

IMPACT OF NEW WAVES OF LNG IN THE ASIA PACIFIC GAS MARKET : FUTURE OF LNG MARKET IN ASIA

Jinseok Sung
Gubkin Russian State University of Oil and Gas
Jinsok.sung@gmail.com

Overview

Launch of Queensland Curtis LNG in Australia was the start of major change in LNG market environment Asia Pacific region. Between 2015- 2019, production volume of least 140 million tonne per year will come online and start sending their LNG cargoes into global LNG market, especially to Asian market. Production volume of 140 million tonne per year will originate from Australia, Russia and USA. About half of the volume from USA will apply new pricing system, so-called Henry Hub indexation. Henry Hub indexation is a new pricing system, linking LNG price to NYMEX Henry Hub futures price, USA. Amid rapidly changing market environment, it is necessary how this change will affect exporting and importing countries. In my work, I especially focused on how new Henry Hub pricing system will affect LNG importers in Asian market and traditional LNG pricing system, "oil indexation".

Methods

Research was conducted in three different ways.

- (1) Analysis of market balance , demand-supply balance and possibilities of LNG over or under supply in the market.

Comparison of

- total existing production volume and new LNG supply into Asia Pacific LNG market in the short and medium term with demand trend of major importing countries.

- (2) Competitiveness of LNG indexed to Henry Hub and crude oil prices.

Competitiveness of LNG linked to Henry Hub and crude oil prices is studied at various levels of crude oil and Henry Hub prices. For the calculation of LNG price linked to Henry Hub in Asia, Sabine Pass LNG export pricing formula with Korea Gas Corporation is used. The formula is as follows

$P(\text{LNG}) = \text{Henry Hub price (NYMEX, in month of lifting)} * 115\% + \$3/\text{mmbtu}$ (Fixed fee agreed between Sabine Pass LNG and Korea Gas Corporation. Source : J.Stern, H.Rogers, 2014) + $\$3/\text{mmbtu}$ (Transportation cost from the Gulf of Mexico to the East Asian countries. Source: IEA)

- (3) How competitiveness of Henry Hub and crude oil price indexed LNG change when Henry Hub and crude oil price fluctuate at the same time. This method is useful to find out how market share and price-competitiveness of LNG from different exporters will be influenced at different levels of oil and Henry Hub prices.

Results

- (1) Market balance in the Asia Pacific LNG market

New LNG production volume of 140 million tonne per year to come online between 2015-2019 looks excessive. It is more than 50% of global LNG trade volume in 2014. After Papua New Guinea LNG and Queensland Curtis LNG started export in 2014, LNG spot price rapidly fell and it stands less than half of LNG spot price a year ago.

Considering slowing demand growth in China, decreasing import in South Korea and restart of nuclear reactors in Japan, competition in the market will be stronger and it is likely to keep LNG price at low level.

- (2) Competitiveness of crude oil and Henry Hub linked LNG in the Asia Pacific market

- ✓ At crude oil price < \$60

Crude oil indexed LNG Highly competitive

- ✓ At crude oil price \$60<P<\$70

Crude oil indexed LNG Largely competitive

- ✓ At crude oil price \$70<P<\$80

Crude oil and Henry Hub LNG Equally competitive

- ✓ At crude oil price \$80<P<\$90

Henry Hub LNG Largely competitive

- ✓ At crude oil price \$90<p<\$100

Henry Hub LNG Highly competitive

Conclusions

Combined factors of low oil price, much stronger competition caused by huge amount of new export projects, and introduction of new pricing system will hinder LNG price from returning to previous high level. Profitabilities of LNG projects will largely depend on crude oil and Henry Hub prices. In order for US LNG projects to be competitive in the Asia Pacific market, either crude oil price stays higher \$80/barrel or Henry Hub price need to keep on staying around \$3/mmbtu. At current level of crude oil price between \$40-\$70/barrel, the advantage may not be in hand of LNG indexed to Henry Hub.

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