

Global Gas Outlook: Indonesia Perspective International Petroleum Technology Conference

Doha, Qatar, 8 December 2009



DISCLAIMER

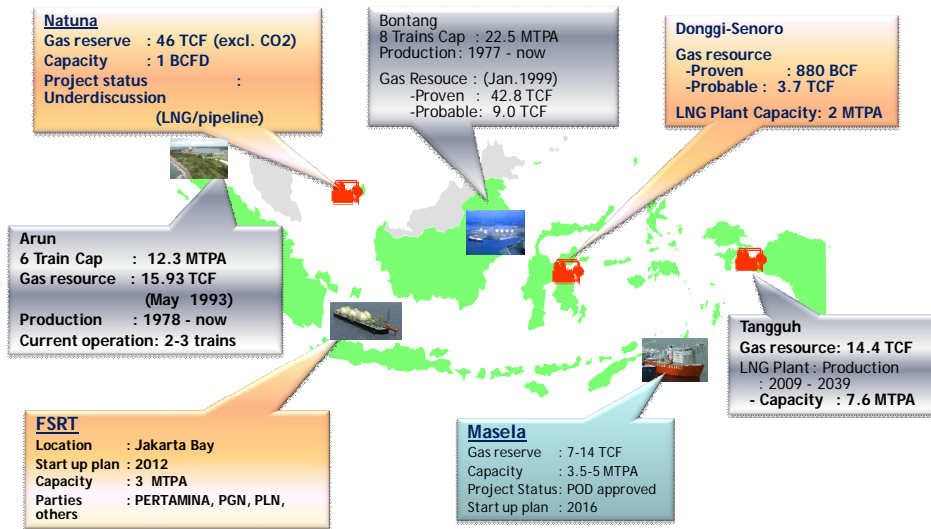
The presentation is made solely for the purpose of this event and is not intended to be and should not be used by any other person or entity. The contents may contain copyright and/or legally privileged information and the reader must therefore not use, copy, disclose or take any action based on this presentation material or any information herein.

PT Pertamina (Persero) and its respective subsidiaries, affiliates and associated companies (or by any of their respective officers, employees or agents) will not in any manner whatsoever be deemed or construed to implicitly or explicitly represent or warrant the accuracy or completeness of the information or the contents of this presentation material. All consequences and/or liabilities (including without limitation, those arising from negligences) to other parties for the utilization of the documents are specifically disclaimed.

Outline

- ❖ Indonesian LNG Projects
- ❖ Technology Challenges in LNG Development.
- ❖ Coal Bed Methane (CBM) in Indonesia
- ❖ Conclusion

INDONESIAN LNG PROJECTS



TECHNOLOGY CHALLENGES in LNG DEVELOPMENT

LNG Floating & Regasification Terminal (FSRT) - West Java & Central-East Java

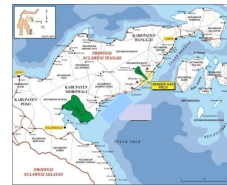
Gas supply shortage for PLN :

- ❑ In West Java → 400 mmscfd (3 MTPA).
 - LNG Supply from Kalimantan for Domestic (1.5 MTPA)
 - Look for another LNG supply of 1.5 MTPA
- ❑ In Central/East Java → 400 mmscfd (3 MTPA)



LNG Liquefaction Plant : Donggi Senoro

- ❖ Small Gas Reserved → Small LNG Plant (2 MTPA for 15 years contract)
- ❖ Downstream scheme : 1st in Indonesia
- ❖ Gas Supply :
 - ❑ For export/LNG: 335 MMSCFD
 - ❑ For domestic : 70 MMSCFD
- ❖ Expected to be onstream Q4 2013



5



TECHNOLOGY CHALLENGES in LNG DEVELOPMENT

LNG Liquefaction Plant : Natuna

- ❖ High CO₂ content (70%) → advanced separation & disposal CO₂ technology,
- ❖ Potential Development :
 - ❑ via gas pipeline market to end user
 - ❑ Onshore LNG Plant : (225 km pipeline to Natuna island)
 - ❑ Offshore Floating LNG (145 m water depth)
- ❖ High investment & risks : join with other partners



