The Evolving Geopolitics of Natural Gas in Venezuela and Bolivia

David R. Mares

Baker Institute Scholar for Latin American Energy Studies

&

Director, Center for Iberian and Latin American Studies,

University of California, San Diego

Presented at the workshop "The Changing Geopolitics of Natural Gas" Baker Institute, Rice University March 17, 2011

Proved reserves at end 2009

Trillion cubic metres

8.06 S. & Cent. America	9.16 North America	14.76 Africa	16.24 Asia Pacific	63.09 Europe & Eurasia	76.18 Middle East

BP Global - Reports and publications - Statistical Review of World Energy 2010 -

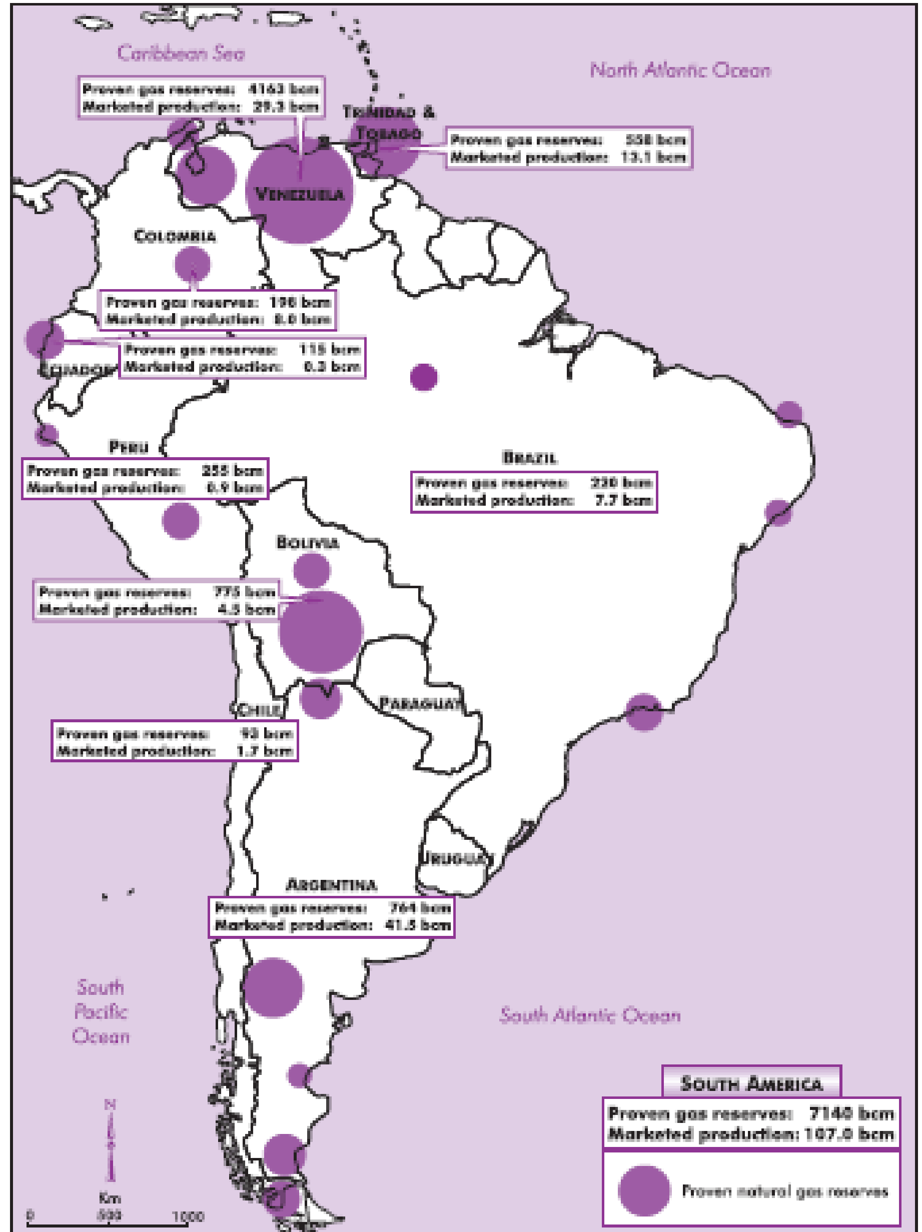
South America

- 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



Source: IEA.

