Chapter 4

Natural Gas Outlook in the EAS Region

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CHAPTER 4
Natural Gas Outlook in the EAS Region

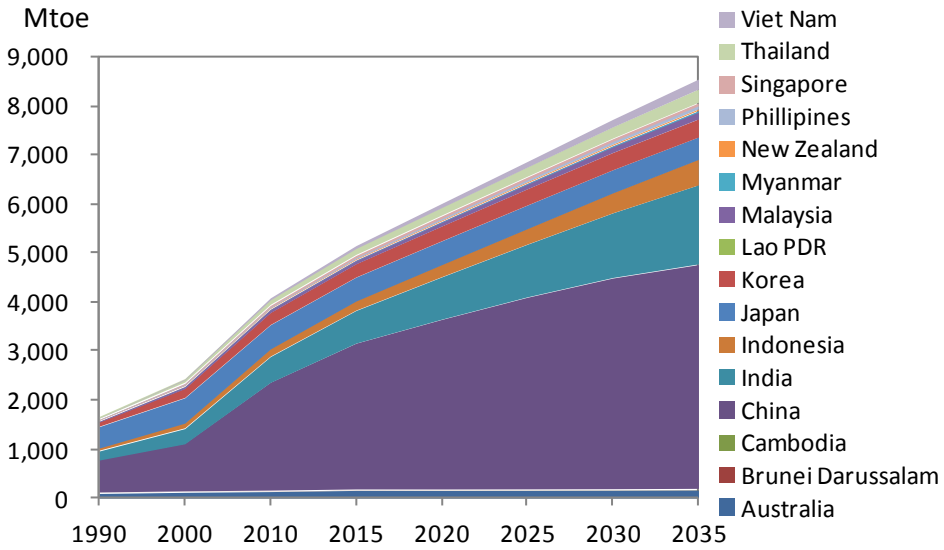
Based on the analysis of the previous chapters, this chapter will look into the perspectives of natural gas demand, supply, and international trade in and for the EAS region. The first part will present ERIA's demand outlook in the EAS region. The second part will explain supply perspective in the region based on IEEJ scenario with inputs from member countries. Taking into account the supply/demand perspectives, the last part will look at the possible picture of international trade in the region and with external regions via pipeline gas and LNG.

Demand

With robust economic growth and population expansion, the EAS region will consume substantially more energy in the future. According to the outlook by ERIA,[1] the primary energy demand in the region will increase at three percent per annum from 4,079 MToe in 2010 to 8,536 MToe in 2035. Although the ERIA outlook does not conduct worldwide forecast, there is consensus that Asia-Pacific, of which EAS countries cover the majority of energy demand, will drive world energy demand. China and, to a lesser extent, India will be the driving forces of the demand growth. Indeed, these two countries alone are expected to share as much as 73 percent of the total energy supply in the EAS region.

[1] 'Analysis on Energy Saving Potential in East Asia', Economic Research Institute for ASEAN and East Asia, http://www.eria.org/RPR-FY2012-19.pdf (accessed June 2013).

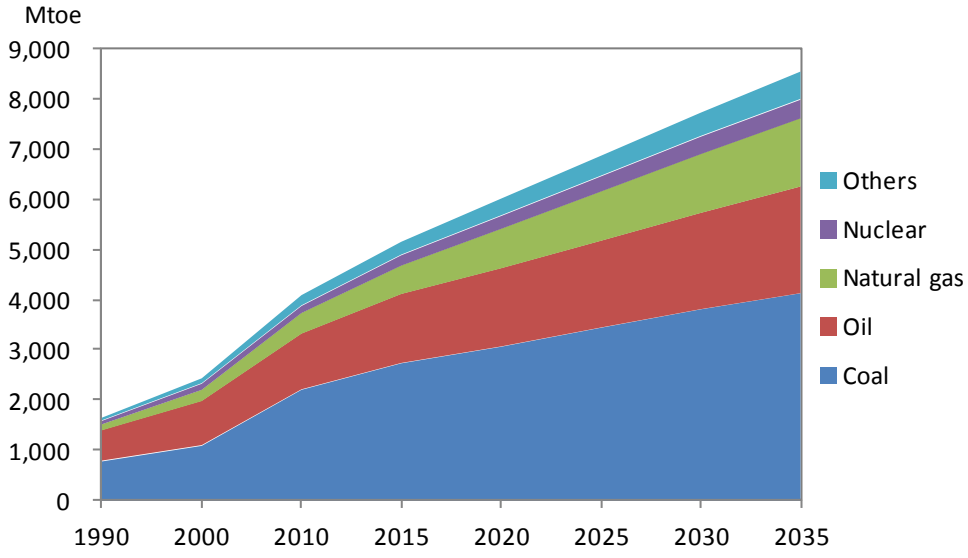
Figure 4-1 Primary Energy Supply in the EAS Region, by country



Source: ERIA.

