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Unconventional Gas Development in Vietnam: Early Days in the Hanoi Trough

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SYNOPSIS

Vietnam's unconventional gas resource industry is in its infancy. Although the resource base for coalbed methane (CBM) and shale gas is unlikely to be very large, any additional domestic gas supply would be welcomed by the government as the demand for gas is growing very rapidly. The outlook for unconventional gas production in Vietnam will depend on the results of ongoing geological assessments and on the government's willingness and ability to put in place supportive measures.

KEY POINTS

- The Vietnamese government is keen to support the exploration and development of CBM and shale gas resources domestically in order to meet the rapidly rising local demand for gas.
- However, unconventional gas development is not a top policy priority for the government since exploration is still at a very early phase.
- In early February 2013, Mitra Energy signed a Production Sharing Contract (PSC) to explore for shale gas in part of the Hanoi Trough in northern Vietnam. Later in the same month, Eni signed a joint technical study agreement with PetroVietnam to evaluate the country's onshore unconventional gas resources.
- A key challenge for any gas producer in Vietnam is to negotiate an acceptable price with PetroVietnam.
- Other potential constraints to unconventional gas production include government capacity, the multiple roles of PetroVietnam, incentives for local governments, access to land, and the requirement of foreign investors to use a PSC that is more suited for conventional oil and gas operations.

INTRODUCTION

Nearly all of Vietnam's oil and gas production has been offshore, with the exception of some small gas fields in the north of the country which were brought onstream in the 1970s. The most promising area for unconventional gas is believed to be located in the Hanoi Trough, in the north of the country. Two foreign companies, Arrow Energy and Keeper Resources each held PSCs in the Hanoi Trough and drilled a small number of wells in search of CBM between 2008 and 2010. The wells proved the existence of CBM, but both companies decided to relinquish their licenses nevertheless. In February 2013, Mitra Energy - an independent oil and gas company based in Malaysia with portfolios across Southeast Asia - signed a PSC to explore for shale gas with 100 per cent working interest with PetroVietnam for Block MVHN/12KS which is located onshore in the Hanoi Trough. The block is 3,620 km^2 in size and is believed to be the first signed shale gas PSC in Southeast Asia. Later on, in the same month, Eni - the Italian multinational oil and gas company - entered into a joint technical study agreement with PetroVietnam to evaluate Vietnam's onshore unconventional gas resources.

At present, there is insufficient information to properly assess the resource potential and the geological and technological challenges that will be faced in exploiting CBM and shale gas in Vietnam. The World Shale Gas Resources report released by the US Energy Information Administration and prepared by Advanced Resources International Inc. in 2011 and updated in 2013, did not cover Vietnam. As it is still early days and prospects remain unclear, unconventional gas development is not considered a top priority for the government. For the same reason, the government has not yet set any targets or provided any forecasts for unconventional gas production.

ANALYSIS

Government Strategies for Promoting Vietnam's Gas Industry

In 2013, Vietnam's domestic production of natural gas of 9.8 billion cubic metres (bcm) matched the country's demand exactly. With demand continuing to rise, the government announced in its Gas Master Plan released in 2011 (Decision No. 459/QD-TTg) an annual production target of 15-19 bcm for the period 2019-2025. The Gas Master Plan also states the intention to encourage foreign investment, improve economic incentives and expand the gas pipeline network.

The amended Petroleum Law issued in 2008 (Law No. 10/2008/QH12) by the National Assembly explicitly mentions CBM and encourages foreign investment in its exploitation. Although shale gas is not mentioned in the law, the signing of a PSC by Mitra Energy implies that shale gas exploration by foreign companies is also encouraged.

Institutional Constraints

The development of the oil and gas industry in Vietnam is constrained by the structures and systems deployed to govern the sector. In particular, three key institutional constraints will impact unconventional gas development. First, the relevant government offices are said to be understaffed and many officials lack the knowledge to understand the different operational and financial requirements between conventional and unconventional gas explorations. For instance, observers have pointed that the Exploration and Production (E&P) Department, which is under the General Directorate of Energy (GDE) of the Ministry of Industry and Trade (MOIT) plays a key role in upstream regulation but has only five officials, including a Director and Deputy Director. Given the limited manpower, the E&P Department is mainly preoccupied with the more pressing priorities of the conventional oil and gas industry, which means that there is less time for addressing the specific regulatory challenges facing unconventional gas operators.

Second, Vietnam's national oil company PetroVietnam, takes on a combination of commercial and non-commercial roles, thereby affecting its performance as an oil company and adding to the cost of doing business for foreign companies. While it operates as a key commercial actor along the full gas supply chain and is designated as the required local partner for all PSCs, it also takes on a number of regulatory roles including the granting of resource rights, selection of service providers, negotiation of gas prices and provision of access to pipelines. Such conflicts of interest add another layer of uncertainty for foreign investors worried about PetroVietnam's non-commercial objectives and obligations.

A third potential constraint that may become apparent if onshore development of unconventional gas picks up is the weak incentives for provincial governments to support these activities. This is because there is no direct link between the value of the resources extracted in a province and the budgetary revenue of that province. Conventional oil and gas developments in Vietnam have been largely offshore and therefore, outside the jurisdiction of provincial governments and away from local communities. In contrast, unconventional gas development takes place onshore, which means that provincial governments and local communities will have to be consulted in such operations. In a consensus-based society such as Vietnam, this will add to the transaction costs of operators as more time and financial resources must be invested to cultivate relations at the local level. Policy-wise, the central government will need to develop direct incentives for local authorities and communities so that operators can carry out their activities smoothly.