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

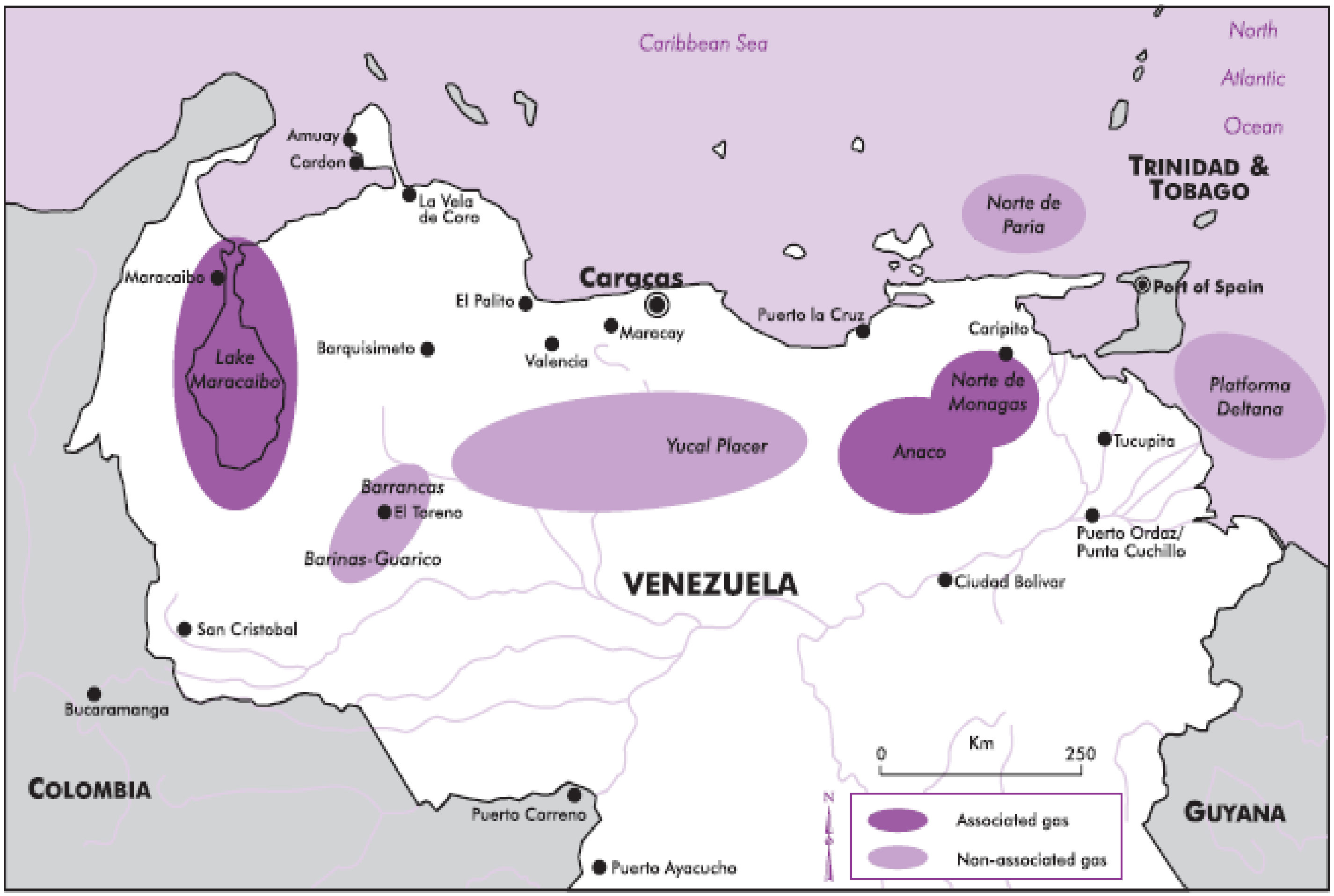
Gráfico Nº 6
Gasoductos en funcionamiento

Fuente: Modificado de CIER, 2006

"Estrategia Boliviana de Hidrocarburos"
Ministerio de Hidrocarburos y Energía
Septiembre 2008

Venezuela

Map 12 Venezuela's natural gas basins



Source: PDVSA.

