

Indonesia Sets Its Sights On Developing Shale-Gas, CBM Resources

Indonesia is one of the largest oil and gas producers in Asia, and it is aiming to become a major international player in [shale](#)-gas production.

Though it is no longer a net exporter of oil, Indonesia is a leading exporter of natural gas and coal, according to the U.S. Energy Information Administration. In recent years, Indonesia's oil production has declined as older fields play out and new projects fail to replace them.

In the eyes of the Indonesian government and BPMigas, the country's upstream oil and gas regulator, [shale](#) gas is the future. Indonesia is currently facing a significant gas-supply deficit, and government officials are betting that the development of shale gas will help resolve the problem of dwindling oil revenue.

Evita H. Legowo, Indonesia's director general of oil and gas, says the nation welcomes foreign investors. Indonesia has plans to auction shale-gas fields by the end of the year; yet, it may take about six years of exploration to prove the resources, she said.

While the government is welcoming, logistical problems exist. The biggest challenge facing the oil and gas sector is a lack of available infrastructure to support distribution and commercial exploration, Legowo says, adding that major production sites are located in areas situated far from the electricity-grid network and the main population centers of Java.

Legowo agreed to participate in this exclusive question-and-answer session, which was arranged by Lucky Nurafiatin, Hart Energy's Asia and Middle East manager of consulting.

Hart Energy: A study by the Bandung Institute of Technology found that Indonesia holds **1,000 trillion cubic feet (Tcf) of shale gas reserves**. Considering that Indonesia faces a severe gas-supply deficit, what is being done to promote the production of shale gas?

Legowo: The long-term energy mix stated in presidential regulation No.5/2006 describes the current and future (2025) composition on the use of energy. We will reduce the oil share to less than 20% of our energy mix by 2025. At the same time, the gas share will be more than 30%. The remainder will be contributed from renewable energy including biofuel, geothermal, coal liquefaction and others (CBM and unconventional gases, biomass, nuclear, hydro-power, solar and wind power). Shale gas, as one of the undeveloped resources in Indonesia, becomes one of the future national projects to reduce the deficit.

Hart Energy: Indonesia has announced plans to auction shale gas fields toward the end of 2011. What kind of interest has this created, and who has expressed interest? Would you share information about field numbers and locations? And how do unconventional resources fit into the overall economy of the nation?

Legowo: In the current position, we are struggling to finish regulations that would fit the industrial and regional climate of shale-gas development. These would be the milestones for further projections. There are

some indicative shale gas resources spreads among Sumatera, Kalimantan and Papua. Some companies have expressed their interest, especially in East Kalimantan, and some places in eastern Indonesia. The regulations that I mentioned earlier will become the guidance for the whole picture of this development.

Hart Energy: When do you expect the first shale gas in Indonesia to be produced? (Some reports say this may not happen until 2018.) What needs to happen before shale gas can actually be produced in your country? And what are Indonesia's goals for the unconventional resource sector?

Legowo: We have made positive progress in creating a good climate for the development [of shale gas]. Several companies have already submitted proposals for some areas. The director general of oil and gas has the authority to run joint studies in each of these applications, and normally it would take a minimum of three months. At the end of this year, we will try to establish some shale-gas working acreage, and it would take a six-year exploration period to prove the resources. So, let us see what happens in the next six years.

Hart Energy: As far as creating jobs in Indonesia, what kind of effect do you expect the emerging shale-gas industry to have? Do you have any expectations about the potential economic impact of the shale-gas industry?

Legowo: As we mentioned at beginning, with considerable interest and regulatory support, shale gas in Indonesia is expected to be one of the future national projects that can increase the supply of gas to meet domestic demand, which continues to rise, and enhance economic growth.

Hart Energy: Are you encouraging foreign investors and operators to get involved in Indonesia's shale-gas production? If so, what assurances can you give to potential investors? How easy is it for a small- or medium-sized U.S. independent to become involved in Indonesia?

Legowo: Basically, investors and operators interested in shale gas can be involved in Indonesia's shale-gas production. We don't make any limitations. However, it requires high investment. Therefore, the small- or medium-sized investor may invite other investors in a consortium.

The investment cost of shale gas is more expensive in Indonesia than in other countries that have developed shale gas, such as the United States, because the condition of the area is more complicated. The depth factors affect the investment cost. In the U.S., the drilling cost per well can be as low as \$3 million to \$4 million. **Meanwhile, in Indonesia it can reach \$8 million per well.**

Hart Energy: Reports say that you have studied shale-gas production in the United States. What did you learn, and how does that apply to Indonesia?

Legowo: Lateral wells with multistage [completions](#) are needed to produce shale-gas optimally. Production per well by **using multilateral wells in Pennsylvania can reach rates as high as 22 million cubic feet per day.**

Hart Energy: Can you talk about the state of [coalbed methane](#) (CBM) in the South Sumatera and other basins?

Legowo: Indonesia has one of the largest CBM resources in the world with a potential 453 Tcf, more than double the country's current natural gas reserves. The South Sumatra Basin, the largest CBM basin in Indonesia, is estimated to contain in-place resources of approximately 183 Tcf. In the Barito Basin, the second largest CBM basin in Indonesia, it is estimated that CBM resources are approximately 101.6 Tcf, and the Kutai Basin, the third largest CBM basin in Indonesia, is estimated to contain in-place resources of approximately 80 Tcf. Between May 2008 and August 2011, 39 CBM production-sharing contracts were granted by the government of Indonesia.

The eastern area of Kalimantan has numerous coal outcrops and open-pit coal mines, several natural gas fields and the world's second-largest LNG facility, PT Badak's Bontang plant, which is expected to be the most likely market for CBM projects in the region. At present, LNG produced at PT Badak's Bontang plant is shipped to buyers in Japan, Korea and Taiwan.

Hart Energy: What is the greatest challenge a company faces in doing business in Indonesia, and how competitive is your country's business climate compared to that of neighboring countries?

Legowo: The greatest challenge facing the oil and gas sector is the lack of logistical infrastructure available to support distribution and commercial exploration. The main production sites are located in areas situated a substantial distance from the electricity-grid network and the main population centers of Java.

The Indonesia Economic Corridors Master Plan to 2025 aims to address this by positioning refineries and industrial production sites at the sources of primary energy production, but this will only be materialized in the long term. In the Indonesian oil and gas sector, opportunities and challenges seem to go hand in hand, but the general consensus is that the opportunities here are bigger than the challenges.

Considering the growing global demand for natural gas and Indonesia's potential to cater to this demand, the number of opportunities in this sector is high. There are vast areas of [offshore](#) blocks with potential reserves yet to be explored. Indonesia holds a lot of promise for unconventional oil and gas resources, including CBM and shale gas.

The export demand for natural gas is projected to increase. With demand from local power plants and fertilizer plants also increasing, Indonesia has to do a balancing act that satisfies both domestic and foreign demand.

The recession dampened natural gas export demand, giving opportunity to service the local demand. However, as export demand picks up again, Indonesia will have a tougher balancing act to do. The solution would be to bring new LNG projects online faster. Investors are needed for the development of domestic gas infrastructure.

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