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Continuing Expansion and Future Direction of U.S. Oil and Gas Production

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When I toured Europe and the United States from November 27 to December 4, I had opportunities to exchange views with experts on oil, gas and nuclear issues on a wide range of topics. Regarding Japan, topics included energy policy reform, the possibility of restarting of nuclear reactors, and additional oil and LNG demand. I and these experts discussed a very wide range of other topics including major countries' nuclear energy development after the Fukushima nuclear crisis, Iran's nuclear arms development, the Middle East and North Africa situation after the "Arab Spring", its impact on international energy markets, the benchmark West Texas Intermediate crude oil futures price's renewed rise above $100/barrel and other energy price hikes and their background, natural gas development in Russia, Australia and the Middle East, and relations between oil prices and financial/speculative factors.

I then paid particular attention to changes in U.S. energy supply and demand, including oil and natural gas supply and demand. The changes mean the expansion of unconventional resources development and new events in the United States, which have exerted influences on oil and gas supply and demand, nuclear energy development, and the conditions of other various energy sources in that country. These changes could also have influences on international oil and gas supply and demand.

China has replaced the United States as the world's largest primary energy consumer. The two countries' gap has been expanding due to a difference between their economic growth rates. As far as oil and gas as the most internationally traded energy commodities are concerned, however, the United States has remained as the world's largest market. Its gap with China in oil and gas consumption is still large, though narrowing. As a matter of course, major changes in the largest oil and gas market in the world are very significant when the international energy situation is considered.

As for the substantial expansion of unconventional gas production, the "Shale Gas Revolution" has become a buzzword. Advanced technologies including the combination of hydraulic fracturing and advanced horizontal drilling techniques have dramatically improved the economic potential of shale gas and other unconventional gas resources, leading to a substantial expansion in domestic gas production. As a result, the U.S. natural gas supply/demand balance has eased, contributing to an easier global LNG supply/demand balance and even an LNG supply glut. As the U.S. supply/demand balance eased, natural gas prices have slipped below $4 per million BTUs. A key point in our discussions was what would happen in the low-price environment.

In the U.S. energy market where market principles can work easily, energy prices tend to exert some feedback effects on both supply and demand. In the low-price environment, demand expands as a matter of course. The power generation sector's expansion of gas consumption has so far been conspicuous. Recently, however, the potential expansion of industrial gas consumption has been under consideration. Petrochemical companies could pay attention to the low gas prices and consider using natural gas for their operations. New demand could thus emerge for gas. Future gas demand may attract attention in relation to domestic industrial and employment problems as well as energy supply/demand problems. We may have to keep close watch on relevant future developments.

Meanwhile, the United States can choose whether to domestically consume or export gas. Paying attention to gaps between lower U.S. domestic gas prices and higher Asian levels, various companies are seriously considering exporting LNG. Given firm Asian demand, the United States is expected to continue considering LNG exports as a key theme. In this respect, we may have to closely watch future developments regarding U.S. domestic gas demand and prices. On the other hand, there are various opinions on how a continuation of low gas prices would affect gas development and supply. While technological advancement has served to cut development and supply costs, the current low prices have failed to provide incentives for expanding gas supply. Various views have emerged on whether low gas prices could be sustainable amid the abovementioned demand-expanding moves as well as the lack of sufficient gas development incentives.

In addition to unconventional gas development that has attracted global attention in the wake of the U.S. revolution, unconventional oil development may become a next major topic. As is the case with gas, shale oil and other unconventional oil production has rapidly increased on the strength of technological advancement (and oil prices sustained at high levels). An oil boom has reportedly emerged at the Bakken shale oil formation around North Dakota that has led the production expansion and at the Eagle Ford shale oil formation in Texas that is expected to expand production from now on. Upbeat forecasters project that unconventional oil production in the United States may increase by 2.5-3.0 million barrels per day by 2020. But the expansion of unconventional oil production in the United States has just started, with many factors remaining uncertain. At my latest meetings with U.S. and European energy experts, views were divided over how far the production would expand over a medium to long term. But an important point is that the production expansion has actually begun and is reaching a point where it is almost certain to continue.

Given that one of the U.S. energy policy objectives has been the reduction of dependence on oil imports, the domestic oil production increase is significant for the United States. Particularly, it is important that unconventional oil production has attracted attention and has become a target of expectations as a domestic oil output expansion means at a time when offshore oil production stagnates on last year's massive oil leaks in the Gulf of Mexico after continuing to expand amid an overall domestic oil output decline. An upward revision of U.S. oil output (in addition to a future fall in U.S. oil demand) means a decline in oil import demand from the United States, the largest oil market in the world, becoming a development that OPEC and other oil exporting countries cannot ignore. Relatively, the presence of the Asian market where demand is continuing to expand will grow more important for these oil resource-rich countries.

U.S. oil and gas output is most likely to expand thanks to the promotion of unconventional oil and gas resources development. Various scenarios are conceivable with regard to the pace and size of the expansion. At my latest meetings with U.S. and European energy experts, some indicated that the United States could replace Russia as the world's largest producer of oil and gas combined (in terms of oil equivalent basis) by 2020. Unlike Japan, the United States is a major energy power with rich and deep energy resources. We need to continue to pay close attention to the US energy supply/demand problems and policy.

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