

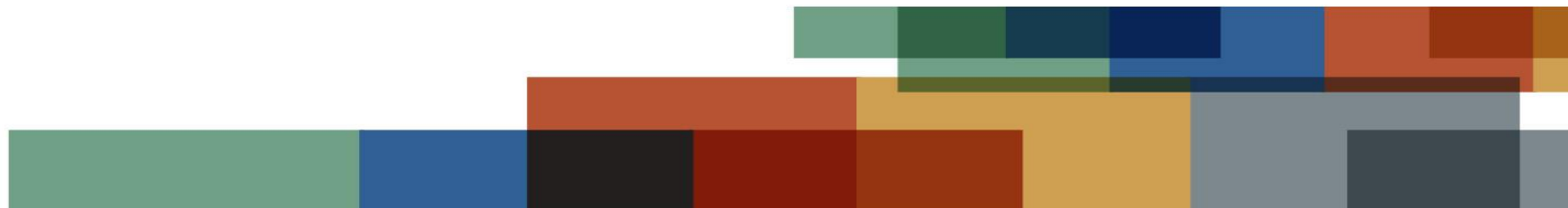


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Gas Commercialisation Strategy in Indonesia

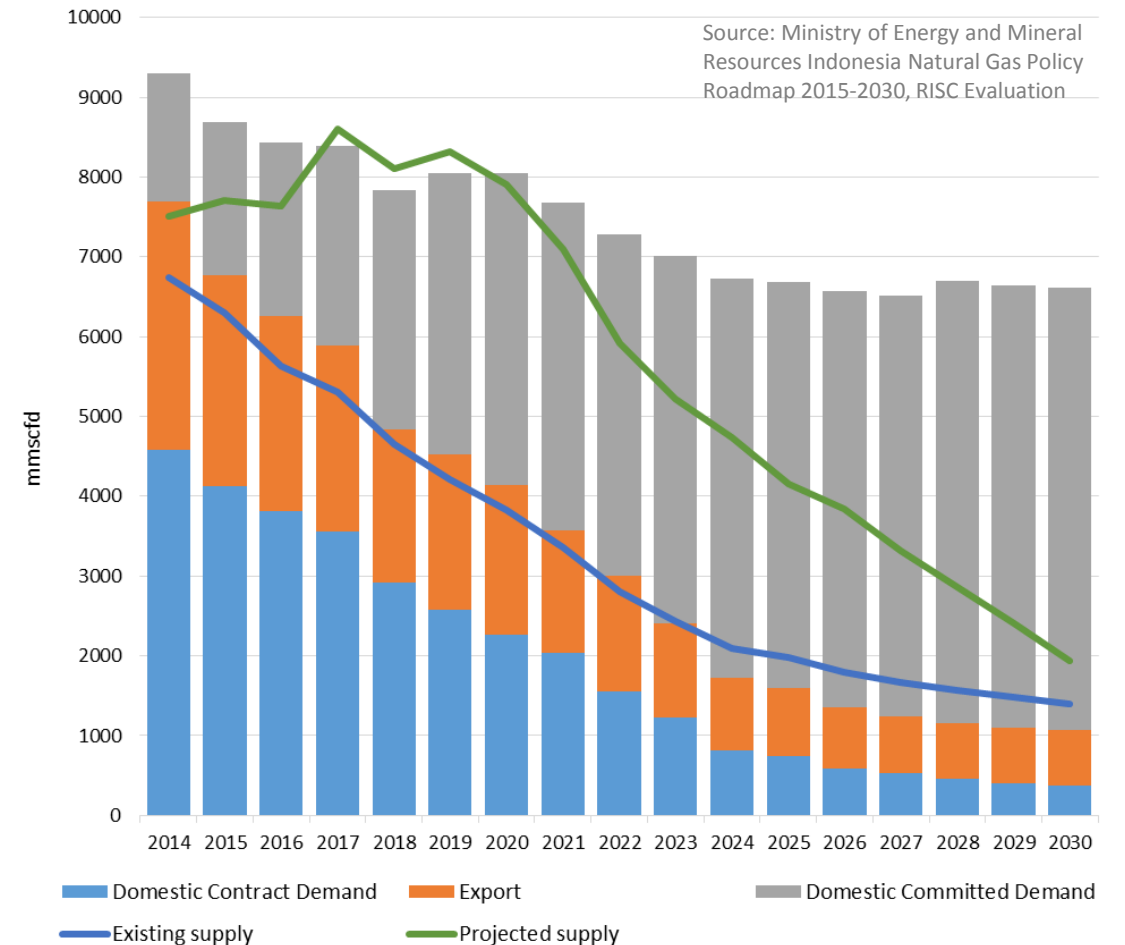
Presented by Edwin Soetirto

May 2016



Positive domestic gas demand growth outlook:

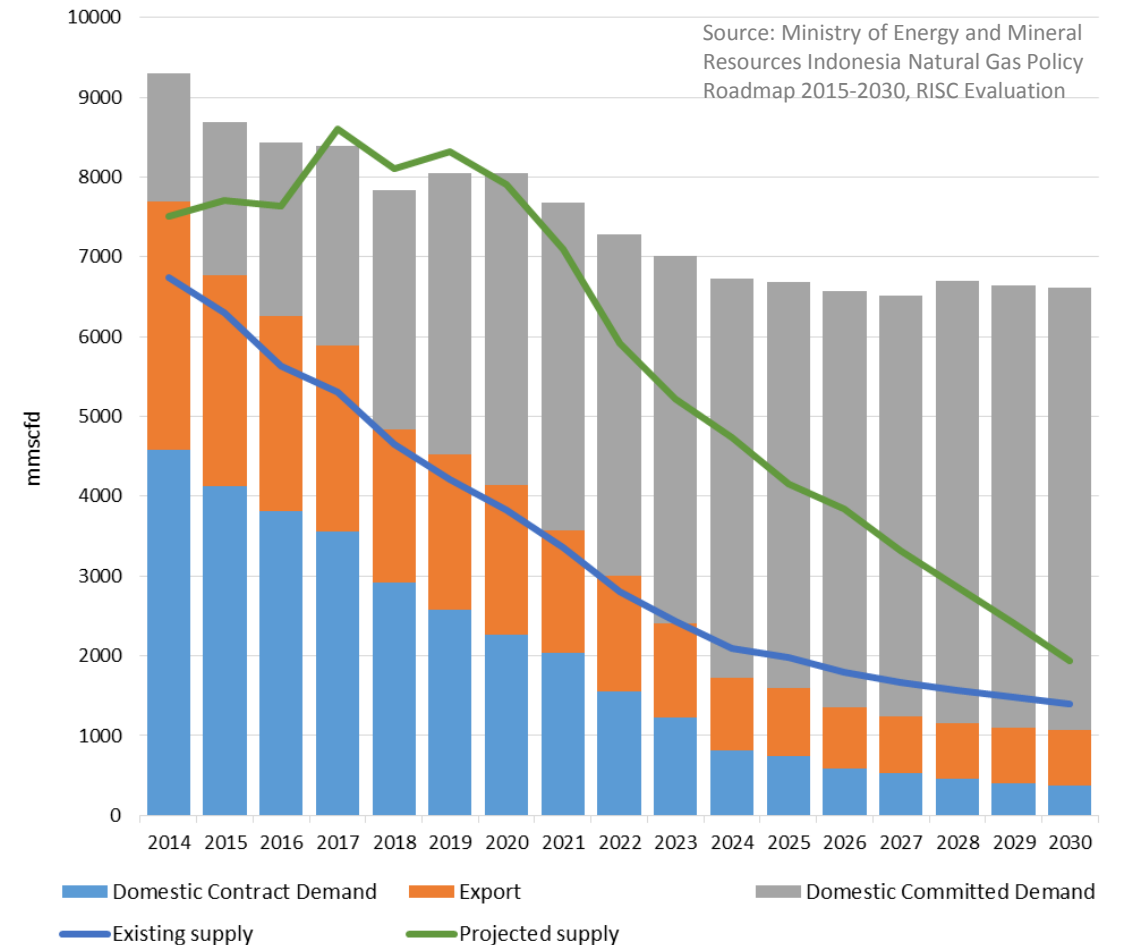
- Government campaigns and regulations to reduce fuel subsidies promote increased gas utilisation
- Prioritisation of domestic gas supply for:
 - Own-use/Field operation
 - Fertiliser and petrochemical feedstock
 - Power generation
- Power generation is the biggest source of gas demand and gas is expected to account for 35% of the 35,000 MW power acceleration programme to be built in 2014-2019
- Development focus outside Java and policies to ban raw materials export will create captive gas markets



