. He has also recognized that energy is an essential condition for the country to grow economically and generate the wealth that Brazil needs.

The 6th Round Initial Tender Documents introduce some welcome changes from the process used in the 5th Round Tender Documents.

Developments in the Initial Tender Documents

The 6th Round Initial Tender Documents introduce some welcome changes from the process used in the 5th Round Tender Documents.

With a greater diversity in the blocks on offer, the ANP abandoned the standardized signature bonus previously used, and is imposing varying amounts for blocks, even within the same sector. The new signature bonuses range from R\$10,000 to R\$30,000,000 for the offshore block of SEAL-M-495. (SEAL-M-495 in the Alagoas Basin surrounds Block SEAL-100, where discoveries of at least 150 million barrels of very light oil were made.)

In this year's round, fixed exploration periods for the onshore blocks are two years, doubling the Round 5 period, and including an extension to a total of three years where the concessionaire undertakes the obligation of drilling an additional well. Offshore explora-

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Brazil 6th Licensing Round

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tion periods remain constant, i.e. from five to eight years in total.

The process for onshore bidding was changed to allow offers for four blocks within the same sector, lifting the 5th Round limit of two blocks within the same sector.

Another change permits the use of an insurance guarantee for performance of the Minimum Exploration Program. This alternative to the Irrevocable Stand-by Letter of Credit previously required may alleviate the financial cost of obtaining and maintaining the Letter of Credit.

There continues a consultation process whereby interested parties, mainly E&P companies, are working through the Petroleum and Natural Gas Institute of Brazil to provide further comment on the tender documents to the ANP. The final results will be known

when the final tender documents are published, likely in July.

Of course bidding rounds are not the only way to get into Brazil E&P. *Globo Online* comments that nearly one-quarter of the 87 blocks acquired in bid rounds from 1997 to 2002 have changed hands. New transactions are reported almost weekly, and a variety of interests are formally or informally known to be available.

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Darby Fuels Expansion at Brazilian Gas Co.

BY ELIZABETH JOHNSON

Darby Overseas Investments Ltd. acquired a 34% share of *Satélite Distribuidora de Petróleo (SAT)*, Brazil's eighth largest fuel distribution company, for an undisclosed amount.

The deal, which has reportedly been in negotiation for two years, was concluded in late March. Darby plans to invest an additional \$10 million in SAT over the next three years.

The investment was made through the Darby-BBVA Latin American Private Equity Fund. It is Darby's first deal in northeastern Brazil and one of the first large deals in the region.

Headquartered in Natal, the capital of the northeastern state of Rio Grande do Norte, SAT acquires, stores, sells and distributes liquid fuel and oil-derived products. The company owns a network of gas stations, but also distributes fuel to gas stations that it does not own. In addition to the 34% Darby has already acquired, the fund has the option of acquiring another 13% of the company at a later date.

According to a statement issued by SAT, the capital will be used to increase the number of gas stations in SAT's distribution network from 400 to 800. The company had 2003 sales of R\$850 million, 30% increase over 2002 sales revenues. Last year, the com-

pany opened 56 new gas stations and plans to open another 80 in 2004. The company also intends to increase the number of gas stations it supplies.

In late 2003, the company began its expansion into other parts of Brazil, opening new gas stations in the states of Minas Gerais and Goiás. In these two states, the company hopes to have 250 gas stations in its distribution network in coming years. The company expects sales revenues of R\$1.2 billion for 2004.

SAT was founded in 1996 with the goal of supplying markets considered secondary by Brazil's largest fuel distribution companies. By focusing its operations in the North and Northeast, the company has been able to increase its market share steadily over the past eight years. Today, SAT has 6% of the fuel distribution market in northern and northeastern Brazil. Over 50% of all fuel sales are concentrated in the top five distribution companies: *BR*, owned by Brazilian oil giant *Petrobras*; *Ipiranga*; *Texaco*; *Esso*; and *Shell*.

SAT will continue to be run by Marcelo Alecrim, the current president and chairman of the board of the company.

Chile Enap to Call for Bids on LNG Project this Year

BY PATRICIA SAN JUAN AND STEPHAN KUEFFNER

SANTIAGO (Dow Jones)—Chilean state energy company *Empresa Nacional del Petróleo* (ENP.YY), or Enap, will call for bids on a new liquefied natural gas project by the end of the year, Enap Chief Executive Daniel Fernandez said Friday.

Chilean President Ricardo Lagos last Thursday announced the \$400 million-\$500 million project to help loosen the country's dependence on natural gas imports from neighboring Argentina, which has cut its supplies to Chile, sending local energy companies, utilities and authorities scrambling for other fuels to supply roughly a third of local electricity.

In the LNG project, which Lagos wants in place by late 2007, one company will be in charge of gasification, transportation and processing of the fuel, with Enap's role limited to organizing the bid and contacting potential buyers of the gas beyond the 1.5 million cubic meters Enap will demand daily by 2007.

"We're not investing in the projecting, we're raising it on the base of a demand we have. There will be power companies that can switch from natural gas to coal but we can't. Refineries won't run on coal, and as a company we're getting up every morning and crossing our fingers that we have natural gas from Argentina. And we're talking about the refineries that produce Chile's fuel," Fernandez said during a news conference.