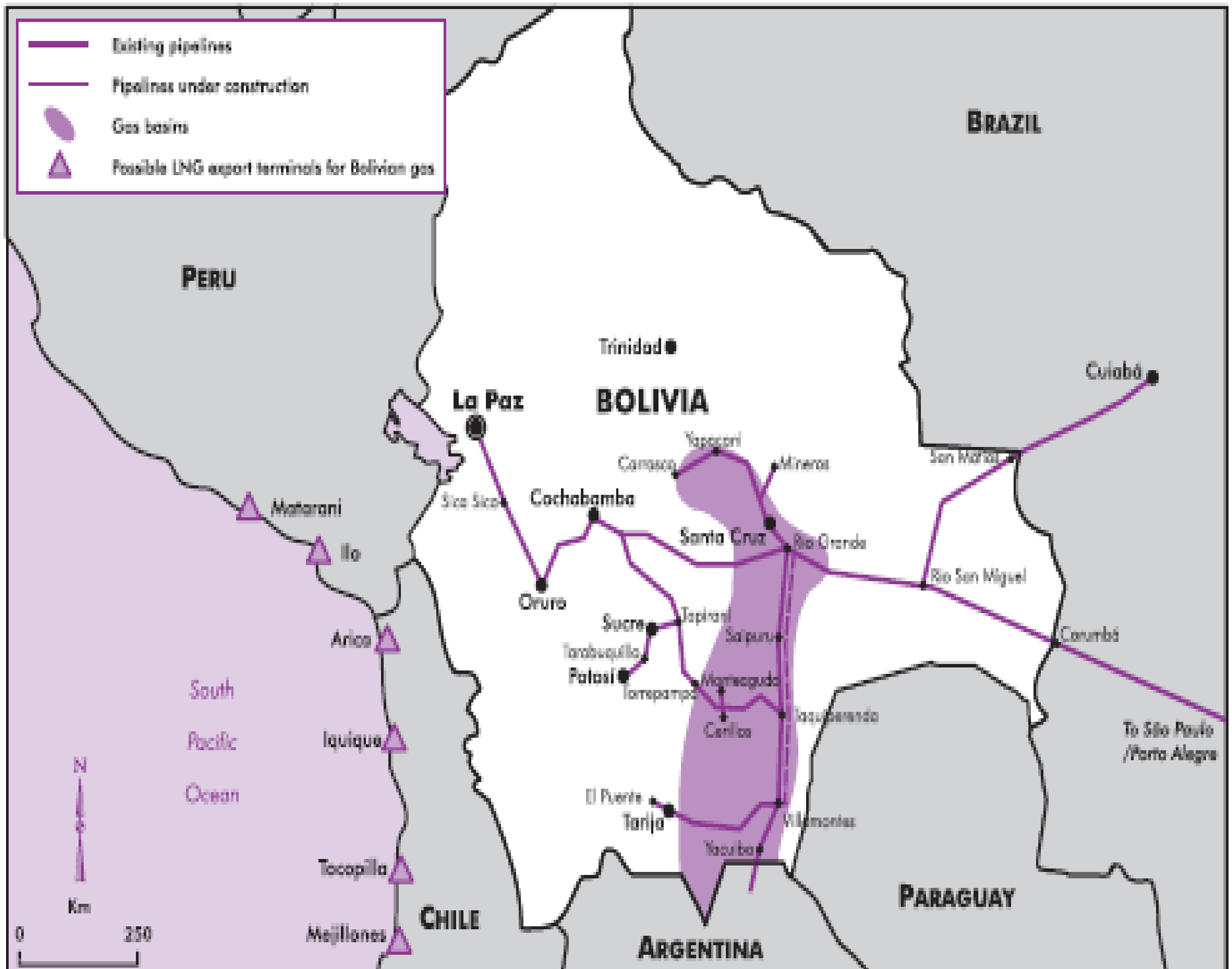
Venezuela

- 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

Map 9 Bolivia's natural gas basins and transmission infrastructure, 2002



IEA Report 2003

Source: IEA.