Set against these constraints is an innovative provision within the amended Petroleum Law. This gives considerable discretion to the Vietnamese Prime Minister to decide on a number of issues, the key ones being:

- The types of investment projects to be encouraged;
- The use of a contract form other than a PSC for foreign investment;
- The choice of contractor through direct contracting rather than open bidding;
- The areas to be offered for exploration and development;
- Approval of the extension, suspension and transfer of contracts.

Gas Pricing, Infrastructural and Equipment Constraints

Possibly the most serious constraint to the development of natural gas resources of any type in Vietnam is the condition of the domestic gas market. In 2009-2010, prices paid for gas delivered onshore from off the southeast coast varied from less than US$2/mmBTU to more than US$3/mmBTU, whilst production from the far southwest received prices as high as US$6-7/mmBTU. The price paid for gas by power stations at this time lay between US$3 and US$4.50/mmBTU. By 2013, prices had risen slightly to US$3-5/mmBTU paid by power stations and fertiliser plants, and to about S$10.50/mmBTU paid by industrial users.

Until now, the price paid to the producing company has been negotiated on a field-by-field basis between PetroVietnam and the producing consortium. The price which the government is prepared to pay is itself constrained by the low level of electricity prices as well as the government's inability and unwillingness to subsidise the producers. The often prolonged period required for price negotiation, as well as concerns over the profitability of the business have affected the investment sentiments of some foreign companies. For example, Chevron decided in November 2013 to sell its interest in a Vietnamese offshore natural gas field having failed to reach an agreement with PetroVietnam on the gas sale price despite years of negotiation. To address this problem, the government is reviewing the current gas pricing system.

Another major constraint relates to gas transportation infrastructure. The onshore pipeline network is very limited in extent, but is best developed in the Hanoi Trough where CBM and shale gas prospectivity is seen to be most favourable. Nevertheless, the pipelines need to be upgraded, as acknowledged in the Gas Master Plan. There is also a lack of regulations providing for third-party access to pipelines.

A final difficulty arises from the absence of specialised onshore drilling and gas production equipment in Vietnam. This is because the country lacks the experience of onshore gas exploration and production, let alone unconventional gas. It also lacks the manufacturing capacity for such specialised equipment. For example, Arrow Energy had to bring a drilling rig from Thailand for its CBM operations.

Incompatible Nature of the PSC

Foreign operators are essential for the development of unconventional gas in Vietnam because PetroVietnam lacks the expertise, as does the state-owned coal mining company, Vinacomin. There are also no comparably qualified Vietnamese private exploration companies. However, foreign operators face a number of constraints that are inherent in the nature of the PSC in general and in the specificities of Vietnam's revised model PSC (Decree No. 33/2013/ND-CP) issued in April 2013, which applies to all contracts signed after 8 June 2013. This may deter potential investors from entering Vietnam. The key features that are inappropriate for unconventional gas development include:

- The distinct phasing of exploration, development and production;
- Ambiguity concerning the treatment of pilot production;
- The requirement for the operator to relinquish acreage according to a fixed timetable;
- The local content requirements for services and equipment;

- The right of PetroVietnam to unilaterally terminate the PSC without compensation on a number of grounds that do not take into consideration the nature of unconventional gas operations.

Land Access Issues

The areas which are likely to be most ideal for unconventional gas development are generally low-lying, densely populated and intensely agricultural. The Hanoi Trough which is the main area of interest for now is the country's key rice producing area. Land is not privately owned and Vietnam's national law allows for the compulsory acquisition of land from current users for projects that have socio-economic development purposes. However, the compensation paid is set by the local governments and is usually below market rates. This practice has resulted in hundreds of thousands of complaints in recent years, many of which have led to local discontent and unrest.

The early CBM exploration projects carried out in the Hanoi Trough did not appear to encounter any such problems, but the government did take time to reach a settlement with the local land users which added to the operators' transaction costs. It is important to note that these were just short exploration programmes of limited extent. A sustained production programme which will be larger in scale will likely encounter greater difficulties.

Progress and Policy Developments

The signing of agreements with Mitra Energy and Eni in February 2013 indicates that foreign investors have some interest in Vietnam's unconventional gas resources. Transforming this interest into substantial investment will not only require positive technical results from these ongoing studies, but also government action to implement proposals itemised in the Gas Master Plan and to issue a revised model PSC suited to CBM and shale gas development. In the absence of these formal steps being taken, the success of unconventional gas development will depend on the Prime Minister's willingness to use his discretionary powers to facilitate progress.

WHAT TO LOOK OUT FOR

- Mitra Energy's drilling operations and Eni's ongoing study will likely provide useful information on Vietnam's potential for unconventional gas production.
- The willingness of the Prime Minister to use his discretionary powers to accelerate unconventional gas development, especially if commercially viable potential reserves are discovered by either of these companies.
- Whether the government starts to push ahead with its intended policy reforms outlined in the Gas Master Plan, notably relating to gas pricing, and make significant changes to the prevailing model PSC.
- Whether the government initiates a policy consultation process to address issues relating to land access, community engagement and relations with the local government, so as to facilitate large-scale exploration operations.

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This brief is part of the Energy Studies Institute's project on non-geological constraints on unconventional gas developments in East Asia. To learn more about this research, visit the ESI website.