

## **Maintenance of Energy Market Order/Stability and Importance of Relevant Capacity/Functions**

Ken Koyama, PhD  
Chief Economist, Managing Director  
The Institute of Energy Economics, Japan

Energy is a resource that is indispensable for the civil life of all people and the stable maintenance of economic and social activities. Therefore, it is a very important challenge for any country to supply energy as necessary at reasonable prices stably or ensure stable energy supply and energy security. The maintenance of energy market order and stability is required for stable energy supply.

However, energy market order or stability cannot be guaranteed without relevant efforts. Historically, energy market order and stability have been threatened sporadically. Based on experiences with such threats, various initiatives to maintain market order and stability have been implemented. When energy market order and stability are shaken, supply and demand fluctuations become far wilder than assumed. Market fluctuations are triggered by changes in supply and demand fundamentals, upheavals in international politics and the global economy, or geopolitical risks. Risk events such as grave accidents in energy supply chains and natural disasters can also shake energy market order and stability.

As noted above, various initiatives have been implemented on the premise of risks that threaten market order and stability. Among them are those to increase the energy self-sufficiency rate for minimizing the impact of overseas risk events and diversify or decentralize energy supply sources and means in preparation for risk events. Initiatives to enhance relations with energy supply sources have also been implemented. Even if these initiatives are implemented, however, unforeseen contingencies cannot be prevented. Therefore, it is important to have contingency response capacity and preparations, and adequate and flexible capabilities and resilience to cope with contingencies. The problem is that the development and maintenance of such capacity and capabilities take massive costs. It is significant that reasonable political determinations or preparations are required for implementing the development and maintenance with such massive costs taken into account. I would like to consider these points based on specific energy market developments.

My personal view is that surplus oil production capacity and oil stockpile/reserves that work as safety valves on the occasion of an unforeseen contingency are particularly important for international oil market order and stability. As a matter of course, emergency demand control can be another safety valve. Saudi Arabia has the largest surplus oil production capacity and has cooperated with other members of the Organization of the Petroleum Exporting Countries to use surplus oil production capacity for increasing production to stabilize the international market in response to disruptions to oil supply and oil price spikes under a tightening supply-demand balance. However, it is not inexpensive to maintain oil production capacity developed with massive investment in preparation for flexible production expansion to cover supply shortages, instead of using the capacity

fully. Nevertheless, Saudi Arabia has given strategic priority to maintaining the largest surplus oil production capacity even at heavy cost, playing a role in defending market order and stability.

A representative oil stockpile/reserves initiative is a requirement for each member of the International Energy Agency to hold oil stocks equivalent to at least 90 days of net oil imports. While IEA member countries have adopted various approaches and means to meet the requirement, it has been very expensive for them to hold massive oil stocks in preparation for unforeseen contingencies instead of using them on the market. The requirement has been realized because the IEA members made political determinations or preparations to hold oil stocks even at heavy cost in consideration of their experiences with oil crises in the 1970s. Today, China, India and other emerging countries are proceeding with oil stockpile/reserves initiatives, indicating their recognition that it is important to hold stockpile/reserves even at heavy cost.

In fact, there is another major safety device for maintaining international oil market order and stability from a broader point of view. The safety device protects the safety of international oil trade flow by ensuring safe passage through major sea lanes and choke points as well as maintains the stability of the Middle East, a global oil production center. Since hegemonic Britain ceased to work as the safety device, the United States has long served as the device. However, an enormous cost has been required for the United States to do so. The stability of sea lanes and the Middle East is required for maintaining not only oil market stability but also global order. This is the reason the United States is the leader of global governance. However, recent U.S. moves seem to indicate that global governance arrangements have been shaken. The future course of global order and energy market stability are growing more uncertain.

Problems involving unforeseen contingencies to affect domestic market order and stability, as well as those to affect international market order and stability, are very important. In Japan, the Great East Japan Earthquake and the Fukushima nuclear power station accident in 2011 demonstrated that grave disruptions to power supply in the domestic supply chain brought about serious energy security problems for Japan. Before the disaster, Japan's energy security measures had given priority to international energy market supply risks. The disaster forced Japan to fundamentally change such approach.

The Hokkaido Eastern Iwate Earthquake on September 6 forced all fossil power plants in Hokkaido, including the 1.65 million-kilowatt Tomato-Atsuma power station, to halt operations, depriving some 2.95 million households throughout Hokkaido of power supply. The first ever blackout in the whole of Hokkaido exerted grave negative impacts on civil life and economic/social activities in the region. Later, the blackout was resolved for almost the whole of the prefecture. However, the mainstay Tomato-Atsuma power station was left inoperable and expected to take more time than earlier estimated to restore operations, making power-saving efforts indispensable for the immediate future. Rolling blackouts are also under consideration. The cause of the blackout will be investigated in the future. Given the importance of electric power for people's civil life, and economic and social activities, however, how to enhance stable power supply measures will have to be considered.

Although cause investigation results must be examined, main power supply stabilization measures will remain unchanged, including the diversification and decentralization of power sources, the securement of surplus power supply capacity and the enhancement of power supply resilience.

Given that power supply must match demand immediately, stable supply is difficult to secure in particular in the case of electricity. With such difficulties taken into account, commensurate investment and measures are required to enhance power market order and stability. Various measures will have to be considered and implemented, including the strengthening of interconnection links, the securement of power sources, their diversification/decentralization, energy-saving efforts and demand control. How to secure investment required for these measures in a deregulated/liberalized power market will have to be studied as an emerging and serious challenges for power market stability.

Contact: [report@tky.ieej.or.jp](mailto:report@tky.ieej.or.jp)

The back issues are available at the following URL

[http://eneken.ieej.or.jp/en/special\\_bulletin.html](http://eneken.ieej.or.jp/en/special_bulletin.html)