Domestic Contract Demand: Estimation from signed GSAs.
Export: Estimation of Bontang, Tangguh and Donggi Senoro LNG exports plus pipeline exports from West Natuna and Central Sumatra.
Domestic Committed Demand: Estimation from installed capacity that not yet fulfilled by GSAs.
Existing Supply: Estimation of gas from existing production.
Projected Supply: Estimation of gas from approved POD, submitted POD, certain FSRU supply.

Supply outlook:

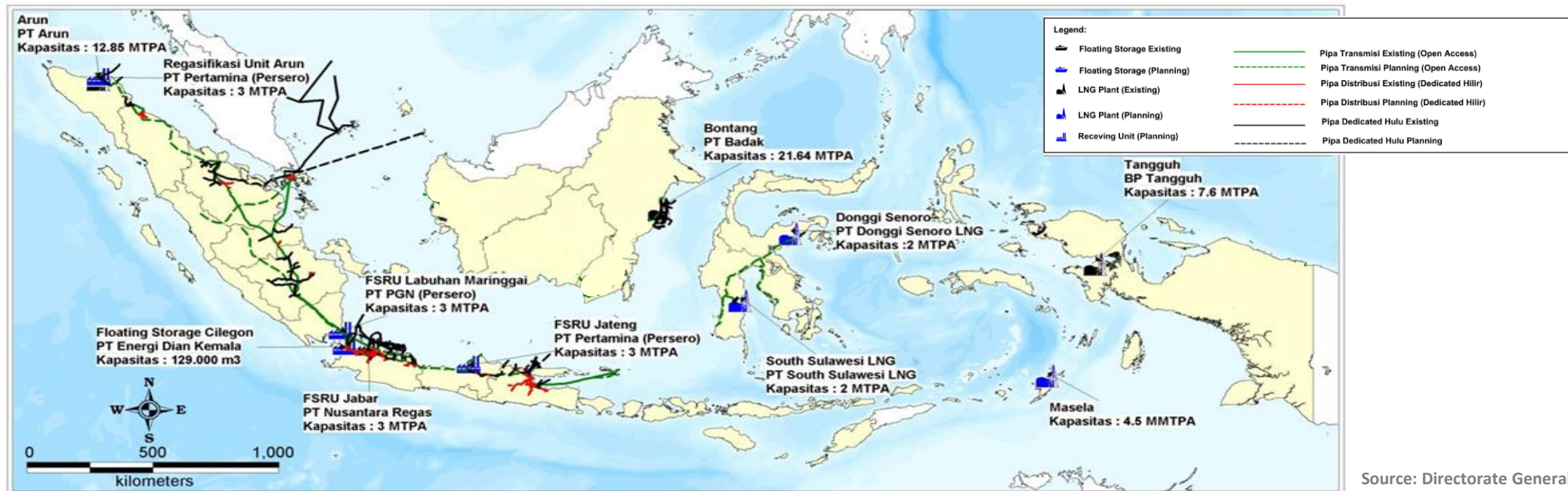
- Projected supplies on the basis of approved and submitted PoDs and certain FSRUs (Floating Storage Regasification Unit) show an approximate supply/demand balance over the next few years, but with a supply shortfall thereafter
- Uncertainty on PSC extensions required and doubt over approvals of major projects currently in the planning stage may leave demand gaps to fill by LNG
- The latest Indonesian Natural Gas Roadmap issued in 2015 by Ministry of Energy and Mineral Resources (MEMR) reflects strong government endorsement in developing natural gas in Indonesia to fill the forecast demand gap



