Delivering Energy

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

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MedcoEnergi 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

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
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
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)
**Medco Domestic Current Gas Potential**

**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)

**SENRORO (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)
Infrastructures is the key for gas development

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
- Gas Discovery & Appraisal
- Commerciality/Certification

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

6-12 mo’s
- Gas Transportation Agreement Process

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

48-60 mo’s
- Procurement Process
- EPCI
- GOI Post Audits

Gas Delivery

Regions
- 1
- 2

Permitting Process (Local & Central)
- Gas Trans
- Gas Delivery

Procurement Process

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