Assessing The Resurgence in Latin American Power: Contrasting Mexican Power Projects With Brazil's New IPP Program

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TAYLOR-DEJONGH

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Financial Advisory Mandates: 2004

Global By Value

Rank	Firm
1	**Taylor-DeJongh**
2	PWC
3	KPMG
4	Macquarie Bank
5	UBS Investment Bank

Latin America by Value

Rank	Firm
1	**Taylor-DeJongh**
2	PWC
3	KPMG
4	Dexia

Power by Value

Rank	Firm
1	**Taylor-DeJongh**
2	Macquarie Bank
3	Citigroup
4	BNP Paribas
5	ABN AMRO

Source: *Infrastructure Journal* League Tables, 2004

Investment in Latin American Power Generation

Forecasted Investment Requirements in New Generation

2005-2010

Latin America:	US$68 billion
Mexico:	US$25 billion
Brazil:	US$18 billion

Source: U.S. Energy Information Administration, International Energy Agency, World Bank

Overview: Brazil & Mexico

- Brazil and Mexico are the most attractive power markets in Latin America, due to:
  - Size of markets
    - Brazil: 76 GW (2002)   Mexico: 37GW
  - Long-term demand growth
    - **Brazil: 100 GW by 2010 (21 GW in new capacity)**
    - **Mexico: 76 GW by 2010 (39 GW in capacity additions)**
  - Relatively stable macroeconomic environments*****
    - **Mexico: BBB**
    - **Brazil: BB-**
- Mexico and Brazil's power markets present different risk-reward propositions, and have had different success in attracting private capital.

** S&P Ratings*

Overview: Brazil & Mexico (cont.)

- *Mexico:* Tight supply-demand conditions, CFE absorption of key commercial risks, and investors appetite for Mexican sovereign risk in the form of state-owned CFE credit risk have led to significant IPP investment.
  - 5.1 GW of new capacity reflecting US$2.26 billion in project debt came online between 2002 and 2004.
  - Lenders portfolio risk allocations may require new sources of capital to fund need for new capacity.

- *Brazil:* Very limited private investment in generation since the energy rationing period of 2001-2002 and subsequent oversupply conditions (excess supply expected to last through 2007).
  - Only US$337 million in generation project debt arranged in 2003.
  - The 'New Electricity Model' enacted in 2004 is an attempt to lower risk for IPP investors.

Brazil

Brazil: Supply-Demand Outlook

- Significant power shortage forecasted for 2007-2008 and thereafter by ONS, the national grid operator, if capacity additions are not expedited.
  - With healthy economic growth (5% in 2004, 3.5% in 2005*), Brazil will need 3 GW of new capacity to come online annually starting in 2008.
    - Allowing for lead time, annual investment decisions of US$ 3-4 billion need to be made starting in 2005.
  - Authorized new capacity slow to come online due to licensing and permitting delays, environmental challenges.
  - An estimated 18.8 GW of projects (15.3 GW hydro, 3.5 GW thermal) currently held up at initial stages of development.

*Estimated

Brazil: New Power Sector Model

- March 15, 2004: President Lula signed legislation supporting the New Electricity Model.
  - Aims to expand generation capacity by promoting long-term PPAs between generators and distribution companies with a regulated pool as the 'Single Buyer' intermediary (regulated contracting).
  - Regulated pool to purchase power via auctions that blend cheaper hydro power with more expensive thermal generation and offers a single price for distributors.
  - New federal agency to forecast medium and long-term demand for 'Single Buyer' auctions.
  - MAE, the spot market created in 2000, is eliminated.
  - Lowers restrictions for consumers, brokers, and generators to directly and freely negotiate contracts (unregulated contracting).
  - Full authority over generation and distribution concessions returned to Ministry of Mines and Energy from ANEEL, the federal power sector regulatory body.
  - Tighter restrictions on cross-holdings in generation and distribution.

Brazil: Key Financing Issues

- Long-term PPAs and greater certainty on market rules are improvements.
- An efficient, competitive ‘Single Buyer’ model will require transparency.
- Unclear whether new market rules will support economics required by private capital:
  - The first auction for uncontracted surplus energy did not yield prices that would support private investment in state of the art gas-fired generation (R$ 50-70/MWh or US$ 20-26/MWh).
  - Auction for new capacity to be held in 2005 for supply starting in 2008 (contract terms ranging from 15 to 35 years).
- FX indexation issue remains unresolved.
- IPP exposure to ‘Single Buyer’ credit risk and, by extension, to Brazilian sovereign risk.

Brazil: Key Financing Issues (contd.)