While during the crisis, which erupted six weeks ago, direct Chilean investments in Argentina's Neuquen basin have been mentioned as a contribution to solving the crisis, Fernandez said that while Neuquen is the only feasible source of natural gas for Chile's central grid because of its proximity, its exploitation is so mature that it will likely run out in a relatively short time, though he declined to say when.

Economics Minister Jorge Rodriguez, who also spoke during the conference, said those comments were Fernandez's opinion and declined to elaborate.

Incorporating LNG into Chile's "energy mix" will in any event lead to higher prices for both large-scale and small consumers, Rodriguez added.

"In the electric and in the gas markets, there will have to be an adjustment in prices but that will be in exchange for more security, which is what we expect from our electricity system," he said.

While it isn't clear what the specific price effects will be, he added that he was confident power companies would be willing to pay for a fuel that was more expensive but reliable.

Regarding the \$400 million-\$500 million price mentioned by President Lagos, Fernandez said that was a reference price taken from setting up a plant of this type in other countries.

Conditions for Chile will be individual, making it impossible at this point to estimate an exact cost of the investment. Enap will begin talking to five investment banks regarding the financing of the project Monday, he added.

Incorporating LNG into Chile's "energy mix" will in any event lead to higher prices for both large-scale and small consumers.

Chile will need to add an additional 400 megawatts in power annually to satisfy demand, Lagos said Thursday. Current plans are for that capacity to go online soon enough to guarantee power through much of 2008, irrespective of the LNG project, he added.

To continue work on solving the supply problem in the short term, energy officials from Chile and Argentina met Friday in Buenos Aires.

With last week's cutbacks, Argentina has reduced its gas exports to Chile to 5.25 million m³ or 25% of normal deliveries from 15%-20%, with earlier fluctuations also occurring without public disclosure.

Latin America Energy Report

Welcomes Your Feedback

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Peru Land Dispute Continues to Plague Gas Export Plan

BY ROBERT KOZAK

LIMA (Dow Jones)—A dispute over a patch of land continues to complicate plans to export liquefied natural gas from Peru.

On Tuesday, thousands of protesters blocked the Panamericana highway, denouncing a government ruling involving the land dispute, reports said.

The protesters were upset that the government could draw the border between two regions in a way that will place a planned gas plant in the province of Lima, instead of neighboring Ica.

Peru LNG Co. wants to use the land about 170 kilometers south of Lima to build a plant to produce liquefied natural gas from the Camisea project for export.

Hunt Oil Peru, majority owner of *Peru LNG Co.*, has warned that the boundary dispute could delay the gas exports.

The issue is currently in the office of the prime minister, but Energy and Mines Minister Jaime Quijandria said Tuesday that it will move to Congress for a final decision.

A government agency, the National Technical Directory for Territorial Limits, recently released a report placing the land where the plant is to be built in the province of Lima.

"The report has to be respected because it will now pass to Congress," Quijandria said on *CPN* radio.

Hunt Oil Peru executive Carlos del Solar was quoted recently in newspaper *Gestión* as saying that he hoped regional authorities in both Lima and Ica could reach a deal on the border dispute.

"The ideal would be to sign a contract in which the regional government of Ica participates, showing they support the prime minister's decision," del Solar said.

Hunt Oil Peru, a unit of Dallas-based Hunt Oil Co., has also been pressing the government to define royalties for a gas project.

Hunt Oil and *SK Corp* of South Korea (SKG.SE) created *Peru LNG Co.* to build the plant that was slated to produce approximately 4.4 million metric tons of LNG a year for export by late 2007 or early 2008.

Last September, *Peru LNG Co.* announced a preliminary deal to sell LNG to a unit of Belgium's *Tractebel SA*, part of the *Suez* group, (SZE) for expected export to Mexico.

The project will make use of gas coming from the \$1.6 billion Camisea project and adjacent blocks located in southern Peru.

Argentina New Energy Company from page 1

In a much-flagged, 90 minute announcement Tuesday evening, the government laid out its long-term plans for Argentina's energy sector.

The centerpiece of the measures was the creation of a state-run energy company, known as *Energia Argentina SA*, or ENARSA, with the government to hold 53% of its shares. The government announced plans to spend ARS11.1 billion (\$1=ARS2.9150) on a range of energy sector projects by 2009. Meanwhile, the oil export tax was raised to 25% from 20%, while other fuel export duties were also hiked. The government said they'd use the money to fund the energy investment program.

"We no longer want to look on from the stands, we want to be there, where they are discussing the energy situation and where they are discussing Argentina's interests," said President Nestor Kirchner. He promised these measures would help avoid the energy crisis.

Company officials say there is some anxiety about ENARSA's creation, but point out there is no reason why it need be bad for the private sector.

"If the state interferes with the companies in the market, if it looks to...sideline their role as the main motor of investment, that would be negative. But if it uses the company to ensure it better understands what's going in the market and to allow it to interact more effectively in the permanent negotiations that happen in the energy sector, it can be a useful tool," said a spokesman for one of Argentina's top oil and gas producers.

Frank McGann, energy analyst for Merrill Lynch (MER), agrees the new company could play a positive role, not least in "spearheading" investments in the gas and electricity sectors, where investment levels have fallen sharply in recent years.

Much will depend on what the company is finally charged with doing, something that remains unclear. Yet, so far, McGann says, the signs are the company won't play a heavy role on the production and refin-

ing side, something which would certainly worry the private sector.

