

Myanmar's energy woes could be solved by LNG projects under current plans studied

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Myanmar's recent emergence from sanction-driven isolation has attracted attention from all over the world, including energy-hungry investors, and could see an LNG export project back on the agenda similar to one backed by Japan and South Korea but cancelled in 2007.

The nation could also become an LNG importer until it builds up its own energy resources through exploration to adequate production.

Myanmar is estimated to have 11-23 trillion cubic feet of natural gas reserves, and is currently ranked as the 10th largest gas exporter in the world.

However, as Myanmar's gas reserves have not yet been fully surveyed with modern seismic technology, it makes it both an exciting and challenging country for exploration.

Offshore

The country's current natural gas output mostly comes from the offshore gas fields, Yadana and Yetagan.

Gas production is expected to double, once the offshore gas fields Shwe and Zawtika commence production later in 2013.

However, over 80 percent of Myanmar's gas production has been marked for export to Thailand and China, under contracts signed during the nation's years of military rule. For a summary of Myanmar's key offshore gas projects see tables 1 and 2.

The Ministry of Energy is responsible for setting Myanmar's oil and gas policy.

The Ministry also has oversight of three state-owned enterprises: (i) Myanma Oil and Gas Enterprise (MOGE) which is responsible for oil and gas exploration and production, as well as domestic gas transmission through a 2,278-mile pipeline network; (ii) Myanma Petrochemical Enterprise (MPE) which operates refineries, fertilizer plants and a number of other processing plants; and (iii) Myanma Petroleum Products Enterprise (MPPE) which is responsible for marketing and distribution of petroleum products.

Prior to 1988, Myanmar's oil and gas

exploration and production was primarily undertaken by the MOGE.

Myanmar opened its doors to foreign participation in oil and gas exploration and production in 1988.

During the period from 1988 to 2000, 29 onshore blocks and 10 offshore blocks were awarded to foreign companies. In 2011, a further nine blocks were awarded to foreign companies.

To date, most of the foreign companies awarded blocks have been from Asia, with investors from China, Thailand, Singapore and India being the most prominent.

Western companies have taken an interest in Myanmar's hydrocarbon in the past, but many of those companies pulled out in the late 1990s because of US-led embargos, disappointing results in onshore oil exploration and difficulties in dealing with MOGE.

The easing of US sanctions, the changing political environment and growing concern over energy security have led many Western countries to reassess their investment strategy.

The launch of 18 onshore blocks earlier this year attracted stellar competition, with a total of 59 foreign firms pre-qualifying.

A further 30 offshore blocks will be open for bidding in June 2013 and is likely to attract even greater interest from Asian and Western counterparts.

LNG possibilities

Currently, all of Myanmar's natural gas which is not committed for domestic consumption is transported via pipeline to Thailand.

Once the Shwe gas projects comes on stream in the Bay of Bengal off the west coast of Myanmar, most of this gas will be piped to mainland China.

Prior to the implementation of the Myanmar-China pipeline, Myanmar considered various options to find an offtaker for the Shwe gas project.

One option was the construction of an LNG terminal and the shipping of LNG to South Korean company Korea Gas Corp. and Japanese company Marubeni, which emerged as the preferred bidders in a

YADANA PROJECT	
Concession and location	Blocks M5 and M6, Gulf of Martaban, Myanmar
Average Gas Production	800-900 mmcf/d
Current Status	Production
Partners	Total E&P Myanmar (31.24%; Unocal Myanmar (28.26%), PTTEP Internatioal Limited (25.50%); and MOGE (15.00%)
Operator	Total E&P Myanmar

Table 1: One of the key oil and gas offshore projects in Myanmar

SHWE PROJECT	
Concession and location	Blocks A-1 and A-3, Gulf of Martaban, Myanmar
Estimated Gas Production	500 mmcf/d
Current Status	Development (expected production date: mid-2013)
Partners	Daewoo International (51%); Korea Gas Corporation (KOGAS) (8.5%); ONGC Videsh Ltd. (1%); Gas Authority of India Ltd. (8.5%); and MOGF (15%)
Operator	PTTCP International Limited

Table 2: Another project which could yield adequate resources for nation

tender for 3.5 million tonnes per annum of LNG.

The project was cancelled in 2007 and there has been limited discussion of an LNG export project since then.

Although Myanmar has the potential to be a net LNG exporter in the long term, Myanmar currently is only able to meet about 50 percent of its current domestic demand for natural gas and almost 75 percent of the population has no access to electricity.

MOGE has indicated that although it will honour its existing agreements with China and Thailand, production from future oil and gas projects will be allocated first for domestic consumption.

There is a real concern that Myanmar could fall into the same predicament as other hydrocarbon-rich countries such as Nigeria, whose export-led energy policies have left the country's electricity sector in a shambles.

More recently, MOGE has publicly re-iterated its stand against exporting LNG in the near to medium-term term, mainly due to this critical domestic gas shortage.

However, even if all new oil and gas projects are diverted to domestic consumption, these projects are unlikely to come on stream until 2016-17.

Without adequate electricity, Myanmar

risks going the same way of other developing countries in the region who have been unable to avert their own energy crises, for example Bangladesh, and being unable to stimulate growth in the rest of the economy.

Regasification

While coal is one option, it is not the preferred choice from an environmental perspective for a country keen to learn from the mistakes of its neighbours.

LNG imports therefore provide a possible solution to Myanmar's current gas shortage.

Given the high capital costs and the long implementation period, construction of a land based LNG regasification facility is not a viable option.

However, there are opportunities for a floating storage and regasification unit (FSRU) to act as a stop-gap solution.

