



DEVELOPMENT IN THE EAST ASIA SUMMIT REGION

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The use of natural gas in the East Asia region has seen unsatisfactory growth in the recent decade, the average share of natural gas is far below the world average. This is because the competitiveness of natural gas is compromised by many factors. The relatively high price of natural gas compared to coal, and even renewables in some cases, is a factor. Renewables not only have policy support to lower costs, but also squeeze thermal power's share in the market. In addition, low carbon price or no carbon price at all make the incentive to use natural gas lower in this region.

ERIA has estimated the potential growth of gas demand in ASEAN+India, and the necessary investment in infrastructure on the supply side. In estimating future gas demand, the key results of the demand side analysis are:

- Natural gas demand for ASEAN + India may grow by levels 2.3 to 2.5 times by 2030 compared to 2015. In absolute volume, the increase in demand is from 293 to 339 billion cubic meters.
- By sector, the power generation sector has the largest potential, followed by the industrial sector and residential sectors.
- By country, India has the largest potential, followed by Indonesia.

On the supply side, we have tried to identify the most suitable and feasible supply chain solutions. They are selected based on the size of demand, main uses of natural gas, technical constraints, geographical constraints, as well as available existing transport infrastructure, such as road, rail, and ports. Even considering existing and planned primary LNG terminals, still more primary LNG terminals are needed by 2030, whether conventional onshore LNG terminals or FSRU ships.

Our analysis also shows that primary LNG terminals in ASEAN can cover other countries' area. For saving capital costs, it is highly recommended that natural gas infrastructure could be shared. Estimated investment for additional LNG supply chain, including primary & secondary terminals,

pipeline, satellite facilities and ISO containers, by 2030 is 81 billion USD altogether.

Thus, the expanded use of LNG in Asia will depend on two conditions: LNG's competitiveness against other energy sources, and sufficient investment in every part of the value chain. The following table summarises "who does what" to achieve these conditions.

Moreover, in ERIA's ongoing study on "LNG Demand in Asia", attention is paid not only to the issue of how to further facilitate the expansion of demand from the region, but also

- how to address challenges in the region that causes demand uncertainty. These challenges include:
- LNG is a "balancer" to meet the residual demand after coal, domestic natural gas, pipeline import gas and renewable energy are used for power generation
- The role of natural gas in the power sector is not well defined by governments. Making a long-term commitment to LNG procurement is difficult at this stage.
- Market liberalisation means companies are more cautious in making significant infrastructure investments or agreeing long-term contracts

ERIA proposes innovative policies as well as coordination between upstream and downstream parties to address major issues in the natural gas market for the region. Issues include, ensuring supply security, improving tradability and liquidity of the market, promoting the financing of infrastructure investment, increasing cost competitiveness and identifying benchmark prices for the region, controlling demand uncertainty, and establishing regional trading hubs. Innovative policies include how to enable or introduce innovative business models, more flexible contracts and pricing and more liberalised markets. Without policy coordination between upstream and downstream, these challenges will not be addressed in an effective and timely manner. ■

	Industry	Government
Producing country	<ul style="list-style-type: none"> • Adopting effective cost-reduction measures • Removing or relaxing destination clause • Creating a reliable price benchmark • Developing well-functioning market • Optimising supply infrastructure 	<ul style="list-style-type: none"> • Developing well-functioning market • Improving investment environment • Optimising supply infrastructure • Supporting investment through public finance
Consuming country	<ul style="list-style-type: none"> • Adopting effective cost-reduction measures • Removing or relaxing destination clause and optimizing logistics • Creating a reliable price benchmark • Developing well-functioning market • Optimising supply infrastructure • Investing upstream by downstream players 	<ul style="list-style-type: none"> • Creating a reliable price benchmark • Liberalising the domestic market • Providing a low-carbon policy • Developing well-functioning market • Encouraging natural gas use by government • Optimising supply infrastructure • Supporting investment through public finance