"The concern that a lot of investors have when they hear about the creation of a state oil company, is that it tends to bring back memories of highly inefficient companies...like YPF."

One reason for confidence that ENARSA won't blossom into a local version of Venezuela's PdVSA: Kirchner's words Tuesday. The president promised the company's creation was aimed not at "harming the companies, but...at collaborating" with them to aid Argentina's development.

On the negative side, McGann predicted that, despite Kirchner's promise, Tuesday's announcement will do little to lift the threat of an immediate energy crisis because of big time lags involved in investment projects.

Accepting the Burden

The export tax hike, which the government said will raise \$226 million in 2004, was less well received.

The announcement initially pushed down the shares of Argentina's largest oil producer *Repsol-YPF SA (REP)* Wednesday, though not by much. Chief financial officer Luis Manas told a conference call the tax increase will have an impact of some EUR75 million in 2004. Argentine-based Repsol officials wouldn't comment further on the government's announcement.

In Buenos Aires, shares of *Petrobras Energia Participaciones (PZE)* were down over 5% because of the tax increase and worries over the energy plan. They finished 2.6% lower.

Nonetheless, sector officials said there were mitigating factors. One is that with international oil prices at around \$40 per barrel, the tax will simply reduce the already enhanced margin companies were generating on oil exports. Second, the tax hike may be more than offset by the end of a 28-month utility rates freeze, which will see hefty increases in gas rates for industrial clients. Producers have spent months lobbying for the rate hikes.

And an official at an Argentine refiner said the tax increase was expected after the breakdown of a 16-month-old government-brokered fuel price steady accord. On Tuesday, two refiners raised diesel prices by 4% and warned they may lift gasoline prices.

"We knew this might come. This is one of the things that had come up during discussions with government on (renewing) the accord," the official said.

Still, not everyone was relaxed about the tax hike. History showed that it was far easier to raise export

taxes than lower them, said the spokesman for the major Argentine oil and gas producer. As a result, he warned that when crude prices fall, the government will be stuck with tax levels that drive a "significant" amount of investment away.

None of that seemed to worry Kirchner Wednesday. In a speech to supporters in Buenos Aires province, he defended the decision to raise the rates, saying it was a fair way to share the cost of the country's energy crisis, which he again blamed on the companies.

"Also when we speak of the energy crisis, let those that sometimes want to block the truth have the courage to say that the energy crisis came about because for many years, they did not invest ... That's why I increased the export duties yesterday, (so that) the ones who pay are the ones that should do so."

The companies blame the rate freeze and tough economic conditions for what they accept were low investment levels.

Mexico Cross-Border Energy from page 3

Our Experience

We have been involved in the development of the following projects in the border area: *la Rosita I and II, Río Bravo, Tuxpan II, & Tuxpan III and IV, Bajío, Altamira II, Saltillo* and *Monterrey III*, among others.

From this experience we have been able to identify the environmental opportunities and challenges that are present for energy projects in the border area, and thus give an answer to the question first presented.

For a better analysis of the topic, we segmented it by sectors, which include: water, air, soil, land use, social problems, and environmental obligations. The analysis will cover:

- Environmental Impacts
- Current situation in the border area
- Regulation of said impacts by the Mexican Legislation
- Opportunities
- Challenges

Water Usage in Energy Projects

Current Situation in the Border Area

Northern Mexico is a very dry region. It receives only 4% of the annual precipitation while possessing a concentration of 75% of the population; on the contrary, the southern and coastal areas receive 50%

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Cross-Border Energy Projects

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of the country's annual rainfall. Furthermore, 70% of the water supply for domestic uses is groundwater, with only 37% of annual recharge of the aquifers. Notwithstanding, the current balance of such recharge in the region is negative.

On the other hand, according to recent statistics from the National Water Commission, only 5% of the superficial waters is of satisfactory quality for human consumption, and 24% of such bodies of water are polluted or severely polluted. This is understandable considering that less than 10% of the country's wastewater is treated.

Challenges and Opportunities

The fact that all energy projects require the use of important amounts of water represents a challenging scenario. On the other hand, it also represents an opportunity to obtain acceptance from the community in which the project is located. Let us clarify: Upon the lack of superficial and groundwater to be used, energy projects must seek locations that allow the use of marine water or the use of municipal wastewater. Of course, assisting local governments with the treatment of wastewater is always seen as a social and environmental benefit.

Additionally, in the long run, the use of wastewater or marine water also creates economic benefits for the project, given the fact that its use is much cheaper than the use of superficial or groundwater.

Transboundary Air Pollution

Current Situation in the Border Area

When we refer to air pollution in the border area, we are implicitly referring to Transboundary Air Pollution. Air emissions know no boundaries, and that is why it becomes an issue that is not only a concern of the country where they are generated but also of neighboring countries.

In this respect, specifically for the border area of Mexico and the United States, several studies have been developed regarding transboundary air pollution, particularly for the following cities:

- Tijuana-San Diego
- Mexicali-Imperial Valley
- Ambos Nogales
- Ciudad Juárez-El Paso
- Nuevo Laredo-Laredo
- Reynosa-McAllen
- Matamoros-Brownsville

Several groups have been established to help to solve the problem. Some of these groups are:

- La Paz Agreement Air Work Group (air quality planning and management strategies to ensure reduction in air pollution concentrations).
- El Paso del Norte Air Quality Task Force
- The Joint Advisory Committee
- The Tijuana-Rosarito / San Diego Air Quality Alliance
- Binational Power Plant Work Group

It can be concluded that special attention must be directed toward avoiding air pollution, since strong government and civil pressure exists regarding emissions reductions.

