

**Participating in IEA-IEF-OPEC International Symposium**

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On October 4, the International Energy Agency, the International Energy Forum and the Organization of Petroleum Exporting Countries cosponsored an international symposium on the natural gas and coal market outlook and challenges at the IEA head office in Paris. It was the first time for the three representative organizations regarding global energy problems to hold a symposium on this particular topic. More than 60 government officials, industry people and experts participated in the symposium where discussions took place in three sessions on “Recent natural gas market developments and outlook,” “Recent coal market developments and outlook” and “Financial regulation in gas and coal markets.” I here would like to summarize key points that impressed me through discussions at the symposium.

First, I felt it was timely and significant that the symposium took up natural gas and coal simultaneously and discussed market developments, future outlooks and challenges. It may be needless to say that natural gas and coal are important energy sources. Over recent years, particularly, we have seen such remarkable developments as the shale gas revolution for natural gas and a rapid increase in coal demand in Asia including China. The symposium provided an opportunity to discuss problems involving the two competing energy sources from a wide range of perspectives including their mutual and competitive relationship.

Second, I felt anew that the world energy market has made a major change regarding the abovementioned mutual relationship between gas and coal. The key word for the change is the U.S. shale gas revolution. As is well known, the shale gas revolution has exerted wide-ranging great effects on U.S. natural gas demand, gas prices and gas businesses. The revolution has had spillover effects on other areas than the natural gas market. It has exerted great effects on coal subjected to discussion at the symposium. Great impacts have been seen not only on the U.S. coal market but also on the international coal market. Specifically, rapid gas price declines have enhanced the price competitiveness of natural gas, prompting natural gas to replace coal which is the dominant fuel for the U.S. power generation market. The replacement has worked to rapidly reduce coal demand, making it difficult to secure sales outlets for coal in the U.S. market and resulting in a coal glut. Moves have emerged to secure coal sales outlets in the international market. Coal exports from the United States have massively flowed into China that has replaced Japan as the world’s largest coal importer. This is a major development regarding global coal trade. Under the circumstances, coal prices have declined globally. This phenomenon is a typical example of the U.S. shale gas

revolution's spillover effects on the entire world beyond the natural gas market.

Third, participants in the symposium frequently pointed out that energy market changes under the influence of the shale gas revolution have not been uniform but different from region to region. This was impressive to me. In this respect, particularly, the European situation and future developments will attract attention. Although various arguments were given on the IEA report about a golden age for natural gas at the symposium, the words "golden age" may not be suitable for Europe. The European situation was recognized at the symposium as tough for gas market players including gas producing countries and gas business operators. Since the shale gas revolution, the United States has benefited from the growing use of lower-priced gas, Asia has expanded gas demand in accordance with economic growth, and Japan has had special demand for liquefied natural gas following the March 2011 Great East Japan Earthquake. In contrast, Europe has seen a slowdown or decline in natural gas demand since 2011. Instead, it has seen a rise in demand for coal that has enhanced its relative price competitiveness. In Europe, demand is shifting from gas to coal in contrast to the U.S. trend. This situation was pointed out by many participants in the symposium. Although the growing coal consumption is expected to expand carbon dioxide emissions and cause problems and fears for Europe that is committed to positive policies against global warming, the low coal and carbon prices and the stagnant European economic and energy situation are behind the energy selection in the market.

Fourth, I would like to point out that symposium participants stated anew that China's moves will be very important as a factor that will greatly influence future international natural gas and coal market trends. China has more unconventional gas resources than the United States and a giant coal market accounting for nearly half of the global market. Such country's domestic gas and market development trends and gas imports are decisively important for future market trends. China has become a net importer of coal, as well as oil and natural gas, and has rapidly expanded coal imports to replace Japan as the world's largest coal importer. Future coal consumption and import developments in China will hold the key to global coal supply and demand, coal prices and carbon dioxide emissions.

Fifth, symposium participants impressively pointed to many uncertain factors for future natural gas and coal markets. Regarding the abovementioned China factor, future economic growth and energy policy developments are uncertain. Symposium participants noted there are various uncertain factors regarding how far unconventional gas resources could be developed outside the United States and how long the present U.S. gas supply/demand and price trends could be sustained. Uncertainties about the position of nuclear power generation after the Fukushima accident were also cited as a key factor. Some participants pointed to future uncertainties emerging from technological development in the energy production, transportation and utilization phases. I felt anew that we must take into account a large number of factors and uncertainties when anticipating future energy markets.

The IEA, IEF and OPEC had earlier sponsored international symposiums on oil market

outlooks and oil pricing problems. The latest symposium was significant in that the scope of discussions was expanded to cover natural gas and coal. In order to address energy problems plagued with uncertainties and many challenges, stakeholders should share awareness of the problems through frank discussions and improve and deepen their understanding and recognition of energy markets through efforts to share information and make market information transparent. The latest symposium might have become a new platform for promoting discussions between stakeholders and deepening their understanding of markets.

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