LNG Floating Liquefaction Plant : Masela - Abadi

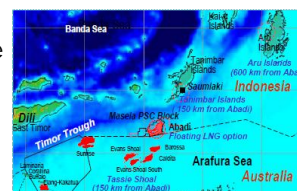
INPEX will develop the FLNG (4.5 MTPA capacity for initial)

Key issues : FLNG technology

GOI tendering for feasibility study : Offshore vs Onshore

Onshore : Pipeline to onshore facility

- ❑ water depth : 400 - 800 m,
- ❑ Subsea Pipeline : 150 km to Tanimbar island & 600 km to Aru island



6



COAL BED METHANE (CBM) in INDONESIA



TOTAL CBM RESOURCES : 453.3 TCF
TOTAL OF CBM BASINS : 11

7



CONCLUSION

LNG Development in Indonesia :

- ➔ Evolution of LNG Indonesia from fiscal creator toward optimising potential to be long term LNG supplier for both export and meeting domestic demands
- ➔ Technology development in CBM, Floating Liquefaction (FLNG) & Regasification (FSRT) will play key role in future Indonesia LNG.
- ➔ Managing large amount of CO₂ in Natuna is important for future LNG industry, and Pertamina is willing to be active in the road map by participating both in Natuna and other projects
- ➔ The dynamics of international market is a factor in the development of future LNG projects

8



THANK YOU



New Gas Outlook : Indonesia Perspective

Speaker : Hari Karyuliarto
Head of LNG Business of Pertamina

Speech date : 8 December 2009

Event : 2009 IPTC Doha, Qatar

Distinguished Guests, Ladies, and Gentlemen

It is a great pleasure for me to join you today.

First of all, I would like to thank to the organizer for the opportunity for Pertamina to take part in this important event

In line with the theme of this session – “Global Gas Outlook”- I would like to share with you today, Indonesia’s perspective, as long time producer to keep our LNG production and at the same time to meet the challenge to fulfill domestic demands. Back in 1970s Indonesia hardly needed fund to finance the early stages of the country development. And therefore Arun and Bontang have been developed export purpose only. Along with the success of the development, economic grows. More energy is needed to support the development activities. Fulfilling domestic energy demands becomes one of the top priorities in the Indonesian energy blueprint.

Currently there are 7 LNG projects in Indonesia. 3 of them are operating (Arun, Bontang, Tangguh), 1 project is ongoing (FSRT Java), and 3 other projects

are still in the approval process (Donggi Senoro, Natuna and Masela), although, they are in different phase of approval.

Started in late 1970s, Pertamina has been operating 2 LNG facilities, Arun and Badak that located in Sumatra and Kalimantan islands respectively. Up to September 2009, Arun has exported 4,165 cargoes of LNG while Badak has produced 7,345 cargoes at the same period to export the LNG to Japan, Taiwan, Korea, and small portion to China and India. Both operations have ranked Indonesia as the biggest LNG producer until 2006.

The third LNG project operating in Indonesia is Tangguh, operated by BP, has just started its operation this year. Tangguh LNG is exported to China, Korea, Japan, and US.

The first three LNG projects are mainly driven for export. Arun is expected to run for another 5 years, while Badak will be operating longer.

Distinguished Guests, Ladies and gentlemen,

FSRT Java. Due to declining in feed gas supply and increasing gas demand, there is an unbalance gas especially in Java, the most populated island.

West Java, for instance, needs 400 mmscfd (3 MTPA). The deficit of gas in the area is covered with the availability of gas from other part of country, Kalimantan island, around 1600 km from West Java. Existing operation of Badak (East Kalimantan) is available to supply around 1,5 MTPA. Pertamina with PLN (state electricity company) and PGN (state gas company) are developing LNG Floating and Receiving Terminal for West Java. The project is expected to start in 2012.