Environmental Impacts

The pollutants released and the environmental impacts associated with generation of electricity include sulfur oxides (SO_x), nitrogen oxides (NO_x), mercury and carbon dioxide (CO₂). These emissions are understood to result directly from the fossil-fired and potentially, geothermal, generating stations, as well as from the production of fossil fuels.

For North America as a whole, about one-third of these emissions are originated by power plants, and all four types of emissions have substantial cross-border consequences.¹

Sulfur and nitrogen emissions cause varied and sometimes linked damages to ecosystems and public health. Evidence also exists of public-health losses associated with minute airborne particles, many directly traceable to fuel combustion in power plants.

NO_x also causes the eutrofication of coastal areas. Both NO_x and SO_x also cause acid rain, which provokes the acidity of lakes, rivers and soils.

Greenhouse gases, such as CO₂, are also emitted, which is believed to be a contributor to global warming.

Regulation of Environmental Impacts by the Mexican Legislation

In order to control air emissions from energy plants, the Mexican Environmental Authorities require the Sole Environmental License (*Licencia Ambiental Única*—LAU), as well as compliance with the applicable official Mexican standards.

It is worth noting that the Ministry of Environment has the power to impose more stringent standards of air emissions if the conditions of the atmospheric ba-

sin require them. Most of the border cities are considered to be critical zones for air quality.

Challenges

The abatement of emissions according to either Mexican standards or to American ones, is something that power developers have to consider when designing energy plants.

We have witnessed that, due to international pressure, plants projected to work according to Mexican regulations are obliged to integrate emissions control options, to decrease emissions levels and to comply with American standards as well.

Now, in the border area, compliance with both sets of regulations (Mexican and American) is an issue to be considered while planning an energy project in the region. Consequently, power developers have to integrate into planned project costs any mechanism that helps to comply with these standards. For example, in order to reduce NOx emissions, a Selective Catalytic Reduction (SCR) can be implemented, which reduces 2 to 5 ppm NOx. This SCR costs 10 million dollars.

Opportunities

Due to the importance of decreasing air emissions, “control” mechanisms are also supported in a market-based approach. There has been an expressed desire to focus on market-based approaches (such as Emissions Trading) to reduce emissions, because they are proving to be an effective and economically efficient way of limiting environmental and human health impacts associated with undesirable pollutants.

Emissions Trading works in the following way: Industries that share an airshed are allowed to pollute until a given limit. If they restrict their emissions levels to be lower than the limit established for them, they can sell this surplus to other industries that have not been able to meet the limit established for them. This creates a market for these pollution surpluses.

Nowadays the certificate that proves the decrease of one ton of NOx is being sold for US \$670.00. Consequently, reducing pollution is also bringing economic benefits.

To establish an effective emissions trading regime for the border area it is necessary to take the following actions:

- Agree to engage in emissions reductions.
- Target emissions reductions where they are most needed.
- Set a maximum emissions level in an airshed

- Allow emissions trading (transboundary emissions trading—TRECs).
- Develop transparent and comparable pollution-emission data for the border area electricity generation sector, to support trend analyses, emissions trading policies, airshed modeling, and public right-to-know.
- Develop a model framework of necessary elements for a border area emissions trading regime that can include emissions of sulfur dioxide, nitrogen oxides and for greenhouse gases.
- Ensure that reductions will be Real, Enforceable, Quantifiable, Surplus and Permanent.

Technical solutions are also applicable to reduce air pollution. High-efficiency natural gas and renewable-energy applications offer attractive replacements for aging fossil fuels. NAFTA’s procurement policies have opened up markets for new technologies that can encourage switching fuels from more heavily polluting fuels to cleaner ones.

Soil Disturbance from Industrial Activities

Current Situation in the Border Area

There are some regions in the northern part of the country in which soil disturbance is already present. This problem may be exacerbated by the industrialization of the area.

Environmental Impacts

The solid-waste generation associated with the production of fossil fuels, as well as the construction and operation of electricity generation and transmission infrastructure, also affects land. The types of solid waste may range from the comparatively benign, such as used equipment, drilling sludge and oily wastes, to highly toxic and hazardous wastes, such as the polychlorinated biphenyls (PCBs), historically used in capacitors and other electrical equipment.

The generation of significant amounts of sludge from wastewater treatment has also become a problem due to the lack of adequate sites for its final disposal or the existence of companies for the reuse of the sludge in other activities.

Regulation of Environmental Impacts by the Mexican Legislation

Under Mexican regulations, the owner or possessor of a polluted land is presumed to be the pol-

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Cross-Border Energy Projects

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luter, unless it is demonstrated that previous owners were the responsible ones because of their activities.

Challenges

In order to avoid soil pollution liability, it is recommended to develop Phase I studies to determine whether soil pollution exists in the area. In extreme situations, a Phase II study (a more involved study) is recommended in order to establish the alternative technologies or methods for soil restoration.

During the construction phase, adequate management of hazardous wastes management must be implemented, in order to avoid soil pollution and underground pollution.