As far as energy mix is concerned, coal will remain the main fuel for the region, reflecting heavy reliance on coal especially in China and India. Oil will take the second largest share of the total energy in the region, underpinned mainly by rapid motorization. Natural gas demand will grow fastest among the fossil fuels to reach 1,368 MToe (1,432 BCM) in 2035, sharing 16 percent of the total energy demand in the region.

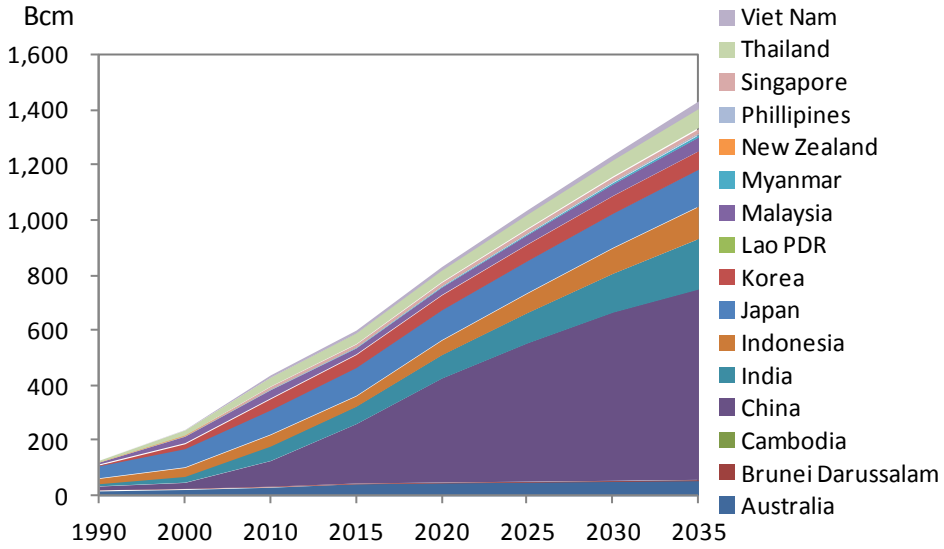
Figure 4-2 Primary Energy Supply Outlook in the EAS Region, by fuel



Source: ERIA.

Like primary energy supply, China and India will drive the natural gas demand in the EAS region. These two countries are expected to share 48 percent and 13 percent, respectively, of the total demand for natural gas in 2035 in the region, followed by Japan, Indonesia, and Korea.

Figure 4-3 Natural Gas Demand in the EAS Region, by country

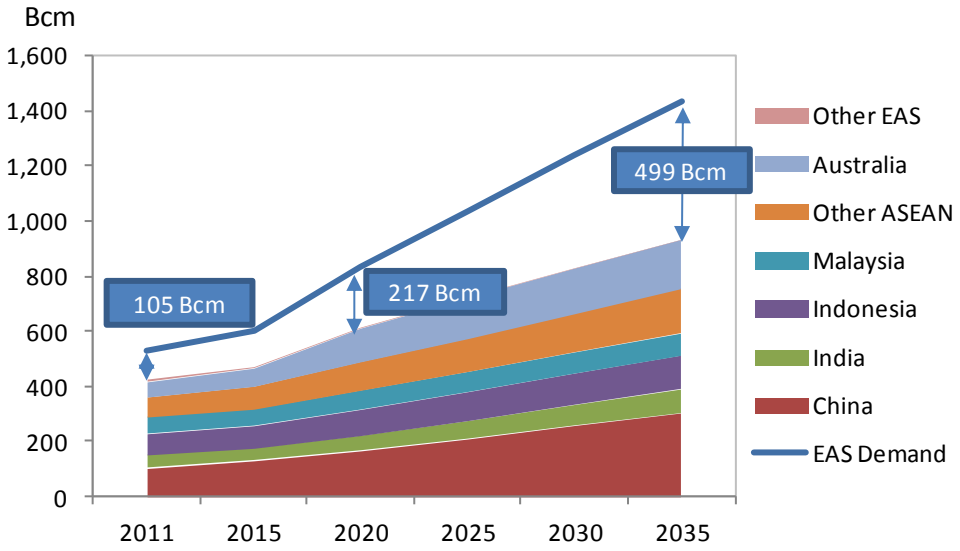


Source: ERIA.

Supply

The EAS region has substantial resource potential of natural gas, conventional or unconventional. Production in the region is, therefore, expected to increase steadily, especially in China and Australia as explained in Chapter 3. Indonesia, Malaysia, and other ASEAN countries will produce more natural gas in the long term, too. However, it is highly unlikely that regional production will be able to keep up with the demand growth. As a result, the dependency on non-EAS region will rise from 105 BCM in 2011 to 499 BCM in 2035, making the import dependency rate to reach 35 percent in the same year (Figure 4-4).

