Gas Infrastructure Development in Indonesia

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Domestic gas demand expected to grow at 5.2% p.a, with power and industry sectors accounting for ~70% of demand by 2025

<table>
<thead>
<tr>
<th>Industry</th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
<th>CAGR (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>City Gas</td>
<td>5,453</td>
<td>7,942</td>
<td>9,040</td>
<td>18.0</td>
</tr>
<tr>
<td>Refinery</td>
<td>1,890</td>
<td>2,555</td>
<td>3,008</td>
<td>28.3</td>
</tr>
<tr>
<td>Fertilizers</td>
<td>1,783</td>
<td>1,965</td>
<td>2,122</td>
<td>3.4</td>
</tr>
<tr>
<td>Industry</td>
<td>1,097</td>
<td>1,530</td>
<td>1,530</td>
<td>4.8</td>
</tr>
<tr>
<td>Power (Captive)</td>
<td>491</td>
<td>962</td>
<td>1,180</td>
<td>9.2</td>
</tr>
<tr>
<td>Power (Grid)</td>
<td>1,180</td>
<td>2,122</td>
<td>2,122</td>
<td>1.8</td>
</tr>
</tbody>
</table>

Source: Pertamina
However given large export commitments, domestic supply will fall short of the demand.

MMSCFD

Source: Pertamina
Given archipelago nature of Indonesia and regional mismatch in demand and supply, there is a need to develop pipelines and LNG infrastructure.

<table>
<thead>
<tr>
<th>Region</th>
<th>2012</th>
<th>15</th>
<th>20</th>
<th>25</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>North Sumatra</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surplus region</td>
<td>-283</td>
<td>-342</td>
<td>-240</td>
<td>-182</td>
</tr>
<tr>
<td>Deficit region</td>
<td>-433</td>
<td>-471</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Central Sumatra</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surplus region</td>
<td>-207</td>
<td>-37</td>
<td>-341</td>
<td></td>
</tr>
<tr>
<td>Deficit region</td>
<td>-232</td>
<td>-122</td>
<td>-427</td>
<td></td>
</tr>
<tr>
<td><strong>Central Java</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surplus region</td>
<td>-191</td>
<td>-138</td>
<td>-168</td>
<td>-266</td>
</tr>
<tr>
<td>Deficit region</td>
<td>-205</td>
<td>-271</td>
<td>-411</td>
<td></td>
</tr>
<tr>
<td><strong>South Sumatra</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surplus region</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Deficit region</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>West Java</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surplus region</td>
<td>-468</td>
<td>-689</td>
<td>-804</td>
<td>-1,208</td>
</tr>
<tr>
<td>Deficit region</td>
<td>-592</td>
<td>-965</td>
<td>-1,091</td>
<td>-1,524</td>
</tr>
<tr>
<td><strong>East Java</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surplus region</td>
<td>-175</td>
<td>-372</td>
<td>-278</td>
<td>-545</td>
</tr>
<tr>
<td>Deficit region</td>
<td>-372</td>
<td>-51</td>
<td>-541</td>
<td>-869</td>
</tr>
</tbody>
</table>

Source: Pertamina
Pertamina is investing heavily in regasification terminals and pipeline infrastructure to support Indonesia’s demand.

**Gas and LNG infrastructure**

**Pipeline, regas, and LNG development**
- Existing pipeline
- Planned pipeline
- Existing Regas
- Planned Regas
- LNG KTI development
- Donggi Senoro LNG

**West Java**
- MK – MT – TG
- West Java Distribution Pipe
- FSRU Jawa Barat (NR)
- FSRU Cilamaya

**Central Java**
- Gresik - Semarang pipe
- Central Java Regas : FSRU Cilacap

**East Java**
- EJGP GratiPipe
- Arun Receiving & Regasification
- Arun – Belawan – KIM – KEK Pipe

**Sumatera**
- Arun
- Trans Sumatera pipeline
- Arun–Belawan–KIM–KEK Pipe
- Arun Receiving & Regasification

**East Indonesia**
- LNG KTI
- Mini LNG Plant Nunukan
- DS LNG

**Other infrastructure**
- IPPs
- Tempino–Plajuoil pipe
- NGL plant Sumsel (NGL Perta Samtan)
- LPG plant Pondok Tengah
- LPG Mundu

**Value chain expansion**
- CNG Transport
- LNG for Mining
- LNG for Vehicle
- LNG for Marine
- LNG Trading & Sourcing

**Maximize downstream**

**Source:** Pertamina
Support and coordination is required from various stakeholders to ensure infrastructure ramp up can happen at a fast pace.

**Government**
- Accelerate / simplify issuance of permits and licenses
- Formalize Pertamina’s strategic role as gas aggregator to ensure cost competitive sourcing

**Contractors**
- Given limitations of domestic EPC contractors, need to partner with international players to add capacity and capability
Closing Remarks

1. Indonesia’s domestic gas demand will continue to grow at 5% driven by power and industry segments.

2. However, given export commitments domestic supply will fall short of demand.

3. Given mismatch in demand and supply and archipelago nature of Indonesia, developing pipelines and LNG infrastructure is critical to meet the demand.

4. Pertamina is taking significant steps towards building infrastructure to support Indonesia’s demand.

5. Support and coordination is required from various stakeholders to ensure infrastructure ramp up can happen at a fast pace.