

LPG Market under Shale Revolution (2)

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Under the progressing shale revolution, U.S. LPG production has increased substantially, indicating that the United States could greatly expand LPG exports and become the world's largest LPG exporter, eclipsing Qatar and Saudi Arabia, as explained in the previous report titled "LPG Market under Shale Revolution (1)". The predicted change may exert great impacts on pricing and price trends in the international LPG market.

The Middle East commands the largest share of global LPG exports, accounting for about 35 million tons or more than 50% of about 63 million tons in global LPG exports in 2011. The largest LPG importer was Asia, importing about 35 million tons, equivalent to the Middle East's exports. The Contract Price (CP) mechanism is a pricing approach that links the Middle East as the largest LPG exporter and Asia as the largest importer by working to price Middle Eastern LPG for the Asian market.

The Contract Price or CP is notified by Saudi Aramco, a state-run oil company in Saudi Arabia, to its trading partners based on crude oil price and spot LPG price trends. Saudi Arabia, though having been replaced by Qatar as the largest LPG exporter in the world, is still a large LPG exporter exerting great influences on LPG pricing. Since other Middle Eastern LPG exporters follow the CP, the CP mechanism is the most important pricing approach for international LPG trade, particularly LPG trade in Asia including Japan.

The CP mechanism has retained the most dominant influence on LPG pricing since its introduction in 1994. As mentioned above, the mechanism takes crude oil price and LPG bid price trends into account. Nevertheless, it fails to directly reflect the supply-demand balance in the LPG market and represents a price notified by a major LPG exporter. Therefore, Asian LPG buyers have occasionally called for a pricing mechanism to better and more precisely reflect the supply-demand environment for the LPG market. But the CP mechanism's position has remained unshaken.

Under such circumstance, a new move is emerging from the possibility of the U.S. LPG export expansion. This is because reference LPG prices in the United States are set at Mont Belvieu (MB) in Texas based on the LPG supply-demand balance, just as reference U.S. natural gas prices are determined at the Henry Hub based on the natural gas supply-demand balances. MB represents a

market reflecting the supply and demand environment for LPG as a commodity and amounts to the Henry Hub for natural gas.

MB prices have dropped substantially particularly since the second half of 2011 due to rapid LPG supply and demand environment changes where the substantial output expansion and oversupply have prompted many LPG export projects to be considered. MB LPG prices have recently been around \$400-500 per ton against around \$800 per ton in mid-2011. Meanwhile, CP prices have remained around \$900 per ton amid a crude oil spike, widening their gap with MB prices. In a similar development in the natural gas/LNG market, Henry Hub natural gas prices have dropped under the shale revolution and widened the gap with Asian LNG prices that are linked with crude oil prices and which have risen sharply.

In this respect, it is important that expanding LPG output and robust LPG export projects under planning are expected to lead the United States to become the world's largest LPG exporter, surpassing Qatar and Saudi Arabia. The actual market conditions and market players' speculations about future conditions have already begun to exert impacts on pricing and price trends in the international LPG market.

Given the present MB prices at \$400-500 per ton and a U.S.-Asia transportation cost of \$200 per ton, Asian buyers can be expected to procure U.S. LPG at \$600-700 per ton based on MB pricing, far below present CP levels. The estimated U.S. LPG procurement cost is sufficiently attractive for Asian buyers striving to reduce costs. Therefore, Japanese and other Asian LPG market players have paid attention to the LPG market developments and launched efforts to procure LPG from the United States.

Such moves of Asian LPG buyers have naturally become a great matter of concern to LPG-exporting Middle Eastern countries, indicating that strategic considerations could be given to CP levels and the CP mechanism. The U.S. LPG output expansion under the shale revolution has become a leverage to shake the traditional LPG market through various mechanisms. As is the case with natural gas and LNG, simple estimates like those given above may not necessarily be appropriate because future crude oil price, CP and MB trends for predicting the future LPG market are uncertain. Nevertheless, LPG stakeholders have already begun to take specific strategies and actions while watching the market changes.

While U.S. LNG exports' implications for Asian LNG price and pricing trends have become a high-profile topic, LPG market changes have been dealt with less remarkably. Given that these changes are important ones involving supply and demand and prices for LPG as an energy familiar in people's daily lives, that the LPG market is moving in a manner to predict future natural gas and LNG market changes, and that LPG market developments can be expected to become an important harbinger of the shale revolution's various implications, however, I would like to pay great attention to LPG market developments.

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