There is another unbalance gas situation as well in Central and East Java Provinces for 400 MMSCFD in total. To achieve the location and faster development, it is planned to develop FSRT (Floating Storage and Regasification terminal) in those areas.

FSRT is an alternative to overcome both economic and geographic challenges in fulfilling the energy demand in one area and supplying it from another distanced area in the country.

Donggi Senoro. The first integrated LNG project we have is Donggi Senoro in Central Sulawesi Province, it is about 2,500 km north east of Jakarta. Pertamina is involved in the project from upstream to downstream. Our exploration indicated for 2,4 TCF gas deposit spread in several locations. After sleeping for 29 years, the project will start producing in 2013 for 15 years. Despite of pending government approval, we are optimistic the project will finally obtain approval to continue for the next steps

The project itself is developed through down- stream scheme approach involving Mitsubishi and Medco, another Indonesian oil company. This is a new approach, due to the new Oil and Gas Law does not allow upstream and downstream owned by a single company any longer.

As like Arun and Badak, Donggi Senoro is designed for export and fulfilling domestic demands. Public expects further involvement in meeting the domestic demands. We are optimistic the next phase of the project will start soon to achieve target of first production in mid 2013.

Natuna. One of the most waited projects since 1973 is Natuna. It has a big reserve, around 46 TCF (excludes CO2). It has been indicated the CO2 content that reaches 71% of the deposit.

Potential development would be using pipeline, onshore and/or offshore floating LNG. The pipeline length from the location to Natuna island is around 225 km, to Bintulu Malaysia 450 km, to Kerteh 790 km and to Batam 880 km.

The estimated total investment is around USD 40-60 billion that will be one of the most capital extensive project and needs many partnerships to develop Natuna project. Currently we are selecting the short listed candidates for partners to develop the project. Hopefully we will have the result by the end of this year to achieve first production in 2018. .

Besides technology challenge, Natuna project is a challenge to implement Pertamina's 15 year vision to become world class national oil company. Pertamina would be happy to have an alliance for projects (s) in with the potential candidate in Natuna. By having such cooperation, it will bring Pertamina to a higher level of confidence for running bigger operations in the future.

Masela Project. Inpex will develop a 4.5 MTPA LNG capacity in a stranded gas deposit at Abadi Field, in eastern part of Indonesia. Indonesia Government is still seeking information to pick the best, whether Onshore or Offshore Plant.

Distinguished Guests, Ladies and gentlemen,

Indonesia has the 3rd largest CBM reserves in the world after China (1000 TCF) and North America (800 TCF). The CBM reserves in Indonesia is 453.3 TCF

which consist of reserves in Sumatera Island ± 235.5 TCF and Kalimantan Island : ± 207.9 TCF.

To monetize CBM, Government has awarded 3 blocks in East Kalimantan (Sangata and Sanga-Sanga). It is expected that gas from CBM can feed Badak LNG Plant to compensate declining of gas reserves in this area, and LNG production rate can be maintained

Ladies and Gentlemen,

I have to come to the end of my short presentation and would like to share the following concluding remarks on the topic that I have presented before you :

- After 30 years of being active as LNG producer, Indonesia is evolving from taking part as financial supporter for Indonesia development to optimising the potential for both export as well as the domestic demands. It reflects the success of the development itself. The energy demand in Indonesia is rising along with the growing of the country development. LNG is a means for the country to cope with this situation.
- The economic growing area such as Java where most of the industries located, lacks of energy supply. Supply is found in the areas that located in the distanced area. The development of technology in CBM, FSRT, Floating LNG, and transportation will play very much role in the future Indonesia LNG.

- Through Natuna project, Pertamina is taking part in the road map toward future LNG industry where ability creating technology for managing large amount of CO₂ is one its important keys.
- With experience in more than 30 years, Pertamina is ready to become integrated player, from upstream to downstream, maintaining a long term supplier for the world and meeting domestic energy demands.

Thank you.