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YUJI NAKAMURA

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INSTITUTE FOR INTERNATIONAL POLICY STUDIES,
Toranomom 5 Mori Building, 5F,
1-17-1, Toranomom, Minato-ku, Tokyo 105-0001, Japan

Telephone: (03) 5253-2511
Facsimile: (03) 5253-2510

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IIPS PUBLICATIONS DEPARTMENT
Toranomom 5 Mori Building, 5F,
1-17-1, Toranomom, Minato-ku, Tokyo 105-0001, Japan

Telephone: (03) 5253-2511
Facsimile: (03) 5253-2510

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Why energy security now?

Over the past few years, the international oil market has become increasingly unstable. In particular, since the terrorist attacks of 11 September 2001, a number of different factors have caused a surge in oil prices, including the United States' "War on Terrorism" (specifically, the possible attack against Iraq); the tensions in the Middle East sparked by the Israeli-Palestinian conflict; Iraq's temporary suspension of oil exports; and the dispute involving Venezuela's state-run oil company. This has resulted in worldwide concern regarding energy security. Japan, which imports almost 100 percent of its oil from overseas and relies on the Middle East for almost 90 percent, must constantly be on its guard.

At the same time, a series of developments in the realm of the environment—the obverse side of the energy debate—have occurred. These include the ratification of the Kyoto Protocol (which Japan signed on 4 June), the holding of the World Summit on Sustainable Development (the Johannesburg Summit) in August 2002, the deregulation of the domestic electricity market, and progress in the continuing debate on the introduction of a "CO₂ tax" and an "environment tax." These raise the complex and challenging question of how to manage both energy security and environmental protection in the current protracted economic recession. To continue focussing solely on the domestic technical and economic aspects of this discussion, as has been the custom in the past, does not constitute an adequate response to this challenge. It is vital that these issues be examined comprehensively from political and strategic perspectives in a much broader international context. This is because, internationally, the issue of energy resources, such as oil, natural gas and nuclear power, is highly politicized.

Market orientation and the "commoditization" of oil

After the two oil crises which rocked the world in the 1970s, the 1980s and 1990s appear in hindsight as a period during which the market principle was at its zenith. The market principle refers to the ideal of trusting market mechanisms and keeping government intervention to a minimum. What were the factors that supported this golden age of the market principle?

Firstly, although they took some time to do so, market mechanisms were instrumental in resolving the oil crises of the 1970s. The two oil crises, the first of which occurred in 1973, brought about stagflation in the global economy. The developed industrialized nations overcame these crises, not by virtue of political or diplomatic might, but by the application of "market power" price mechanisms. Specifically, they responded by developing alternative forms of

energy and energy conservation. The oil crises came about because of the policy of the Organization of Petroleum Exporting Countries (OPEC) of using oil as a “strategic product.” The fact that these crises were resolved through the market engendered trust in market mechanisms.

Secondly, the collapse of the Soviet Union, which had been a great obstacle to market mechanisms for such a long time, can also be cited as a factor. Due to the failure of its planned economy, the Soviet Union collapsed in 1991 and, as the Commonwealth of Independent States (CIS), embarked on a path of conversion to a market economy. China likewise is now undergoing a similar process of transition to a market economy. In the oil market, meanwhile, the “commoditization” of oil has been proceeding at a rapid pace. In the 1980s, non-OPEC members such as the North Sea nations increased their share of oil production, thus reducing the dominance over the market held by OPEC, which treated oil as a “strategic product.” From the latter half of the 1980s through to 1999, the crude oil market developed steadily as the supply-and-demand situation for oil eased. Against this backdrop of the “commoditization” of oil, the types of contracts used in crude oil trading changed from fixed-price contracts to market-linked contracts. Energy issues no longer featured on the agenda of the summit meetings held by the major industrialized nations, and it was a time when awareness of energy security was probably at its lowest ebb. Some proponents of the market principle held the naive opinion that deregulation and liberalization of the oil market were the true keys to energy security.

The limitations of the market principle

Towards the end of the twentieth century, however, the limitations of the market principle became increasingly conspicuous. Those limitations were not simply attributable to “market failure,” which is inherent in a market economy, but also included the market’s inflexibility within the context of the times.

Firstly, in recent years the risk of markets raging out of control has increased substantially. With the end of the Cold War, progress has been made in the peaceful use of military technology. A typical success story is the progress of the information technology (IT) revolution that began in the United States. As a result of market globalization driven by the IT revolution, it has become increasingly difficult for central governments to control their markets. The financial crisis that struck Asia in 1997 is an example of markets running amok. Since the second half of the 1990s, the price of oil has been extremely volatile. Ten years after the end of the Cold War, the possibility of a war between nations has declined. As markets have globalized, however, the threat of asymmetrical conflicts, including those involving acts of terrorism, has increased.