Final Destination of Bolivian Gas Production (2009)

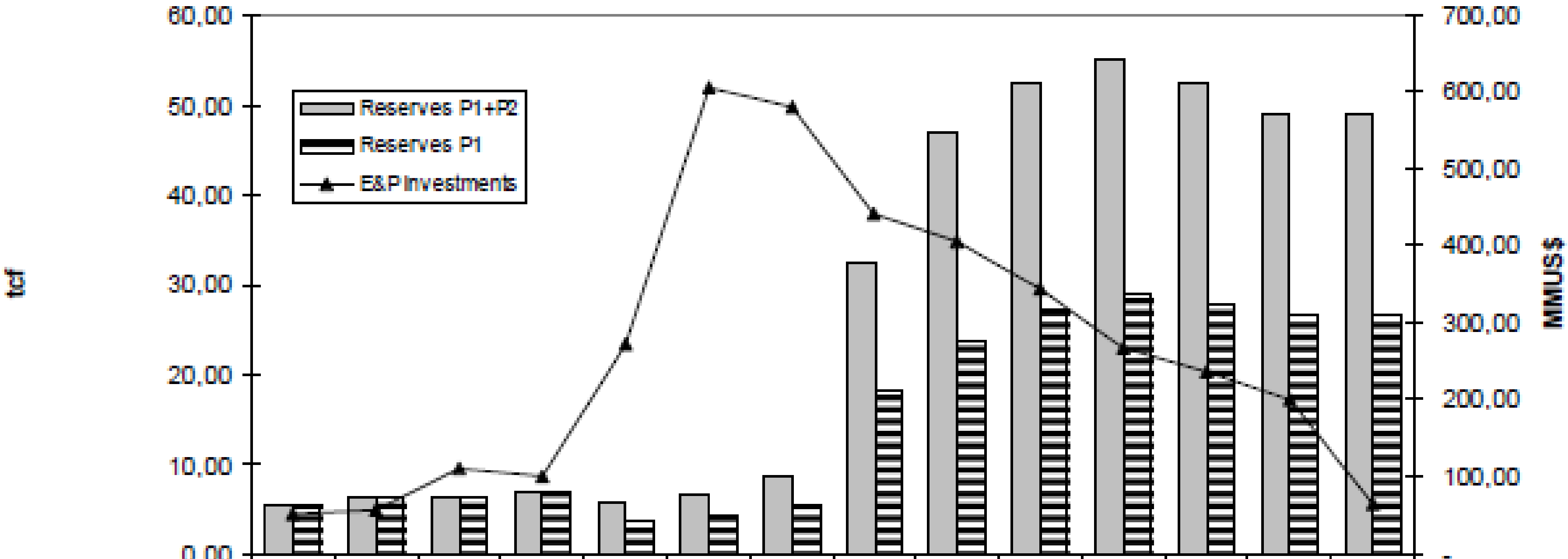
Market	MMcmpd	% of Total
Destined for São Paulo, Brazil (GSA)	23.40	63.7%
Destined for Bolivia's Domestic Market	6.69	18.3%
Destined for Argentina	4.66	12.7%
Destined for Cuiabá, Brazil	2.00	5.3%
Total Bolivian Gas Production	**36.75**	**100.0%**
Total Bolivian Gas Production Capacity	43.72	

Source: YPFB

Bolivia

- Reserves situation in disarray
  - EIA 2007: 24tcf proven
  - Ryder Scott 2010: rumored 9.7-13 tcf. P1 & P2
    - 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



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Reserves P1+P2	5,53	6,23	6,44	6,82	5,69	6,62	8,58	32,21	46,83	52,29	54,9	52,3	48,7	48,7
Reserves P1	5,53	6,23	6,44	6,82	3,75	4,16	5,28	18,31	23,84	27,36	28,7	27,6	26,7	26,7
E&P Investments	50,79	56,54	109,9	99,03	270,8	604,8	580,7	442,1	406,3	344,7	266,0	235,9	199,5	63,92

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