

## **Emerging Challenges in the European Energy Market**

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I visited London from April 29 to May 4 to participate in an international conference hosted by the Royal Institute of International Affairs, known as Chatham House, and discussed challenges in the recent international and European energy situation with energy experts. The discussions, although covering a wide range of problems, indicated the most important energy challenges for Europe. I here would like to take up two of the challenges.

The first challenge is Europe's energy mix. Energy mix discussions in Japan focus on the future of nuclear energy and how far renewable energy's share in total energy consumption should be expanded. On that front, Europeans are also conscious of nuclear and renewable energy in regard to the energy mix. In my view, however, European energy experts are now greatly interested in the relationship between coal and natural gas as indicated by my discussions with them.

European energy demand has generally remained slack amid a prolonged economic recession. Even despite the slack energy demand, coal demand has increased remarkably. Behind the coal demand growth, cheap coal has flown into the European market as the global coal supply-demand balance has eased. Slowing coal demand growth in China and other emerging countries and the U.S. shale revolution have caused surplus coal supply in the United States, leading the surplus coal to be imported into Europe. Stagnated carbon dioxide prices in the European Union Emissions Trading Scheme have also accelerated an increase in coal consumption.

While consumption of cheap coal has expanded in the power generation sector, that of less price-competitive natural gas has declined. As a result, natural gas fired power plants, including even efficient and advanced ones built recently, have been shut down in Europe. Also affecting natural gas consumption has been a policy-driven increase in renewable energy consumption. Natural gas fired power plants had been expected to serve as an electricity supply buffer when intermittent renewable energy supply increases. In fact, however, natural gas has plunged into a difficult position in the European energy market.

Expectations on natural gas have grown sharply in the world since the International Energy Agency's World Energy Outlook 2011 carried a special chapter titled, "Are we entering a golden age of gas?" As the shale gas revolution has made progress, with rich unconventional gas resources endowment proven in the world, natural gas has been expected to serve as "bridge energy" during a long-term shift to the far future featuring non-fossil energy's dominance or even as "destination

energy" continuing to play a key role for an even longer period of time. But the actual development has run counter to the expectations at least in Europe. I felt that European energy industry people, particularly natural gas market players, are frustrated with the gap between the expected role of natural gas and the reality.

In my latest discussions with European energy experts, a dominant opinion was that the competitiveness of natural gas should be enhanced to eliminate the gap. To this end, many European experts called for appropriately pricing each energy source's externality with regard to not only energy security and global warming but also environmental loads including air pollution (or for internalizing coal's externality for environmental loads). The opinion is theoretically correct. But the past European efforts indicate that the challenge may be difficult. In a wider context, how to appropriately treat the externality could be related to how far market principles should be left to solve energy problems. The best energy mix represents how to address energy security, environmental conservation, competitiveness and other challenges (externality) and will eventually be subject to policy intervention.

The second challenge is related to the Ukraine situation and energy. The Ukraine situation has remained tense since before my visit to UK. In eastern Ukraine including Donetsk, Russia supporters have occupied major facilities and the interim government's use of force against them has resulted in deaths and injuries. Tensions have also grown in southern Ukraine including Odessa. The Ukraine situation is being destabilized. As doubts exist about whether the planned May 25 Ukraine presidential election would be successful, geopolitical tensions over Ukraine have triggered great concern over security in Europe.

Under such situation, energy security has become a major problem in Europe. Europe, Russia and Ukraine have close interdependent relations through energy trade in which Europe receives natural gas supply from Russia via Ukraine. Therefore, growing tensions in Ukraine have led Europe to grow more conscious of security risks accompanying its dependence on Russian energy supply. As far as they have interdependent relations, they might have fully understood that using energy as a strategic leverage could amount to a double-edged sword that could have adverse effects on the user as well. But European energy experts were dominantly concerned that the level of priority given to energy security policy could increase further depending on future developments in Ukraine and their impacts on the energy or natural gas market. The impacts could widely affect the energy situation in Eurasia and the world beyond Europe.

On May 6, energy ministers from the Group of Seven Western industrial countries met in Rome and issued a joint statement calling for providing energy assistance to Ukraine and reducing Europe's dependence on energy supply from Russia. Particularly, the reduction of Europe's dependence on Russian energy supply is a long-term challenge with various problems. We will have to closely watch future energy situation developments, energy policy implementation and its impacts.

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