- Role of State-Controlled Enterprises
  - Decision by Petrobras to challenge its obligations under commercial contracts with Macae (El Paso) and MPX gas-fired projects has weakened investor confidence.
  - Petrobras' natural gas supplier monopoly is a potential barrier to new gas-fired IPPs.
  - Eletrobras, the state-owned generation and transmission holding company, is set to expand its role in generation and may crowd out private sector investors.
    - Recently announced plans to invest US$1.7 billion/year in new capacity starting in 2006.
  - The Government is also likely to rely on BNDES, the national development bank, to provide financing for competing projects, both under development as well as massive hydro projects that have been proposed (e.g., 11,000 MW Bel Monte project in the Amazon and the 7,000 MW Rio Madeira project on the Bolivian border).

Mexico

Mexico: Supply-Demand Outlook

- Estimates call for doubling of generating capacity by 2010 from 37GW to 76GW.
  - 3.1 GW of new capacity on-line in 2003.
  - 3.2 GW of new bids awarded, all natural gas combined cycle.
- 64 units planned of which 43 are to be combined cycle.
- Expanding natural gas market:
  - 2002 Environmental standards required fuel switching from fuel oil to natural gas.
  - Gas plants expected to provide 58% of total generation by 2011 resulting in increased infrastructure spending to import natural gas.

Mexico: Natural Gas Demand

Year	2001	2005	2010
Total Demand (MMCFD)	4,665	7,288	9,451
Domestic Supply (MMCFD)	4,181	5,491	7,551
Imports (MMCFD)	483	1,797	1,900

- Domestic Gas Demand expected to increase by 8.1 % per year until 2010
- Domestic Gas Production expected to rise by 6.3 %
- Natural Gas Imports currently all come from the US
  - Aggressively developing LNG import capacity

Source: Secretariat of Energy, Mexico

Mexico: Meeting Demand for Natural Gas

- PEMEX aggressive expansion
- Awarded LNG:
  - Altimira: 177 Bcf/year
  - Costa Azul: 1 Bcf/d
  - Coronado Islands: 1.4 Bcf/d
  - Lazaro Cardenas: 141 Bcf/yr
  - Tijuana Regional Energy Center: 750 Bcf/d, 1,200MW NGCC, 2 MGD desalination facility.
- Historically PEMEX investment program is behind schedule and funded below true cost.
  - Mitigated by j/v with market-based sponsors for building LNG and pipeline systems.
- Importing of LNG could create price increases and volatility; supplies may be pegged to South Texas prices.

Mexico: Key Financing Issues

- Changing Environment:
  - Shifting of fuel risk to IPP
    - IPP procures fuel from PEMEX, the only natural gas and oil supplier.
    - CFE contracts for power under a PPA following a competitively bid process

- Risk to IPP of Contractual “mismatch”:
  - Assumptions made for fuel price & delivery terms may not be accurate.
  - IPP used to be economically indifferent to CFE dispatch, however, de-linkage of fuel procurement with PPA may result in take-or-pay structure with PEMEX during periods of curtailment from CFE (familiar market risk in US, but not dealing with sovereign entity on both sides of equation).

Mexico: Key Financing Issues (contd.)

- Long-term continuation of investment program may be limited by:
  - Banks' internal exposure limits to CFE credit risk.
  - CFE's ability to incur new fixed price obligations.
  - CFE's desire to continue to absorb commercial risks.

- Regulatory risks
  - Regulation of Electricity Law intended to promote private participation challenged Congress and overturned by Supreme Court, questioning the constitutionality of the IPP scheme. May be revisited.

Conclusions

Conclusions

- *Brazil:*
  - State involvement in power generation is likely to grow not only as a regulator, but also as sponsor and lender. However, it is unlikely that Brazil will be able to meet future demand for electricity without private capital.
  - New market rules have improved project financing outlook. Pending evidence of better economics and lower financial risk, international investors are likely to adopt a 'wait and see' approach.
  - Sources of funding likely to come from the bank market with strong ECA and MLA involvement.
- *Mexico:*
  - Will need more flexibility and require additional sources of financing.
    - Capital markets will need to be more active.

Conclusions (contd.)

- Brazil and Mexico remain the most exciting power markets in Latin America.
  - Investor interest is expected to remain strong over the near term in Mexico.
  - Investors will look to the medium term for attractive opportunities in Brazil.
- Following the crisis of 2001-2002, Brazil has adopted a new unbundled power sector model with a heavier state presence. It remains to be see if new rules will provide the basis for private investment in generation that Brazil will need to meet demand in 2008 and beyond.
- Mexico has had more financing success, but has made less progress in unbundling and allocating key commercial risks to the private sector with a central control of the electricity sector through CFE. With increased needs for infrastructure improvements for the electricity sector, partial deregulation may become a necessity (such as cogeneration, inside-the-fence self-generation).
- Early involvement of financial advisor can be critical in ensuring efficient financing process subsequently.

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