

**NATURAL GAS SUPPLY AND DEMAND BALANCE AND LNG IMPORTS IN SOUTH AMERICA:
A 15-YEAR OUTLOOK**

**ABSTRACT for the 6th ELAEE 2017, by Sylvie D'Apote and Agustin Castaño
(Prysm E&T and Prysm E&T/GEE-UFRJ)**

1. Overview

brief presentation of the topic including its background and potential significance

South America is a region well-endowed with gas resources. Proved gas reserves, which accounted for 4% of global proved gas reserves in 2014, are have been growing in the last decade --and this trend is expected to continue in the next decade-- due in particular to the large resources found off the coast in Brazil (Presalt) and the initial development of unconventional resources in Argentina and Colombia.

However, gas reserves and gas markets are unevenly distributed: Venezuela by itself holds ~70 per cent of South America's total proven reserves, while major markets are located in the Southern Cone.

Natural gas has a relatively recent history in South America. With the exception of Argentina, most countries only started to develop their markets in the 2000s. Gas market development in South America, and especially in the Southern Cone, required the construction of a number of very long gas pipelines in the 1990s and early 2000s: from Bolivia to Argentina and Brazil, from Argentina to Chile, Uruguay, and Brazil, from Colombia to Venezuela. However, large distances across a vast and relatively under-populated continent, as well as by formidable geographical obstacles such as the Andean cordillera and the Amazon forest have prevented the construction of an integrated regional gas network, and regional gas trade has remained limited to a few binational agreements and has never amounted to a real regional integration.

Meanwhile, the evolution of LNG trade and LNG regasification technology, have led several countries to look to the global market for their increasing gas needs, to complement domestic production and/or pipeline imports. Argentina, Brazil and Chile are now LNG importers, and additional regasification terminals are currently under construction or planned in these three countries and in Uruguay and Colombia.

LNG is no longer an emergency and short-term solution for the region. It is an essential part of the regional gas supply scenario, and will remain so for the years to come. However, how much more of a role it will have will depend on the evolution of the domestic production and demand in few key countries: Argentina, Bolivia, Brazil and Chile and Colombia.

2. Methodology

The paper will review the supply and demand balances in five key countries: Argentina, Bolivia, Brazil and Chile and Colombia, and for each country will present ranges of projections for domestic production and demand, based on existing government plans, companies' projections and our own economic models. We will give particular attention to the prospects for increased production in Argentina (unconventional gas) and Brazil (Presalt gas), as well as to Bolivia's capacity to maintain an exportable surplus.

The difference between domestic production and demand in each country will determine the need for imports (or availability for exports). Looking at the infrastructure, political and geopolitical situation in each country, we will assess if these imports (or exports) will be pipeline or LNG imports (or exports). Projects of new LNG regasification and pipeline projects will also be analyzed.

3. Expected results

The main result of the research will include projections of natural gas production and demand at country level, and a range of outlook for LNG demand over the next 15 years.

4. Conclusions

Based on the results of our projections, we will analyze the geopolitical consequences of the changing regional supply-demand outlook, both within the region and with the rest of the world.

5. References

Documents and statistics by national and supranational entities, sectorial associations, companies, academic institutions and research centers and well-known specialists, including:

Almeida, E. (2005). 'The Brazilian Natural Gas Sector'. In. Blanco, P. and Benavides, J. (ed.). Gas Market Integration in the Southern Cone. Washington DC: Inter-American Development Bank.

Almeida, E., D'Apote, S., and Fritsch, W. (2015) 'Natural Gas', in Fresco, F. and Pereira, E. (ed.) Latin American Upstream Oil and Gas: A Practical Guide to the Law and Regulation, London: Globe Law and Business.

ANP (2016). Monthly statistics available at: <http://www.anp.gov.br/>

BP (2015). *BP Statistical Review of World Energy June 2015*, <http://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy.html>

D'Apote, S., and Castaño, A. (2012). 'Geopolitics and Natural Gas in South America', in International Gas Union (IGU), *International Gas*, April-September 2012.

EIA (2013). 'Technically Recoverable Shale Oil and Shale Gas Resources: An Assessment of 137 Shale Formations in 41 Countries Outside the United States', June 2013, Washington DC.

ENARGAS (2016). Monthly statistics available at: www.enargas.gov.ar.

International Energy Agency (2003). *South American Gas – Daring to Tap the Bounty*. Paris: OECD/IEA.

International Energy Agency (2015). Country statistics (up to 2014) available at: <http://www.iea.org/statistics>

Ministry of Mines and Energy - Brazil (2016). 'Boletim Mensal de Acompanhamento da Indústria de Gás Natural'. Monthly bulletin available at:

http://www.mme.gov.br/web/guest/secretarias/petroleo-gas-natural-e-combustiveis-renovaveis/publicacoes/boletim-mensal-de-acompanhamento-da-industria-de-gas-natural?_20_displayStyle=descriptive&p_p_id=20

United Nations (2012). 'Jamaica: Rapid Assessment and Gap Analysis'. Sustainable Energy for All Initiative, http://www.se4all.org/wp-content/uploads/2015/05/Jamaica_RAGA.pdf

U.S. Energy Information Agency (2015). International energy statistics available at: <http://www.eia.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=5&pid=53&aid=1>

Viscidi, L. et al. (2015). 'Natural Gas Market Outlook - How Latin America and the Caribbean Can Benefit from the US Shale Boom'. Energy Working Paper, September 2015, The Dialogue, <http://www.thedialogue.org/wp-content/uploads/2015/09/Natural-Gas-Market-Outlook.pdf>

World Bank (2015). Statistics available at: <http://data.worldbank.org/indicator>

Yépez-García, R. A., and Dana, J. (2012) *Mitigating Vulnerability to High and Volatile Oil Prices: Power Sector Experience in Latin America and the Caribbean*. Washington, DC: World Bank.