Secondly, there has been increased interest in global environmental issues. It is far too risky to consider global environmental issues in a historical context and to rely on markets to resolve them. European countries are very positive about the Kyoto Protocol and it is interesting to note that center-left factions are skeptical of the market principle.

Thirdly, it is to be expected that regions and nations which do not appear to be *official participants* in the market economy will play leading roles in the energy market at the beginning of the twenty-first century. In what is rapidly becoming common knowledge among energy experts, Asia, particularly China, will emerge as the leading player on the demand side, while the nations of the Middle East will recover their share of oil production on the supply side. China became a net importer of oil in 1993 when its domestic oil production peaked; given its steady economic growth since then, China's oil imports are expected to increase rapidly. China currently accounts for around five percent of global oil demand, and this will double by 2020, by which time oil demand in the whole of Asia will represent around one-third of total world demand. (Although some people are pessimistic about China's economic growth outlook due to ethnic minority issues, political corruption and other problems, most observers expect China's economic growth to continue, boosted by the building of industrial zones near the core cities along the coast such as Shanghai and Shenzhen, China's hosting of the Beijing Olympics in 2008 and the holding of the Shanghai World Expo in 2010.) In the mean time, despite the recovery of oil production in the former Soviet bloc, as noted by some commentators, by 2020 the Middle East is expected to again be supplying over 50 percent of the world's oil—up from its current level of 40 percent.

There is, of course, no guarantee that China will always act rationally based on the market economy. Warning bells have been sounded many times over the past decade that China's energy demands may destabilize East Asian security. Some commentators point out that China is reinforcing its naval power in order to defend its sea lanes of communication (SLOCs) with the objective of securing transport routes from the Middle East, and that its desire to develop marine resources and increase its military presence in the South and East China Seas may prompt it to adopt a hard line in its unresolved territorial sovereignty disputes.

There is no guarantee either that the oil-producing nations of the Middle East will act rationally in an economic sense. In reality, the production records of OPEC members are not very reliable. Like Iraq, some Middle Eastern nations still want to use oil as a "strategic weapon". As indicated by the fact that 15 of the 19 young conspirators in the 9.11 terrorist attacks were Saudi Arabian by nationality, the rise in the unemployment rate among the young generation caused by the rapid growth of the Saudi Arabian population cannot fail to put the current regime at risk, even though Saudi Arabia is a moderate nation (which would welcome a stable oil market). Undoubtedly, some countries in the Middle East may make use of oil as a political weapon in some way in order to maintain their regimes.

Interestingly, it is not only the liberals of the center left who point out the limitations of the market principle; conservatives—the very proponents of "small government"—are also attacking them. This is because an out-of-control market would lead to threats to security. Economic globalization spurred on by the IT revolution and global-scale environmental issues have given rise to problems whose solutions will require complex and multi-layered measures that transcend the conventional confrontation between conservatives and liberals over the "distance" between market and government.

Strategic measures adopted by Europe and the United States

Concerned about the detrimental effects of the market principle on the energy market, the Bush administration announced a “National Energy Policy” on 16 May 2001. The United States faced serious energy problems in the second half of the 1990s, namely violent fluctuations in oil prices and the electric power crisis in California. These problems prompted a restructuring of energy security strategy by the government. The excessive increase in risk caused by the IT revolution and market globalization have robbed energy-related businesses of the will to invest in new facilities. Even the major oil companies, with their abundant cash flows, have shown a tendency to choose mergers and acquisitions (M&As) with companies that already own developed oil fields over the development of their own new oil fields and the construction of pipelines or oil refineries. In addition, increased interest in environmental issues has radically curtailed the development of land owned by the federal government. As a result, the United States’ dependence on imported oil, which stood at 35 percent in the 1980s, now exceeds 50 percent. As well as placing greater importance on the supply of energy, the National Energy Policy also emphasizes the role of the North American Free Trade Agreement (NAFTA) in increasing the level of US energy security. The United States is promoting the North American Energy Framework and is pursuing a “strategy of economic interdependence” in the Americas.

In Europe, energy security has always been an essential component of regional stability. This is a consequence of the historical importance of coal and steel to the countries of the European Union (EU). In the 1970s, the EU began to trade in natural gas with the former Soviet Union. In the 1980s, however, just as this trade was starting to bear fruit, the Reagan administration attempted to restrain it, so as to impede the Soviet Union. However, the countries of Europe established guidelines for trading with the Soviet Union and developed a stable system of energy supply. Currently they are proceeding to the next step and are addressing the liberalization of energy trading within the EU.