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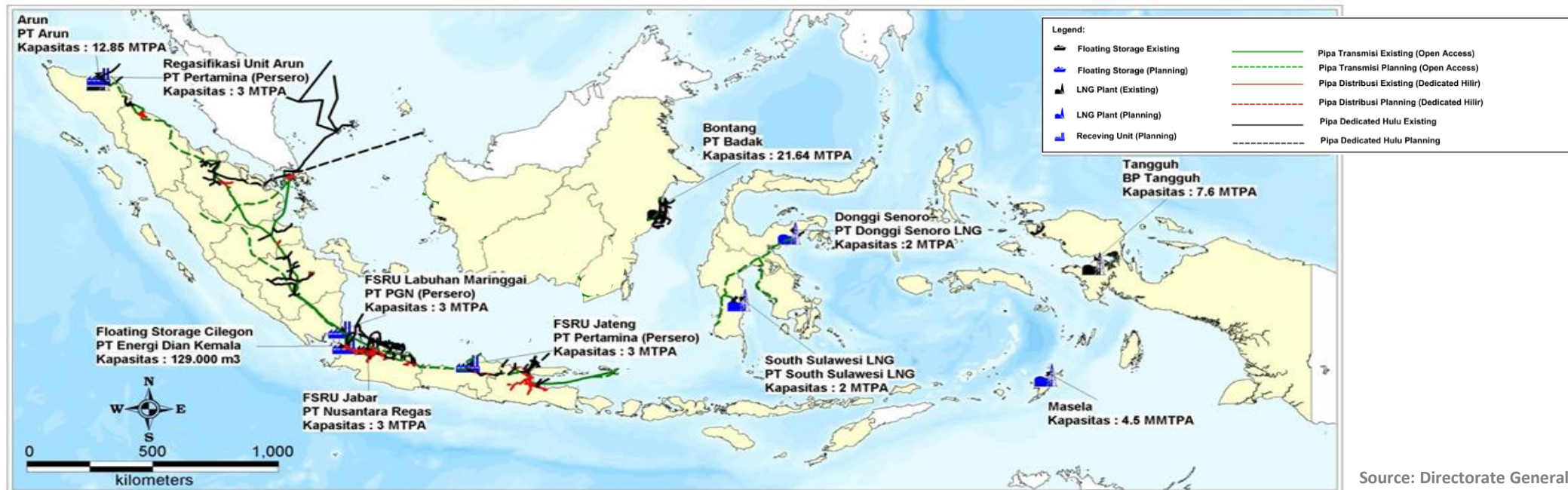
Gas Infrastructure Overview

- The domestic gas market is geographically fragmented with several distinct and separate regions due to island geography of the country
- Majority of domestic demand is in the South and Western islands of Java and Sumatra, where much of the pipeline infrastructure exists
- Geography supports the use of LNG regasification at key demand centres



Source: Directorate General MIGAS

- Domestic gas infrastructure is expanding with FSRUs to support LNG import – either from external regions or domestic LNG
 - Arun Regas plant and Arun-Belawan pipeline are now in operation and will help meet gas supply needs in Northern Sumatra
 - Two existing FSRUs (FSRU Jabar and FSRU Labuhan Maringgai) with two approved FSRUs (Floating Storage Cilegon and FSRU Jateng) will increase LNG import capacity while reducing dependency on declining piped gas supply and delays of major gas developments.
 - Distribution pipelines in Java and Sumatra to be interconnected by 2020s to support growing demand from industry sectors, especially in Java