Land Use Regulations

Current Situation in the Border Area

The permitted uses of the land should be studied before the selection of a site, since potential conflicts may arise from the lack of compatibility between the energy project's activities and the activities being developed in the surrounding area. Agriculturally-based economies and human settlements (if they are not far away enough) do not always welcome other uses, especially if water rights are involved, and such projects can imply risks.

It is also important to mention that communal ownership (*ejido*) of lands in Mexico presents a unique problem that has to be considered from the beginning.

This land use situation is not a characteristic of only the northern part of Mexico, but of the entire country. Nevertheless, the level of education of the people living in the north of the country is higher, and more opposition toward land use incongruencies may be presented.

Regulation of Land Use by the Mexican Legislation

Urban and Ecological Development Programs at the local, state and regional levels are already in force. Before developing an energy project, decisions regarding location must be carried out through a detailed analysis of the applicable programs, in order to determine whether the activity to be developed is allowed according to said programs.

Nowadays, environmental authorities, when granting the environmental impact authorization, are very strict about the compatibility of the activity to be developed with the land use established in the program. No exceptions are made.

There is no point in investing in the development of a project if the allowed land use is not compatible with the one required by the project.

Social Elements for Consideration

Current Situation in the Border Area

Within the border area, people are more educated than in other areas of Mexico. At the same time, people also have the feeling of being the backyard of the United States due to the risk implied in the development of energy projects, and the resulting pollution they generate.

The effect may be opposition to the development of energy projects. Today, social movements are able to stop the development of such projects.

Regulation of Social Participation by the Mexican Legislation

The General Law of the Ecological Equilibrium and Environmental Protection (LGEEPA) establishes special mechanisms to allow social participation when the development of projects may present environmental and social impacts.

On the same order, the authorizations of the environmental impact assessment contemplate the undertaking of public hearings. In these public hearings, the energy project is presented, and the community's opinions voiced. Public hearings are sometimes also requested by the banks granting the loans for the development of the project.

Challenges

From our experience, all energy projects have to develop a special social strategy so they are accepted by the community. A project not accepted by the community regarding where it is going to be located, if it is not stopped altogether, will have to face and resolve a considerable number of trials and procedures, making its development much more expensive than what it was planned.

To avoid this situation, we as consultants have recommended to our clients the following:

- Adoption of a social strategy where the community is involved in the design of the project.
- Integration of project elements that will have a direct benefit in the community.
- Negotiation and mediation with the leaders of the community.
- Never to underestimate a social problem.

Fulfilling Environmental Obligations

For the fulfillment of the environmental obligations it is convenient to:

- Sign agreements of responsibility limits.
- Make plans of contribution with the contractors, so they follow accomplishing plans.
- In case of a public bid, before presenting the technical proposal and after analyzing the environmental scope of the project, it is possible to negotiate the change of an obligation settled in the terms of the public bid.

Conclusions

The border region is truly one region, with shared concerns, similar involvements by the governments, and shared aspirations for strong yet sustainable growth, all of which have tied the two countries together for decades. For each to prosper, these linkages must grow even stronger.

In the environmental energy realm, it is necessary to prepare a comprehensive energy database for the

cross border region. In addition, it is necessary to develop a cross border permitting process.

Regarding the environment, there are opportunities for a sustainable energy and for protecting the environment. These include increased development and application of energy efficiency and conservation, renewable energy sources, forest and watershed management, and the forest sector.

Endnotes:

(1) Commission for Environmental Cooperation (1997), *Continental Pollutant Pathways: An Agenda for Cooperation to Address Long-Range Transport of Air Pollution in North America* (Montreal: CEC). For example, electric utilities' contribution to total sulfur dioxide emissions is 22 percent, 48 percent and 70 percent for Canada, Mexico and the US, respectively; for nitrogen oxides the figures are 10 percent, 15 percent and 33 percent. P. 21.

Leopoldo Burguete Stanek is the Founding Partner of Burguete, Celis y Asociados, S.C. Gabriela González-Merla Laguna is an Associate lawyer at Burguete, Celis y Asociados, S.C. Her areas of expertise are energy, climate change, trade and environment and federal maritime zone.

BCIE Approves \$50M for Thermo Plant in Honduras

BY JUDY KUAN

In a statement released April 29, the Central American Bank for Economic Integration (*Banco Centroamericano de Integración Económica* - BCIE) announced that it had approved \$50 million for financing the development of a Honduras thermogeneration plant, Choloma III.

The credit was granted to *Sociedad Energía Renovable S.A.* (ENERSA) for the construction and equipment of a central energy generator with 246MW of installed capacity. The generator will be situated in the municipality of Choloma, in the Cortés department, located in the northern region of Honduras.

The financing was structured using an innovative method of syndicated credit, where top financing institutions, such as the Netherlands Development Finance Company (FMO), the German Development and Investment Group (DEG), Citibank, and other financial entities participated with additional resources.

The project consists of two phases. The first phase plans for the installation of 95MW this year, and the second stage would install 151MW in the first half of 2005 to generate an estimated 1,542GWh each year.

The energy generated by the Choloma III plant will be provided to *Empresa Nacional de Energía Eléctrica*

(ENEE) to be used to satisfy the growing demand for electricity in the country in the short and medium terms, one of the priorities of the Honduran government.