There are various ways in which such an LNG project can be structured, depending on the specific circumstances of the venture and the local laws and requirements. We examine two possible project structures.

Supply-side model

Under this model, the project company is responsible for the procurement of LNG and all necessary infrastructure including an FSRU to regasify the LNG.

The off-taker enters into a gas sales

either uses the gas itself or sells the gas further

‘To the extent that financing is required for any aspect of an LNG import project, it is essential that it is bankable, though laws in Myanmar are still in a state of flux’

agreement (GSA) with the project company for gas, but will not be responsible for the capital expenditure and operating costs of the FSRU, nor be concerned with the sourcing of LNG.

A recent example of such a structure can be found in Pakistan. The Sui Southern Gas Co. requested tenders for the supply of regasified LNG from suppliers willing to develop their own LNG FSRU and arrange their own supply of LNG.

The supplier must charter the FSRU and enter into an LNG SPA with another entity within its group (if it is a portfolio supplier) or from a third-party supplier for the LNG.

External financing raised by the project company is predicated on the robustness of the gas sales agreement.

Buyer-side model

Under this second model, the off-taker is responsible for purchasing LNG from a third-party supplier and chartering an FSRU to regasify the LNG.

The off-taker charters an FSRU and pays a fee to the operator of the FSRU to regasify the LNG. The off-taker then

downstream under a GSA to, for instance, a power project.

This model is similar to that being implemented in Jordan, in order to overcome shortfalls in gas supplies from Egypt.

In early 2013, Jordan’s Ministry of Energy and Resources selected Golar LNG Limited to provide an FSRU and launched a tender for supply of LNG equivalent to 150 mmscf/d.

It is expected that the LNG supply contract will be for an initial term of three to five years. Israel has implemented a similar structure and other countries such as the Ivory Coast are also considering long-term permutations of the structure with an added financing requirement for the purchase of LNG.

Key Issues

Notwithstanding which structure is chosen, there are issues which foreign participants on any side of the supply chain should consider before embarking upon such a project.

We highlight below some of the key considerations below for investors looking into the LNG space in Myanmar.

■ **Off-taker risk:** As with other developing countries, perhaps the biggest stumbling block for any investor is the capacity and credibility of the off-taker to make timely payments. In Myanmar, MOGE is mandated to deal with oil and gas offtake. If MOGE is the counterparty to any LNG SPA or GSA, then suppliers will want to be sure that take-or-pay provisions and credit support are available and implications are fully understood. Credit support can be in the form of a government guarantee or a form of standby letter of credit. However, the commercial banking system in Myanmar is also in need of a major overhaul and there may be challenges to obtain a letter of credit from a reputable financial institution.

■ **Poor downstream infrastructure:** Due primarily to lack of investment, Myanmar’s gas distribution network is very poor and in many parts of the country almost non-existent. The availability of reliable downstream infrastructure is critical to the success of any offtake relationship and therefore investors will have to consider who will bear the cost of developing this piece of infrastructure, as well as the timing of such development.

■ **Pricing of LNG imports:** There is currently no benchmark pricing mechanism for LNG in Myanmar or the Southeast Asian region. It is likely that pricing will follow the gas pricing structure, which indexes gas against US inflation rates and fuel oil prices. The current price that Myanmar exports gas to Thailand is about \$11 per million British thermal units. Discounting the future possible effect of shale on Asian LNG process, LNG prices in Southeast Asia have historically been around \$17 per MMBtu to \$18 per MMBtu.

■ **Expropriation risk:** Recent incidents of expropriation of LNG projects in Latin America provide a stark reminder to investors that this risk is real. In efforts to make Myanmar more attractive to foreign investors,

Myanmar passed a new Foreign Direct Investment Law in November 2012, to provide foreign investors with government guarantees against expropriation and moratorium. Although this may provide some comfort to foreign investors, we note that such protections under the law have yet to be tested.

■ **Project bankability:** To the extent that external financing is required to finance any aspect of an LNG import project, it is essential that the project is bankable. The laws and regulations of Myanmar are still in a state of flux and there is limited certainty with respect to offshore financing structures. This creates a real obstacle for many commercial lenders. Any project will need the strong support of multilateral agencies, such as the International Finance Corp. or the Asian Development Bank, before investors can feel adequately de-risked.

■ **Political stability:** The Myanmar government has certainly taken dramatic steps over the past year to open up the country and attract investment. While this has led to the easing or lifting of sanctions, there are still further reforms which are being undertaken. The next democratic elections are scheduled for 2015 and ethnic conflicts remain in parts of the country.

Conclusion

Myanmar has a population of 60 million, yet its electrification ratio is only slightly over 25 percent.

In order to sustain interest from foreign investors, it is imperative that an adequate supply of electricity be sourced, and quickly, before its lustre fades like many other emerging countries before it.

The successful implementation of an interim LNG import solution may be one of the answers to Myanmar’s energy woes. ■

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Figure 3: Example of supply-side integrated model for an LNG agreement

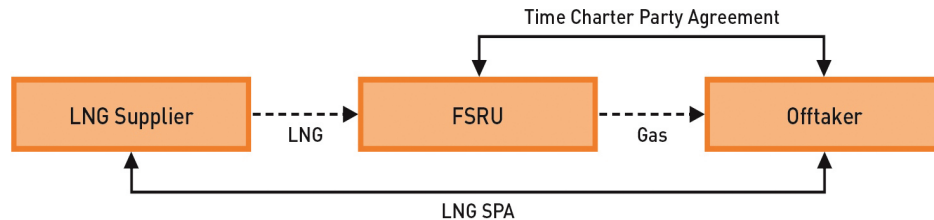


Figure 4: Example of buyer-side integrated model