

An energetic market

Clarisse Rocha, The EIC, USA, explores challenges and opportunities in South America's LNG market.

Draft

The last few years have seen South America emerge as one of the world's most dynamic markets for LNG development. The need to diversify away from industries such as oil and gas, the need to maximise domestic gas supplies for energy thirsty populations and the determination of gas rich nations such as Peru, Bolivia and Venezuela to export, has seen LNG become a key focus in the region. So much so that many experts predict that South America will become a net exporter of LNG in the future.

However many challenges remain to the industry's development. Competition with other resources remains a key issue, as do political issues and potential barriers to foreign investment. This article provides an overview of current challenges facing the sector as well as implications for UK companies considering investing and selling their products in a growing market.

LNG development in South America is determined by the internal situation within specific markets, the failure of the region to develop a regional gas pipeline network as well as a complex set of interdependent alliances between countries. Firstly, the intra-continental gas market in South America and the gas trade between various countries will be examined because the domestic situation in one country often affects neighbouring countries.

Argentina, Bolivia and Brazil

Over the past decade Bolivia, which has the continent's second largest reserves of natural gas, has become an increasingly

problematic partner in the provision of natural gas - so much so that it has bolstered LNG production in the region and encouraged countries, such as Brazil, Argentina and Chile, to invest in LNG import terminal projects.

Recurrent bouts of nationalisation and an unfavourable tax regime, fostered by Bolivia's left-wing administration, have sent out alarming signs to the industry, hampering initiatives to improve its underdeveloped natural gas producing infrastructure and hastening the needs of neighbouring gas importing countries to reduce their dependence on Bolivian gas. The result has been an expansion of LNG infrastructure in neighbouring countries. Brazil, for example, has built three LNG plants in the last couple of years, while Argentina has agreements with Venezuela to build a regasification plant in Venezuela.

Brazil caused concern to Bolivia in January when it declared that it would reduce its gas imports from the country by 30%. The initial decision to reduce imports was due to heavy rain, which boosted hydroelectric production. Brazil, which is now enjoying increased gas exploration through its subsalt plays and is turning off many of its gas powered thermal plants in favour of other energy sources (for example, hydroelectricity), is a potential issue for Bolivia, although recent announcements by Petrobras have seen an increase in Brazilian imports of Bolivian gas once again to 30 million m³/d.

The oil rich discovery from the Santos fields and the ability to meet domestic needs, however, remain a concern for Bolivia and it is not unfeasible that Petrobras will be exporting LNG once it has secured supply for the country. The company already

has two regasification terminals - one in Pecém in Ceará state and the other in Baía de Guanabara in Rio de Janeiro state capable of regasifying a combined 27 million m³/d. Two further terminals are planned: the third probably to supply the country's south eastern states is expected to be ready by 2012 or 2013 and a fourth terminal is expected to go online in 2013 or 2014. As well as developing its import infrastructure, Brazil is also looking into developing export facilities as well.

Argentina is also wavering in importing natural gas from Bolivia with other South American countries now providing alternatives. Argentina is currently considering an LNG facility although financing and access to credit is likely to prove a stumbling block at this current time.

The first LNG cargo delivered to South America arrived in Argentina in May last year with Repsol chartering an Energy Bridge Regasification Vessel (EBRV) thereby avoiding the large capital costs associated with developing an import terminal. Such a solution works well for Argentina as it can secure LNG supplies when demand is at its highest - normally when temperatures are coldest between May and August. UK business and consulting group, Mouchel was involved in all civil and marine design aspects of the project in delivering Argentina's first LNG cargo.

Venezuela, Colombia, Argentina and Brazil

Venezuela, holder of the largest gas reserves in Latin America, is becoming an important player in the development of the LNG industry both domestically and in other parts of South America.

The country, which has signed agreements with Total, Gazprom and Chevron, has recently invested in co-operation agreements with Argentina, Brazil and Colombia in gas related schemes. Venezuela's state oil company PDVSA has also signed temporary agreements to advance the formation of two joint ventures that will develop LNG trains. The first LNG train, with an annual capacity of 4.7 million t, will use gas from the Plataforma Deltana's Block 2. The second train, also to have an annual capacity of 4.7 million t, will use gas from PDVSA's Mariscal Sucre field.

The Chavez administration recently signed an agreement with the Argentinean president to build a US\$ 400 million plant to regasify gas imported from Venezuela. This is not the first time the country has engaged in initiatives with the Southern Cone. An ill-fated gas pipeline connecting much of South America was proposed at the start of the decade, but logistical and political problems have made the project so far unviable.

With regard to Brazil, PDVSA is also working with Petrobras in two liquefaction units in Venezuela. As for Colombia, although Venezuela is still importing gas through the bi-national pipeline connecting the countries, there are plans to reverse the flow as Venezuela's gas production increases.

Colombia's focus on offshore exploration could also see the country become an LNG exporter. Colombia's Agencia Nacional de Hidrocarburos predicts that there could be up to 30 trillion ft³ of natural gas in two large offshore exploration areas. With such reserves, there will be sufficient capital to develop gas liquefaction facilities to enable the export of gas via tankers to the USA Gulf Coast. Venezuela is also a potential market for Colombian LNG.