Figure 4-4 Natural Gas Supply Outlook in the EAS Region



Source: ERIA and IEEJ.

Northeast Asia—including China, Japan, and Korea as EAS member countries—is already heavily dependent on natural gas imports. Japan and Korea lack domestic production and international pipeline connections, and satisfy almost all the demand with imported LNG. With China's demand and import increase, Northeast Asia will be exposed to the international market even more in the future. Meanwhile, there is a sign of China shifting to pipeline gas imports. The country started to import pipeline gas from Central Asia in 2010 and from Myanmar in 2013, and reached an agreement to import from Russia in May 2014.

Inter-regional Trade

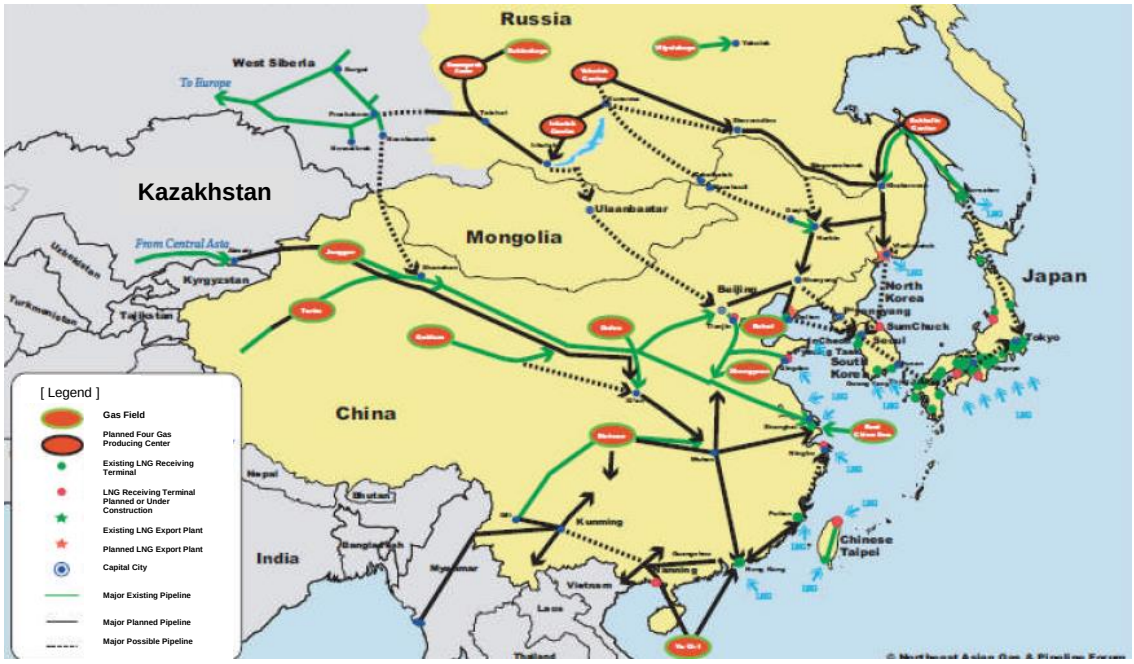
The EAS region already imports a substantial amount of natural gas from non-EAS regions, mainly the Middle East, and, to a lesser extent, Central Asia and Russia. Import dependency will rise significantly in the future. The above analysis presents that the EAS region might need to source 499 BCM of natural gas outside the region. Considering demand and supply projections,

this section will present the possible scenario in terms of inter-regional trade in the EAS region.

Pipeline Gas

Currently, only China imports pipeline gas from non-EAS countries.[2] The country started to import pipeline gas from Turkmenistan in 2010 and from Myanmar in 2013. Additionally, it has recently reached an agreement to import 38 BCM of pipeline gas from Russia soon. In the long run, the country could import 100–130 BCM of pipeline gas from these countries in 2035. There are also plans for pipeline gas imports into Japan and Korea, too.

Figure 4-5 International Pipeline Concept in Northeast Asia



Source: Northeast Asian Gas & Pipeline Forum.

India is another country that could import a significant amount of pipeline gas from non-EAS regions. The country has been in talks with Iran (IPI: Iran–Pakistan–India project) and, more recently, Turkmenistan (TAPI: Turkmenistan–Afghanistan–Pakistan–India project). Geopolitical and transit issues as well as price negotiations have been dragging the process, but both

[2] Statistically, Australia imported 11 BCM from Timor-Leste in 2012. The import is all from the Timor-Leste–Australia Joint Petroleum Development Area, not the pure jurisdiction of Timor-Leste. Thus, for convenience, this section does not consider this trade as import from a non-EAS country.

countries seem to be capable of exporting 90 MMscmd (31 BCM per annum) each while there is uncertainty as to how much gas will be consumed in transit countries, as far as the TAPI project is concerned. The Gas Authority of India considers that 14MMscmd (5 BCM per annum) and 38 MMscmd (13 BCM per annum) will be consumed in Afghanistan and Pakistan, respectively, and 38 MMscmd will reach India.

