Delivering Energy

Upstream Stranded Domestic Gas Potential to meet Energy Demand through LNG Value Chain: Lessons Learned from Senoro-DSLNG

Eka Satria, Development Director - PT Medco Energi International

MedcoEnergy is a publicly listed, integrated energy company with significant interests in Power Generation and support services alongside its core Oil & Gas Exploration & Production activities in Indonesia, the Middle East, North Africa and the US.
Future oil and gas prospects is challenging

Resources by theme

Indonesia still have abundant resources
2013 proved oil & gas reserves of 3.7 Billion barrels and 103 TCF
Undeveloped resources 17.9 billion BOE and Unconventional
(Shale Gas 574 TCF and CBM 453 TCF)
(Source : ESDM, Woodmac, BP Statistical Review)

However, remaining resources
75% located in offshore (shallow & deepwater), Eastern Indonesia and dominated by 85% gas

Stranded, offshore and deep water areas:
Require high capital, advance technology and competent skilled manpower

Resources by type

Source : Woodmac
Donggi Senoro Development and Lessons Learnt
Developing new LNG project in “stranded area”

Monetization challenges:
• Remote and far from the market
• Lack of local gas infrastructure

Objectives:
Upstream, combining upstream resources to provide guarantee of supply
• Senoro: Monetize 1.96 TCF of gross 2P reserve and contingent gas resources through LNG product and pipelined gas
• Matindok: Monetize 0.7 TCF of gross 2P reserves through LNG product and pipelined gas

Downstream, the creation of the market
• DSLNG: Commercialize 2.7 TCF of gross 2P reserve and contingent gas resources through LNG product
• PAU: Produce ammonia 700,000 ton per year
• PLN: Generate electricity for East Indonesia (100 MW)
Senoro Upstream and DSLNG Current Status

- Project Finance signed in Dec 2014
- Project on time and budget, first gas in June 2015 and first LNG shipment in August 2015.
- Inaugurated by President Joko Widodo on 2 August 2015
- Total upstream capacity 340 mmscfd and DSLNG 2 MTPA
- Total 12 cargos delivered in 2015 and 39 cargos to be delivered in 2016
- Upside potentials to increase production capacities both upstream and downstream
Senoro Project – Business Model / Structure

PT DSLNG is the first business model for LNG plant as a separate downstream business entity, not integrated with the upstream gas production.

LNG plant investment and other buyers is a separate business entity from the Senoro upstream development:
- All investment and operation risk of LNG plant will be borne by PT DSLNG, hence No cost recovery burden to GOI
- Match the risk profile and capabilities of the player(s) in each value chain
- Provide bigger incentive on Upstream development to offset upstream risks and future exploration development
Senoro Upstream & DSLNG key take away

- The creation of Upstream security of supply and the size by combining upstream resources (Senoro, Donggi, Matindok) could open the new gas producer region in Central Sulawesi.
- Demand is created by having a separated downstream entity, DSLNG, PAU and PLN
  - The Donggi-Senoro project is the 1st LNG downstream concept in Indonesia and Asia done by all Asian partners with world class quality.
- Risks are managed through an integrated value chain and development
- Monetizing stranded gas and giving benefit to Government and local stakeholders, and giving significant impact on the economic growth in the Central Sulawesi area, (>USD 5 billions to GOI revenue)
**BLOCK A (PT Medco E&P Malaka)**
5 BBTUD, 14% CO2 from AR/AS field
On stream 2018

Potential development in appraisal study:
- 20 MMSCFD Matang, on stream 2025
- 90 MMSCFD Kuala Langsa, on stream 2029 (indicative)

**SENORO (PT Medco E&P Tomori)**
30 MMSCFD Gas from existing Central Processing Plant (CPP)

Potential development in appraisal study:
Up to 150 mmscfd North & South Senoro
On stream 2022 (indicative)

**DSLNG (PT Medco LNG Indonesia)**

**SIMENGGARIS (PT Medco E&P Simenggaris)**
25 MMSCFD Gas from existing Central Processing Plant (CPP)

Potential development in exploration:
70 mmscfd from various fields
On stream 2022 (indicative)
Further gas development in Indonesia’s upstream industry should be supported by strong gas infrastructure.
Breakthroughs in LNG value chain infrastructure

• Upstream: Incentive to develop the remote and stranded gas, hence will provide benefit to GOI, local industry and stakeholders. The resources is there and available

• Streamlining the regulations and promoting conducive investment climate for the players:
  • Shorter timeline and simplification for relevant approvals
  • Integrated gas chain monetization which involve strategic midstream and downstream partners to manage risks across value chain

• Creation of the market:
  – Regional hubs to be considered
  – FSRU and Virtual Pipeline
  – Gas aggregator

• Clear and strong support from Government:
  • Gas infrastructures is key, foster the development
  • Promote gas supply assurance to investor
Thank You
Indonesia Oil and Gas Industry at a glance
Challenges in LNG Value Chain Development

- **Upstream**:
  - Era of easy oil is finish, need development incentive and faster development timing, but Indonesia has a big upside to develop.

- **Midstream**:
  - Gas demand is not fully connected to gas resources due to lack of infrastructure
  - Complex transportation infrastructure and regulation creating a risk for investor (port, ship, hub, trucking)

- **Downstream**:
  - Scattered demand with lack of infrastructure such as gas offtaker readiness, regasification units

- **Challenges**:
  - An integrated strategy and risk sharing mechanism between the value chain

Example: Gas demand potential for Electricity in Central Indonesia:
Typical LNG Project in Indonesia

- Integrated upstream downstream development due to the complexity of project risks
- Government involvement in all value chains either through Pertamina or SKKMIGAS; Arun and Bontang receive full support from Government to complete fast track due to the importance of the project to the country at that time (1970’s)
- Done by the supermajors (ExxonMobil, BP, Total) with strong capital support
Long time process from Discovery to Production

12-18 mo’s
Indonesia Participation
- National Share
- Regional-1 Share
- Regional-2 Share

6-12 mo’s
Commerciality/Certification

24-30 mo’s
- Gas Contracts Process
- Export Share
- Producing Region(s) Share
- Other Domestic Share
- Gas Contracts Approvals

12-18 mo’s
Gas Discovery & Appraisal

6-12 mo’s
Gas Transpor-tation Agreement Process

24-36 mo’s
PSC Extension
- National Share
- Regional Share

48-60 mo’s
- Land Process (Local & Central)
- Permitting Process (Local & Central)
- AFE Process
- POD Approval (Central)
- POD Approval (Local)
- WP&B Process
- Procurement Process
- EPCI

Require 10-14 years to monetize the reserves.
In reality the journey take longer time: Tangguh (16 years), Senoro (16 years), Masela (17 ++ years)