The Evolving Geopolitics of Natural Gas in Venezuela and Bolivia

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South America

• Not a major player in world of natural gas
• Is Developing Pipeline and LNG export capacity
• Is attracting DFI for natural gas projects
• Regional Market potential
• Geopolitics impact integration of regional and global gas markets
Gas Geopolitics in South America

• Foreign Policy issues
  – Gas as bargaining chip

• Projection of domestic issues into international relationships
  – Energy Security
    • Supply domestic market first
      – Peru – new field
    • Domestic supply at low prices
      – Argentina – existing fields
Map 2 South America's natural gas reserves (1 January 2002) and 2001 production

IEA, 2003

South American Gas - Daring to Tap the Bounty
IEA, 2003
Venezuela

Map 12: Venezuela’s natural gas basins

Source: PDVSA.
Venezuela

- Slow to develop gas resources (200 tcf proved)
- Import from Colombia, but expect export next year
- Trinidad & Tobago border issues resolved
- 3 basins to be tapped
  - Chevron in Deltana
- New legislation in the works – a la petroleum
  - Retroactive?
  - But who cares?
Elections in 2012 will drive search for investments

- 2010 power & food shortages
- 2010 Legislative elections opposition gains
- 2012 Presidential elections
## Final Destination of Bolivian Gas Production (2009)

<table>
<thead>
<tr>
<th>Market</th>
<th>MMccmpd</th>
<th>% of Total</th>
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<tbody>
<tr>
<td>Destined for São Paulo, Brazil (GSA)</td>
<td>23.40</td>
<td>63.7%</td>
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<tr>
<td>Destined for Bolivia’s Domestic Market</td>
<td>6.69</td>
<td>18.3%</td>
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<td>Destined for Argentina</td>
<td>4.66</td>
<td>12.7%</td>
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<tr>
<td>Destined for Cuiabá, Brazil</td>
<td>2.00</td>
<td>5.3%</td>
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<tr>
<td><strong>Total Bolivian Gas Production</strong></td>
<td><strong>36.75</strong></td>
<td><strong>100.0%</strong></td>
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<tr>
<td><strong>Total Bolivian Gas Production Capacity</strong></td>
<td><strong>43.72</strong></td>
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</table>

Source: YPFB
Bolivia

• Reserves situation in disarray
  – EIA 2007: 24tcf proven
    • Needs 12.7 P1 to fill domestic & foreign mkts 10 years

• Investments
  – down to $63.92 million in 2006
  – Virtually same as before Capitalization in 1990s.
### Bolivia: Natural Gas Reserves and Investment

<table>
<thead>
<tr>
<th>Year</th>
<th>Reserves P1+P2</th>
<th>Reserves P1</th>
<th>E&amp;P Investments</th>
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<td>1993</td>
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<td>5.53</td>
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<td>109.92</td>
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<td>1996</td>
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<td>6.82</td>
<td>99.03</td>
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<td>28.70</td>
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<tr>
<td>2006</td>
<td>48.70</td>
<td>26.70</td>
<td>63.92</td>
</tr>
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</table>

Source: Ministry of Hydrocarbons and CBH, 2006
• Domestic market issues
  – ‘industrialization’ been problematic
    • India-financed Mutun steel project
    • Power sector dominates, little household
      – Import LPG
    • Transportation

• Argentine market questions

• Chile issue