Key elements of the project include plant installation and equipment, extension of the fuel terminal to Puerto Cortés, construction of two new substations in Búfalo and Choloma (Choloma III), reinforcement of the existing substation (Choloma I), and the construction of approximately 30.5km of transmission lines.

The syndicated credit for the execution of this project totals \$117.5 million, with the BCIE participating in 42.5% of the financing and acting as the structurer, along with Citigroup.

This method of syndicated financing promoted by the BCIE offers the regional private sector opportunities to receive financial backing from diverse sources, in order to drive development projects in member countries. The BCIE's goals include boosting efficiency and creating markets that are competitive on an international scale.

BCIE website: <http://www.bcie.org>

Renewable Energy in Mexico

BY JOSÉ RAÚL FELIX-SAUL, BENJAMIN TORRES-BARRÓN
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Renewable Energy as an Alternative for the Preservation of the Environment

Energy demand will continue increasing worldwide as a result of population growth, generalized use of technological products and greater economic development. Historically, fossil fuels¹ have led energy generation schemes. However, environmental concerns in general as well as greenhouse gases emissions² in particular, currently create incentives towards development of clean energy and an efficient energy use.

Mexico's current legal framework allows power generation projects using renewables under self-supply, small production, independent production and export schemes.

When environmental harm directly caused by our consumption of energy is taken into account, perspectives for the future are troubling and even alarming. Even though for a long time environmental harm was denied or minimized, due to reasons directly associated with energy generation through fossil fuels, currently the planet's warming is recognized from a scientific and political perspective.

The greenhouse gas effect is considered one of the main causes of atmospheric contamination and global warming. We now understand that the use of typical sources of energy (carbon, oil or gas) may suffer a low appreciation due to the effects occurring within the short, medium or long term. Environmental problems, even though ignored or unseen for a long time must be analyzed in the context of international policies for sustainable development. Globally, a concern for the immediate consequences originated from the conventional use of energy produced by fossil fuels is related to the degradation of the environment. In recent decades, this concern has ceased to be a local problem and has become a matter subject to attention at the international level.

Renewable energy represents an alternative answer to the prevailing energy demand. The possibility of producing energy with minimum environmen-

tal impacts, through resources generated daily by nature, makes renewable energy an appealing alternative for the planet. The oil crisis of the seventies and the environmental worries provoked by natural threats such as the increase in the ozone layer hole, the greenhouse effect or nuclear waste have made considering renewable energies as a fuel supply source a viable option.

Renewables are vastly available and highly diverse. When talking about renewables, we find: (i) solar energy, which is generated through the use of photovoltaic solar cells or solar energy collectors; (ii) eolic energy, using the wind as a main resource to produce energy; (iii) biomass, employing organic material formed by biological process or by-products derived therefrom; (iv) geothermal energy, originating in the heating power of natural chemical reactions occurring in the earth's interior; and (v) hydraulic power stations, that by using the kinetic force of water for the generation of power, have evolved technologically in recent years.

Renewables have enormous potential to provide energy on a sustainable basis, with zero or nearly no pollutant or greenhouse gas emissions. However, since a regular or constant energy supply cannot be entirely foreseen and given that generation costs are higher than those derived from the use of traditional fossil technologies, renewables have been restrained in their diffusion. As a result, regulatory schemes of several nations provide preferential treatment for renewables to encourage their development.

From a merely economic standpoint, renewable energies are in a serious disadvantage with traditional fossil-based energy generation methods. Many of them lack of certainty about their generating capacity (for instance, the availability or magnitude of wind and/or solar light). Most renewable technologies require great spaces and high maintenance costs, which lead to the production of energy that is more expensive.

Legal Framework for Renewables in Mexico

Each of the renewable energy sources requires an adequate environment that favors its development. Mexico's current legal framework allows power generation projects using renewables under self-supply,

small production, independent production and export schemes. The Law for the Public Service of Electrical Energy (*Ley del Servicio Público de Energía Eléctrica*) does not constrain power generation to a specific technology. In spite that environmental costs are not expressly considered in pricing in the Mexican electric market, there are a few provisions under Mexican law promoting the use of renewable energy.

The General Law of Ecological Balance and Environmental Protection (*Ley General del Equilibrio Ecológico y la Protección al Ambiente*) requires federal, state and local authorities to develop, within their respective jurisdiction, sound policies that include economic, financial, tax and market schemes that must identify as high-priority those activities related to “the research and implementation of energy-saving mechanisms and use of reduced contamination energy sources.”³ This law urges the granting of tax incentives in favor of those who “conduct technology research leading to a reduction of pollutants.”⁴ Based on this, we may conclude that such provisions encompass the development of technology that reduces pollutant air emissions and implements alternative sources of clean power generation. Nonetheless, at this point such legislation has not derived in subsequent regulations nor in the enactment of any provision that identifies specific incentives for the use of renewables.

Interconnection Agreements and Transmission Service Contracts

At present time, the electrical public service in Mexico is only provided by the Mexican Federal Electricity Commission (*Comisión Federal de Electricidad* - CFE) and by the Central Light and Power Company (*Compañía de Luz y Fuerza del Centro* - LFC). As part of the internal guidelines issued by these two state-owned entities, certain specific agreements for the interconnection and transmission services granting preferential conditions to renewable power sources have been introduced. In addition, the electricity industry in Mexico has implemented some regulatory schemes with the purpose of balancing the competitive conditions for all technologies of production, allowing them to compete under similar conditions, while considering implicitly or explicitly those costs actually incurred.