Figure 4-6 Pipeline Routes of IPI and TAPI Projects

Note : IPI = Iran–Pakistan–India, TAPI = Turkmenistan–Afghanistan–Pakistan–India.
Source: *Wall Street Journal.*

Liquefied Natural Gas

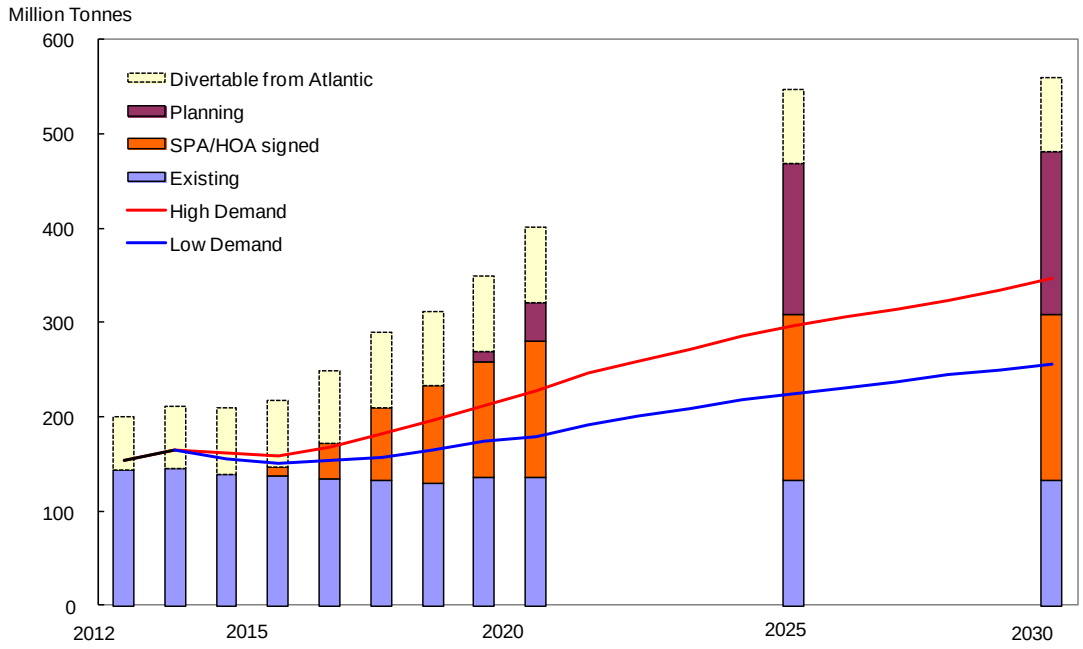
Whilst potential for pipeline gas imports is substantial, majority of non-EAS supply is expected to be in the form of LNG. According to IEEJ, LNG demand in the EAS region will increase from 155 MT (211 BCM) in 2012 to 255–346 MT (347–471 BCM). EAS countries—Australia, Brunei Darussalam, Indonesia, and Malaysia—supplied 65 MT, 42 percent of the demand, in 2012. Assuming all EAS LNG supplies will be consumed in the region, the dependency on non-EAS LNG supplies is expected to decrease to

33–40 percent in 2020, mainly thanks to capacity expansion in Australia, and to increase to 47–61 percent in 2030.

Although the demand will grow rapidly, there is ample supply potential internally and externally for the EAS region. Australia will add about 60 MT before 2020. The USA is expected to produce even more LNG around 2020, of which India, Indonesia, Japan, Korea have already committed to lift 33 MT per annum. In Canada, more than a dozen projects are in various stages of development, and more than 30 MT per annum could be emerged before 2025. Russia has a policy to supply more gas into Asia, and liberalise LNG exports in 2013. Several projects with a total capacity of also more than 30 MT per annum are either developed or studied by Gazprom, Novatek, and Rosneft, and with respective foreign partners. East Africa also has great potential. In Mozambique, a large-scale LNG project is under development to export 18 MT of LNG with target start-up year of 2018.

Considering the rich supply potential, the composition of non-EAS supply sources will depend primarily on competitiveness of those sources. Huge supply potential especially in North America, Russia, and East Africa, together with EAS supply increase, will likely ease the LNG market in the EAS region, and therefore to put downward pressure on prices especially towards 2020.

Figure 4-7 LNG Outlook in the EAS Region



Note :HOA = Heads of Agreement, SPA = sale and purchase agreement.
Source: IEEJ.