The challenges for Japan and its responses

Japan suffers from a major geopolitical handicap in that it lacks its own energy resources. During the oil crises, the situation became so serious that the very survival of the country was at stake. In the end, however, Japan’s response to its situation was more successful than that of any other country—a fact which served to bolster Japan’s self-confidence in the 1980s. Japan managed to achieve economic growth without a corresponding increase in energy demand. The energy demand elasticity of real gross domestic product (GDP) before the oil crises was greater than 1; however, in the years between the first oil crisis and the mid-1980s, it fell to less than 0.3.

At the beginning of the twenty-first century, it is worth pausing to assess how well Japan has been able to establish new energy strategies under these circumstances, as the unraveling of the market principle in the oil market becomes apparent. Certainly, since the Third Conference of the Parties (COP3), the emission of greenhouse gases has become a high-profile political issue. Deregulation of the electric power industry, structural reform of the Japan National Oil Corporation and similar topics are constantly in the news.

Since the media has chosen to focus on environmental protection, deregulation and structural reform, there has been insufficient debate on energy security, which cannot be resolved by the market principle alone. Japan's current oil supply structure, the result of a drive to rationalize its economy and a quest for cheaper oil, can be characterized as being almost completely dependent on the Middle East. As a strategic measure, Japan has boldly chosen to ratify the Kyoto Protocol, amidst confrontation between the US and Europe, without clarifying how it intends to play its part in realizing the protocol's objectives.

Again, it is Japan's fate that it must rely on other countries for most of its energy and food supplies. Given current circumstances, Japan cannot rely on the market principle alone to secure a stable energy supply. It is thus necessary to develop an energy strategy more in keeping with the times.

There are many factors to consider relating to Japan's energy security; however, I propose to concentrate on the two themes of *technology* and *interdependence*.

Dealing first with technology, the peaceful use of nuclear power is one of the greatest achievements of mankind in the twentieth century. To abandon nuclear power generation, simply because of the inherent risk to human safety, is to deny the progress of science and technology. It is a fact of life that progress in science and technology has always gone hand-in-hand with risk. Those working in the nuclear power industry are doing their utmost to minimize these risks. Nuclear power generation is highly significant strategically. It is indispensable because (1), as an additional source of energy it enhances a country's energy security by reducing its dependence on imported oil, and (2) as a source of energy which yields no CO₂ emissions, it may be seen as part of the solution to the problem of global warming. Since Japan is currently highly reliant on other countries for its energy supply, it must devote maximum effort to developing nuclear power technologies.

We must also not forget Japan's superior energy conservation technology and environmental technologies. Energy conservation technologies developed by the Japanese motor industry, for example the hybrid car, are among the best in the world. One theory has it that the reason why the United States is reluctant to introduce fuel efficiency regulations for motor vehicles is that its own automobile industry lags behind Japan in the area of fuel efficiency technology. Transportation will account for the majority of future increases in energy demands. The promotion of energy conservation technology will allow economic growth without excessive increases in energy demand. This too has strategic significance for Japan's energy security.

As for *interdependence*, this is the foreign strategy which Japan, dependent on imported oil and treasuring its anti-nuclear and peace principles, must adopt. The Middle East, although also part of Asia, is in truth very distant from Japan, both geographically and culturally. Japan, however, enjoys an advantage over Europe and the United States in that it has no history of "bad blood" with the Middle East. Since a sudden reduction in Japan's imports of Middle Eastern oil would be unrealistic in the short term, Japan should endeavor to avoid "a clash of civilizations."

There are still vast untapped reserves of natural gas in East Asia. It is a well-known fact that natural gas is a more environmentally sound source of energy than other fossil fuels. In addition, natural gas deposits are not concentrated in any single region in the way that oil is concentrated in the Middle East. This would allow Japan a wider range of energy sources. An East Asian natural gas pipeline network was proposed a long time ago; however, many problems remain unresolved, such as how the US\$100 billion such a project would require is to be raised, and how the infrastructure necessary to protect such an investment is to be established. Nevertheless, as the EU and NAFTA have already proved, the building of regional energy networks is no less crucial than finance, telecommunications and trade to economic growth and security. For a nation like Japan, with few energy resources of its own, the only way to survive is to make the most of its human resources to create new technologies. In terms of foreign policy, Japan must maintain national security by developing interdependent relationships with its neighbors and must adopt the role of a trade-oriented country in order to make its contribution to the world.

About the author



Yuji Nakamura was seconded to IIPS from Nippon Steel Corporation (NSC) as a Senior Research Fellow in January 2001. He majored in political economy at Waseda University and joined NSC in 1981. In 1983, he was seconded to the Institute for International Study and Training (IIST). From 1984 to 1988, he worked in the Expo department at NSC. Before joining IIPS, he was responsible for line pipe exports for natural gas trunk lines, mainly in Russia, the Middle East, the North Sea and Asia. While at IIPS, his research will focus on energy and environmental issues. Yuji Nakamura is also the author of IIPS Policy Paper 282E, “The Historical Flow of Black Gold: Two Approaches to Energy Security.”