Source: Directorate General MIGAS

Domestic Gas and LNG Pricing

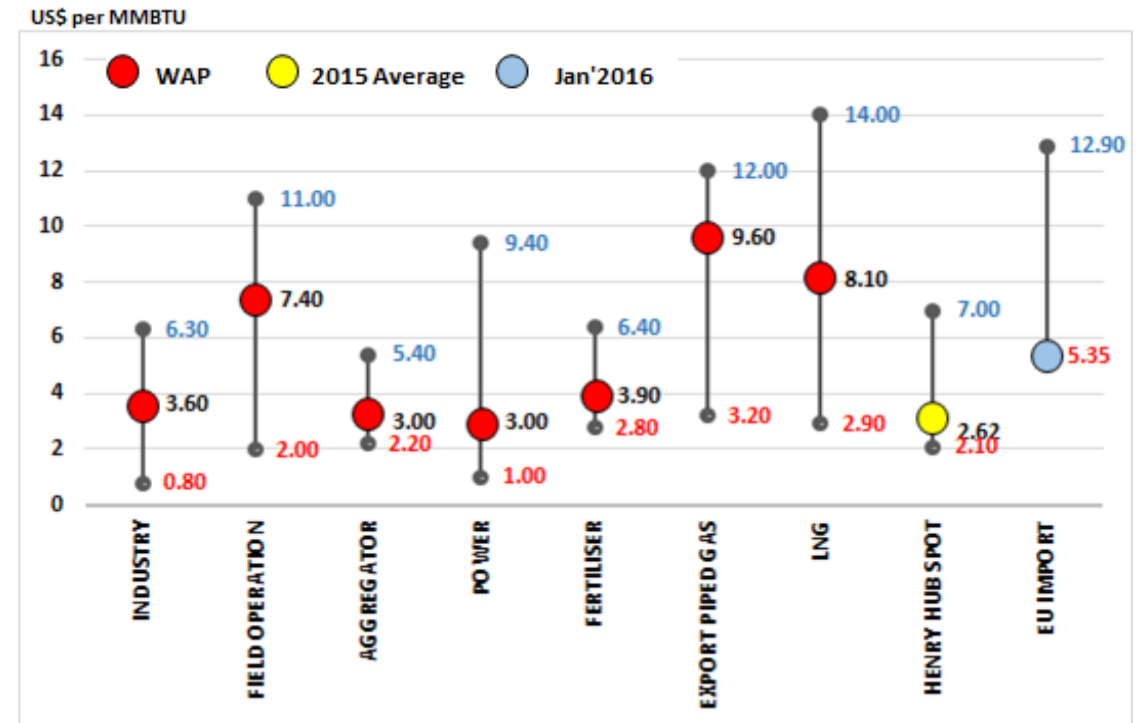


- Various domestic gas pricing formulae are common and mostly use a flat price + some % escalation (2-3%) per annum
- LNG price is commonly linked to oil price: $LNG\ price = A * CRUDE\ PRICE + B$

A = slope (ranges between 11% - 13% for domestic prices; 12% - 14% for export FOB prices)

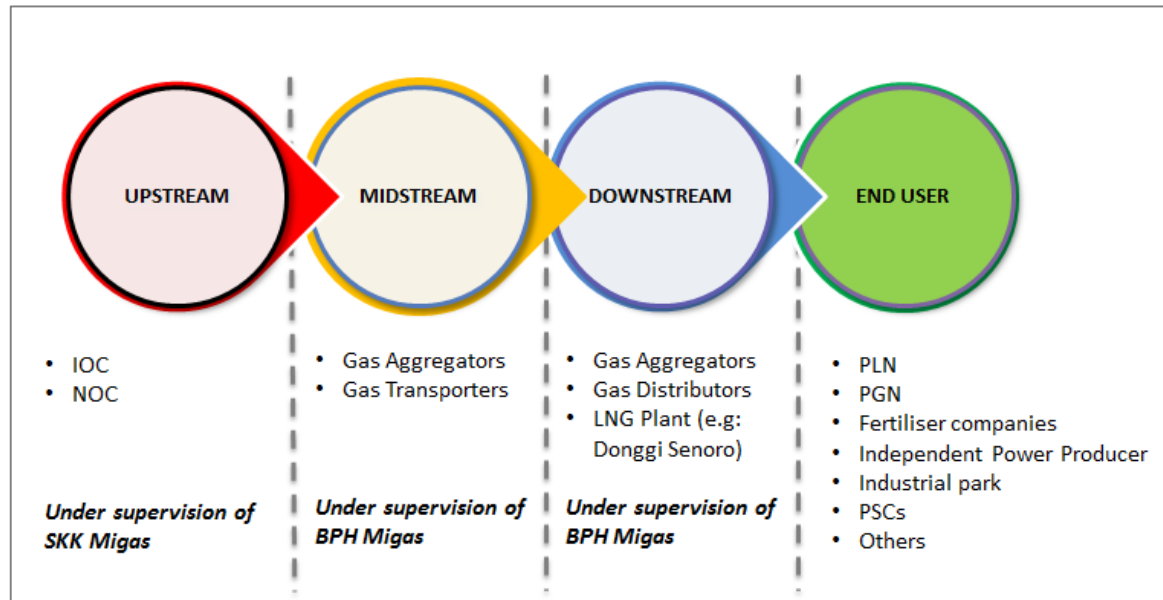
B = constant (depends on LNG quality, shipping, market condition, etc)

