

Ongoing U.S. Shale Revolution and Its Impacts on Asian Energy Market

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On April 6 and 7, I had an opportunity to frankly discuss the U.S. shale revolution's impacts on the international energy market including Asian oil and gas markets and on the U.S. economy and international competitiveness with foreign experts such as Prof. Jason Bordoff, founding director of the Columbia University Center on Global Energy Policy, at a workshop and others. In the United States, the shale revolution began with massive expansion of shale gas output and achieved a rapid shale oil production increase in an unprecedentedly short period of time in international oil market history. As is well known, the massive oil and gas production expansion is one of the major factors behind the current oversupply in the international energy market symbolized by the crude oil price plunge. My discussions with the foreign experts dealt with what impacts the U.S. shale revolution has exerted and would continue to exert mainly on Asian oil and gas markets. Interesting discussions were made on the issues from various perspectives. In the following, I would like to summarize some points of the discussions that were impressive to me.

First, American participants frequently noted that the basic U.S. perception on energy problems and policies has dramatically changed through the shale revolution. The basic perception has changed from energy "shortage" before the revolution to "abundance" after the revolution. This change in perception has brought about the loose energy supply-demand balance and the energy price plunge as fundamental changes and become a basic factor that supports the expansion of U.S. liquefied natural gas and oil exports and a policy change to continue to support the expansion. The most symbolic development may be the U.S. decision last December to lift a ban on crude oil exports.

U.S. energy policies had basically addressed energy shortage after the oil crises in the 1970s. Under the loosening energy supply-demand balance and price falls, however, how to take advantage of abundant supply has become a key point in energy policy and diplomacy in US. While discussions on whether to lift the ban on crude oil exports were made from various perspectives including legal, institutional, economic and technical problems, the basic perception shift mentioned above played a great role in leading to the final decision to approve crude oil exports. As far as the current basic perception remains unchanged and the development and production of abundant shale gas and oil resources are supported by the U.S. oil and gas industry's dynamic activities and the presence and expansion of infrastructure, the world, including Asia, can continue to expect great supply potential and supply sources contributing to the diversification of the energy supply-demand and market structure.

Second, the shale revolution has greatly benefited Japan and other Asian energy importing countries by helping to ease the energy supply-demand balance to lower oil and LNG prices and leading the energy market to change from a seller's market to a buyers' market. When crude oil prices remained above \$100 per barrel on average for three and half years from 2011 to the first half of 2014, LNG prices rose to \$16-18 per million British thermal unit in Japan where LNG prices were mostly linked to crude oil prices. The LNG prices in Japan were far higher than the U.S. benchmark Henry Hub gas price of \$2-3/MMBtu, highlighting the so-called Asian LNG premium. Then, Japan was forced to buy massive LNG and oil to make up for a loss of nuclear power generation as nuclear power plants were shut down following the Fukushima nuclear plant accident. This led to the problem of national wealth outflow while energy price hikes dealt a severe blow to corporate earnings and national livelihood.

However, the massive shale oil production expansion has eased the supply-demand balance in the international oil market. To counter the shale oil output expansion, the Organization of the Petroleum Exporting Countries and its leader Saudi Arabia shifted to a policy of giving priority to maintaining their market shares. The result has been the crude oil price plunge. As a matter of course, the crude oil price plunge has automatically led to an LNG price plunge in Asia and Japan. The recent average LNG import price for Japan has slipped below \$8/MMBtu.

In addition, LNG projects, which took much time for planning and government approval amid the shale gas production expansion, are reaching the production phase, with some of them starting supply to the market. After the Sabine Pass project achieved its first shipment last February, other LNG projects will launch production one after another toward 2020. US projects with construction permit have a total LNG export capacity of more than 60 million tons, close to that of Qatar, the largest LNG exporter in the world. With Australia, where new LNG projects were finalized amid high prices and are reaching the production phase, the United States is vying for the position of the world's largest LNG exporter. Meanwhile, the LNG market supply-demand balance has substantially eased on slowing demand that has accompanied China's economic growth deceleration. Spot LNG prices better reflecting the supply-demand balance have slipped to around \$4/MMBtu at last in the Asian market.

The U.S. LNG export expansion will not only contribute to an increase in overall LNG supply and the diversification of supply sources but also greatly affect the market structure by diversifying pricing formulas with prices having no link to crude oil prices and by increasing supply flexibility through the absence of the destination clause. As a matter of course, we now see a new situation where it is uncertain whether U.S. LNG's landed cost linked to benchmark Henry Hub prices are lower than traditional Asian LNG import prices linked to crude oil prices after the oil price plunge. Nevertheless, the U.S. LNG export expansion will have numbers of important advantages as mentioned above, continuing to have great significance for major LNG importing countries such as Japan.

In the discussions, American experts questioned why Japan and other Asian energy

consuming countries must diversify energy and supply sources in the current international energy market environment where supply is abundant, why they continue seeking to enhance political and economic relations with oil producing countries and why they proactively promote upstream investment and secure overseas energy interests. We also discussed the possibility that the prolonged weakness in energy prices amid the current oversupply dominating the market would discourage energy companies from investing in energy supply and lead to a tighter supply-demand balance in the future. In this regard, the Asian energy market environment will remain filled with great uncertainties and challenges. How the shale revolution will develop in such an environment will continue to be one of the most important points for Asia.

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