

EASTERN MEDITERRANEAN: ADDRESSING GAS EXPORT CHALLENGES

The Eastern Mediterranean is a complex environment for gas producers and countries aspiring to become gas exporters in the next few years. Not only do they have to deal with the usual industry challenges, but they also have to manage with an even tougher factor: geopolitics. A recent report commissioned by the Norwegian government highlights such difficulties by indicating, among other things, that Israel constitutes a high risk for exporting gas. The report anticipates the country – which boasts the most developed oil and gas sector and the largest proven reserves among newcomers in the Eastern Mediterranean – will have more difficulty exporting its excess gas than, say, Brazil, Angola, or Mozambique. Cyprus faces similar difficulties. Its plans to build an LNG plant in Vasilikos are in doubt since such a plant would require more gas than what has been discovered so far in Aphrodite to justify the construction of this multi-billion dollar facility, although ongoing exploration in the Island's exclusive economic zone could result in the discovery of new gas fields.

On paper, the most reasonable way to monetize Aphrodite's (and part of Leviathan's) gas is through a pipeline to Turkey, a large market seeking to diversify its gas supplies. But this option is not feasible unless significant progress is made in the negotiations between Greek and Turkish Cypriots. A pipeline to Greece is not an easy feat and carries an exorbitant price tag. Egypt, with its large market and two underused LNG plants in Damietta and Idku could be an option, either to supply the local market or to liquefy the gas and export it to world markets. Both Israelis and Cypriots are negotiating potential deals with Egypt, suggesting there will be little capacity left for others to use, if these deals are confirmed.

In addition, and beside the network of regional pipelines connecting countries in the Eastern Mediterranean, two other options deserve to be highlighted.

Floating LNG (FLNG) is rapidly becoming a viable solution for offshore gas development, with four projects already in the construction phase and ten more in the design phase. The first examples, Petronas' PFLNG1 and Shell's Prelude, are expected to be operational by 2015 and 2017 respectively. Construction costs have not been disclosed but industry experts put the price of Prelude between \$10 and \$12 billion, more costly than a land based facility. However, costs

are expected to be slashed with experience and subsequent models are expected to require significantly less investments than an onshore LNG plant. When Australia's Woodside Petroleum attempted to acquire a stake in Leviathan, it did not hide its preference for a floating LNG facility. Negotiations collapsed in part because the Leviathan partners have changed their plans for the development of the field, focusing on supplying regional markets via pipelines during the first phase of the development. Studies are being conducted for the second phase of development, which, according to Noble Energy, the operator, is anticipated to be a floating LNG system.

Whereas the main advantage of LNG, floating or otherwise, is the flexibility it offers producers in terms of markets – allowing exports to further, sometimes more lucrative, destinations – a new technology, currently being tested, restricts exports to regional markets but offers producers a major benefit: The ability to develop offshore gas fields, which would have otherwise remained stranded for economic, geographic or geopolitical reasons.

Floating Compressed Natural Gas (FCNG), or marine transport of CNG, can be up to 40% less expensive than FLNG, compression being much simpler than liquefaction and thus much less costly. A first Coselle ship was approved for construction by the American Bureau of Shipping. But as with every new technology, the main challenge was to find a first client willing to make use of it. In July 2014, the Indonesian state-owned electricity company PT PLN ordered the first ever CNG carrier, which will be built in China, to transport gas produced in East Java to the island of Lombok. In August, Reuters reported that Morgan Stanley is looking to build and operate a compression and container loading facility, which will have capacity to ship 60 billion cubic feet a year of compressed natural gas and export it to countries in Central America and the Caribbean. The project is in doubt, due to increased hostility for banks' involvement in physical commodities, but the idea of marine transport of CNG seems to be making its way.

For Eastern Mediterranean countries, FCNG could be viewed as an economical option to monetize offshore gas fields that are too small to justify costly investments and where pipelines are difficult to implement. The compressed gas can be transported to markets within a 2,500 Km distance. From the Eastern Mediterranean, this puts markets in southern Europe within range.