Some of these regulation instruments are the interconnection agreements and transmission service contracts published in the Federal Official Gazette on September 7, 2001, whereby, although no favorable subsidies are included, they do consider renewable

sources’ own particularities and promote their development. These contract forms apply to any licensee of eolic, solar and hydroelectric energy sources with an installed capacity greater than 0.5 megawatts. With these mechanisms, the CFE and LFC are committed with the licensee to: (a) receive all the power at the moment of generation; (b) return the unused energy upon request of the licensee; (c) pay in favor of licensee 1.5 times the applicable public service tariff in the event of an emergency; (d) provide licensee with supplementary energy⁵ at the current dispatch tariff cost when delivering to the grid; (e) take into account the Plant Capacity Rate⁶ in the supplementary services cost; and (f) allocate the priority order for electricity supply in its consumption centers.

Certain specific agreements for the interconnection and transmission services granting preferential conditions to renewable power sources have been introduced.

Likewise, in contrast to the legal treatment for traditional (non-renewable) energy sources, whereby no alternatives are available to compensate power shortage with excess power, the model form of interconnection agreement for renewables provides a power compensation mechanism on a monthly basis. In other words, such mechanism enables the use of surplus energy produced during a given month to compensate power shortages occurred in the subsequent months, based upon yearly balances.

Furthermore, transmission agreements govern the conditions under which CFE and/or LFC will provide power transmission services to licensees. Such agreements allow renewable energy producers to multiply transmission service charges by the Plant Capacity rate, which implies that such producers will only pay around 30% to 50% of those charges applied to complementary and transmission services, as well as to enable renewable producers to swap with the power carrier (CFE and/or LFC) the power generated among different hours of the day.

Emission Reduction Projects

We have mentioned that renewables reduce pollutant air emissions. Therefore, renewables have been

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considered in the negotiation of several international agreements, in some of which the Mexican government has actively participated.

As a result of the general concern generated by the environmental damage produced by the emission of pollutant gases, the international community decided to execute the Kyoto Protocol of the United Nations Climate Change Convention (Kyoto Protocol). The Kyoto Protocol includes several mechanisms that enhance the exchange of emissions-reductions units⁷ (ERU's). The Clean Development Mechanism, established by Article 12 of the Kyoto Protocol, grants the possibility to certify in developed countries (mainly in the European Union, Canada and Australia) the reduction of Greenhouse Gas emissions, as a consequence of the implementation, development, and operation of renewable energies in Exhibit II countries of the Kyoto Protocol (such as Mexico). The Mexican government executed and ratified the Kyoto Protocol, which was published in the Federal Official Gazette on November 24, 2000. Once the Kyoto Protocol is ratified by the number of parties required for it to become effective, its enforcement in Mexico will be immediate.

On January 23, 2004, an Accord creating the Mexican Inter-Ministerial Committee for Emission-Reduction Projects and Greenhouse Gas Capture (the "Committee") was published in Mexico's Official Federal Gazette. This Committee was established in order to submit the Mexican government to comply with the commitments acquired by the accession to the Kyoto Protocol.

The purpose of the Committee will be to identify opportunities as well as to simplify, promote, publish, evaluate and approve when required, emission-reduction greenhouse gases projects in Mexico. The Committee will also act as the Designated National Authority for purposes of the Kyoto Protocol. Furthermore, the Committee will be entrusted with the authority to issue letters of approval and keep record of emission-reduction and greenhouse gas projects.

The creation of the Committee is a significant step toward the development of an institutional framework for the certification of ERU's in Mexico. However, success of the Committee will depend on the creation of comprehensible and accessible policies to those parties interested in certifying their projects, and this is why this Committee must develop the regulatory framework to identify the scope and rights that the ERU's will have in the internal legal framework.

Once the Kyoto Protocol becomes enforceable, Mexico should have developed those institutions and legal framework that enables its companies to actively participate in the green market, in order to exchange ERU's.

Challenges and Opportunities

There are other alternative mechanisms currently under evaluation that aim to provide additional incentives for renewables. Among them, is the creation of a green market for the negotiation of carbon certificates. In addition, as a result of the involvement and participation of several entities and financial strategies, the motivation for pollutant emission-reduction projects such as renewable energy sources has been extended.

Notwithstanding the slight distinction available under our legislation for renewable energy sources *vis-à-vis* traditional power generation technologies, and the limited number of instruments available under Mexican law to sufficiently promote and develop incentives required for the implementation of renewable energies, several mechanisms sustained by international treaties or non-governmental associations are anticipated. We will certainly find in the near future that the use of renewables is a common practice of electricity generation used in Mexico.

To promote the development and dissemination of renewable energies, it is necessary to create additional benefits or subsidy policies over those earnings received by independent producers arisen from the sale of electricity to distributors (CFE and/or LFC) and to develop tax incentives and governmental benefits for power producers under the self-supply or independent production schemes, which use renewable technology. Furthermore, the government should economically promote and support research and development programs for these types of technologies.