- 2015 Weighted Average Price (WAP) of domestic gas price is around US\$6.00/mmbtu. This is better compared to average 2015 Henry Hub spot price US\$2.62/mmbtu in the U.S. and the January 2016 European Union import at US\$5.35/mmbtu



Source: Public Domain Sources, EIA, RISC Evaluation

- Natural gas and LNG businesses are managed by Government bodies directly related to state revenue collection:
 - Upstream (gas producers): MEMR works together with MOF (for state tax revenue) and Ministry of Forestry/ Maritime
 - Downstream (gas buyers): MEMR involve in determining the price, especially for PLN, fertiliser and petrochemical plants



Source: RISC

- Government Regulation (PP) 55/2009 regarding Amendment of Government Regulation (PP) 35/2004 stipulates Domestic Market Obligation ('DMO'): Contractor is obliged to fulfil oil and gas domestic demand by allocating 25% of its production to domestic markets
- Minister regulation MEMR 03/2010 regarding Allocation and Utilisation of Natural Gas for Domestic Demand stipulates the utilisation of natural gas will be prioritised for domestic demand, taking into account economic field development

- Indonesia is an attractive place to sell gas. With a growing economy creating anticipated strong domestic gas demand, reasonable gas pricing, improving gas infrastructure and supportive Government's regulations on domestic gas utilisation policies, the outlook for domestic gas demand is positive

- A gas commercialisation strategy should consider:
 1. Domestic gas supply-demand outlook in Indonesia
 2. Existing and planned gas infrastructure
 3. Domestic gas pricing
 4. Regulatory bodies and regulations

- A comprehensive gas commercialisation strategy will provide an up-to-date market assessment to understand gas commercialisation options and will assist assets operators to optimise commercial strategy and to move forward integrated development strategy to support gas sales process

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Perth

Level 3
1138 Hay Street
WEST PERTH WA 6005
P. +61 8 9420 6660
F. +61 8 9420 6690
E. admin@riscadvisory.com

Brisbane

Level 10
239 George Street
BRISBANE QLD 4064
P. +61 7 3025 3369
F. +61 7 3188 5777
E. admin@riscadvisory.com

London

4th floor Rex House
4-12 Regent Street
LONDON UK SW1Y 4RG
P. +44 203 795 0430
F. +44 203 542 0701
E. riscuk@riscadvisory.com

Dubai

Suite 503, Shangri La Offices
Sheikh Zayed Road
DUBAI UAE
P. +971 4 401 9875
F. +61 8 9420 6690
E. admin@riscadvisory.com

Jakarta

Alamanda Tower, 25th Floor
Jl. T.B. Simatupang, Kav. 23-24
JAKARTA 12430 INDONESIA
P. +62 21 2965 7823
F. +62 21 2965 7824
E. admin@riscadvisory.com

www.riscadvisory.com

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