Uruguay, Argentina and Chile

Uruguay is currently enjoying a boost in its LNG industry. The country is studying the construction of its first LNG plant, which

would be built similarly to the Chilean Quintero LNG plant. The Montevideo terminal is expected to use a floating LNG tanker, although authorities are still discussing the plant's proposed capacity and it is likely to be operational by 2012.

The plant's capacity would cover only the domestic market, according to initial considerations by the government, which assumes that a plant with a greater capacity would mean selling gas to Argentina. Nonetheless, the Uruguayan state oil company, ANCAP has plans to build a regasification plant to serve both Uruguay and Argentina, taking advantage of an existing pipeline between both countries. The project is advanced, as a tender for consultancy services has already been launched. Argentina, meanwhile, is also continuing its supply of LNG to Chile, offsetting its recent lower demand internally.

And as for Chile, its LNG import terminal in Quintero Bay, led by the UK's BG Group, is predicted to have the capacity to generate 15 million m³/d of gas starting next year, according to the country's Energy Minister. BG Group is contracted to supply up to 1.7 million tpy of LNG to the Quintero terminal over a 21 year period. A key driver for Chile is to reduce its dependence on natural gas imports from Argentina, which are increasingly unpredictable. Last year, for example, saw Chile have to rely on expensive imports of diesel fuel due to Argentina cutting its gas exports.

In July, BG Group announced the delivery of the first ever cargo of LNG to Chile. The cargo, onboard the *Methane Jane Elizabeth* from BG Group's global LNG fleet, will be used to commission the Quintero LNG regasification terminal.

The power of politics

What conclusions can be drawn from the complex set of interdependencies, which characterise LNG production in South America? One result of the politics in the region is the increased importing of LNG to 27 billion m³/y by the end of 2012, according to the 2008 World Energy Outlook from the International Energy Agency (IEA).

In the report, the IEA stated, 'Although the region has plentiful gas reserves estimated at 7.7 trillion m³, the recent surge in producing countries of resource nationalism and government policies that discourage upstream investment has led some importing countries to turn to imported LNG from outside the region rather than rely on overland pipeline imports from neighbouring countries.'

The political differences between countries have also seen a failure to further develop natural gas flows across the continent through overland pipes. Although significant pipeline infrastructure links have taken place between countries such as Argentina, Bolivia and Brazil, the region is characterised by a series of failed proposals including a trunk line from Venezuela to Brazil, Argentina and Chile; a line from Peru to supply countries to the south; and significant expansions of Bolivia's capacity to Brazil and Argentina. The result is that future energy integration is more likely to be based on LNG terminals based on the coasts.

And as well as the regional markets, the potential for greater LNG exports to the Mexico, the USA and Canada is also huge with South America having the gas sources and proximity to be a key exporter. Furthermore, LNG from the region is likely to be more competitive due to lower shipping costs as opposed to LNG from Asia.

Peru - a model for LNG investment?

There are examples, however, of countries where LNG

development can be seen as model of international co-operation. One such example is Peru.

Latin America's first LNG export project is taking place in Peru as part of a US\$ 3.8 billion project, which includes financing from the International Finance Co-operation, part of the World Bank, the Inter-American Development Bank, the Export-Import Bank of the USA, Export-Import Bank of Korea, and SACE of Italy.

The project, which is expected to start up operations next year and which will see Peru become a net exporter of gas, is being developed by a consortium headed by US based Hunt Oil and includes Spain's Repsol-YPF, South Korea's SK Energy, and Japan's Marubeni Corp. It includes a liquefaction plant and a marine loading terminal on Peru's central coast, as well as a new 408 km pipeline that will connect to an existing pipeline network east of the Andes. According to the IFC, the project will also help generate significant tax and incremental royalty payments to the government, equivalent to over 1.5% of current state revenues.

According to Trade Finance Magazine, the project is 'a robust project finance deal that received vigorous backing in the market with an unprecedented number of senior lenders for a project finance transaction in Latin America.'

Foreign investment possibilities

So what are the foreign investment opportunities in South America's LNG market? There is no doubt that South America's liquefaction and import and export infrastructures still require significant development and remain at an early stage.

With this comes opportunities. Search EICDataStream, the EIC database that tracks the 7000 most important global energy industry projects, and there are a number of LNG projects of interest to the UK energy supply chain. The construction of an offshore port, an LNG terminal, and a thermoelectric power plant in Espirito Santo state, Brazil is a good example with the project currently at the planning stage. The fact that UK companies are involved in the region in LNG development, such as BG Group in Chile and Shell in Brazil, is also encouraging for UK investors.

However, there are clearly barriers to foreign investment with Venezuela being a prime example where recent planned natural gas investments in the Mariscal Sucre area with Shell and Petrobras having been abandoned. Part of the stumbling block for Petrobras was PDVSA's unwillingness to guarantee that a large portion of the gas would be exported as LNG.

The future

Despite the fact that the LNG sector has developed to a large extent due to the inability of countries to guarantee natural gas supplies and the delays in developing a regional gas pipeline network, there is no doubt that LNG development in South America represents an exciting new development. Watch this space! **LNG**