We have mentioned in this document that unlike conventional sources of thermal energy, most renewable energy sources are irregular. Nonetheless, renewable energies may highly contribute to the energy needs of a given system. It is true that renewables will not assume total responsibility for power supply, but in fact may have a proportional share of such responsibility in co-participation with the traditional technologies, thereafter conducting a strategic diversification that involves use and alternation of different technologies and sources.

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Challenges to Brazil's Alternative Energy Program

BY ANA KARINA DE SOUZA
(MACHADO, MEYER, SENDACZ, E OPICE ADVOGADOS - SÃO PAULO)

Investors representing wind, small hydro units ("PCH") and biomass projects applied until last May 10th for the qualification for the first stage of Brazil's Alternative Energy Incentive Program – PROINFA. The applications resulted in approximately double the 3,300MW that *Eletrobrás* shall purchase under PROINFA by May 31st, 2004 and prompt a reflection on some of the legal challenges involving a potentially growing market for alternative sources of energy in Brazil.

In accordance with Law No. 10,438/02, this market shall represent 10% of the annual consumption of energy in Brazil by 2022. Considering that currently only 0.03% of the annual consumption of energy corresponds to alternative sources of power, the implementation of aforesaid additional generating capacity in the following 18 years may be relevant.

The benefits arising from the qualification of alternative energy projects under the Kyoto Protocol and

the trading of carbon credits worldwide may also stimulate private investment in the area. However, it is important that the Federal Government provides clear rules on the issue, especially in indicating whom shall be entitled to those credits and whether or not they will affect the price of energy contracted under the power purchase agreement ("PPA") with Eletrobras.

Furthermore, the physical connection of the projects to the Brazilian power grid should be carefully analyzed, as the execution of the PPA does not guarantee immediate access by the selected projects to the transmission and distribution grids.

The access reports, to be issued by the National System Operator ("ONS") within 30 days after the execution of the PPA, will evaluate the effective feasibility of the projects to connect to the Brazilian power

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Environmental legislation and the Kyoto Protocol have incorporated provisions for the development of a regulatory framework that promotes use of renewable energy in Mexico. The government's administration has certain regulatory tools and policies to promote use of technologies that reduce environmental pollutant emissions, such as renewables. These legal schemes could consist of tax benefits, preferential finance conditions through development banks, preferential provisions for acquisition of renewable energy by state owned entities, benefits for the importation, exportation, and/or development of equipment required for implementation of renewable energy projects, enactment of certification guidelines and purchase and sale of carbon credits.

Endnotes:

- (1) Fossil fuels are those that were formed on Earth hundreds of thousands of years ago from decaying plants and animals. Among the more common fossil fuels are oil, coal and natural gas.
- (2) Gases including Carbon Dioxide (CO₂), Methane (CH₄), Nitrogen Dioxide (N₂O), Hydrofluorocarbons (HFC), Perfluorocarbons (PFC) and Sulfur Hexafluoride (SF₆).
- (3) *Ley General del Equilibrio Ecológico y la Protección al Ambiente* - General Law of Ecological Balance and

Environmental Protection, section III, article 22 Bis. Mexican Federal Official Gazette, January 28, 1988 (Mex.).

(4) Id, section III, article 166.

(5) Additional power energy originated from other source different than its own supply source, same which is delivered at a given consumption center by means of an ordinary electricity supply agreement.

(6) Rate that indicates the capacity actually used in the power generation units and is calculated as the result of dividing the real average power capacity during a given period of time and its total effective power capacity.

(7) One unit of certified emission reduction is equal to a Ton of Carbon Dioxide or its equivalent in any other kind of emission of greenhouse gases.

(8) In accordance to the provisions of the article 133 of the Federal Constitution.

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grid based on the minimum total cost of the investment. It means that projects presenting the smallest total cost of investment in connecting facilities and requiring fewer improvements in the transmission and distribution grids shall be a preferred option. In case of a dispute between two projects, the one with the oldest environmental installation permit shall prevail.

However, if technically and economically feasible, the projects shall be able to share connection facilities. This will require an agreement on the obligations relating to their implementation and operation, including liabilities with any third parties arising from those obligations.

It is important to emphasize that ANEEL will play an important role under PROINFA. In addition to deciding, at an administrative level, potential controversies arising among power agents, and granting generating licenses, it shall also cooperate with Eletrobrás when supervising the compliance by the agents with their obligations under PROINFA.

The contractual requirement that power agents maintain their legal, economic and technical qualification under PROINFA rules during the 20-year term of the PPA deserves a careful analysis. Because the qualification as an autonomous or non-autonomous agent under PROINFA implies the existence or lack of corporate relationship with power concessionaires, it should be evaluated whether

private investors should not be hindered from modifying their corporate structure if impacting aforesaid qualification for a 20-year term.

Additionally, investors should consider that public law rules shall apply to the PPA, which means that Eletrobrás shall have certain prerogatives such as unilateral termination upon indemnification to the generation agent, and that the initial economic and financial balance of the contract will be guaranteed, including upon review of the price of energy in case unpredictable events effectively impact the costs initially predicted by the private investor.

Finally, the possibility of periodical reviews of the amount of energy contracted under the PPA, based on technical information relating to the plant, including internal consumption and forced and scheduled stoppages, shall also be considered by private investors.

It is expected that the first stage of PROINFA will contribute to the strengthening of a solid regulatory and contractual framework which will allow the successful construction of power projects based on alternative energy sources in the next 18 years.

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