



Korea's Pursuit of Energy Security

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Energy is a major national agenda around the globe. Many countries urgently stress a stable supply of energy amid growing competition in the international energy market and strive to diversify energy sources at the same time. Against this backdrop, the Republic of Korea (referred to as Korea throughout the paper) has recently launched a comprehensive strategy for energy security. This strategy aims at ensuring an energy supply to sustain Korea's economy in a sophisticated and harmonious manner. This article is an overview of diplomatic initiatives for energy security under the new Lee Myung Bak administration.

1. Assessment of the World Energy Market

Over the years, the world has experienced a steep rise in energy (i.e., oil and natural gas) prices. At the beginning of the 2000s, oil prices were about \$20 per barrel, but in March 2008, the monthly average prices at three oil markets (West Texas Intermediate, Brent, and Dubai) registered above or near \$100 per barrel. Some market analysts predicted that oil prices could reach \$200 per barrel. Such a hike in energy prices has structural causes. Among other things, demand for energy is larger than supply. Rapid economic growth in China and India has caused a surge in energy demand. Because the two countries are expected to grow at high rates over the next few years, energy demand will accordingly remain high. Moreover, the energy industry's inability to keep up with the rising demand is also part of the price hike. Because of low energy prices throughout the 1990s, the energy industry did not invest in expanding production capacity.

Recently, the weak U.S. economy has complicated the structural causes of the rising energy prices. The United States has been a preferred destination for investment. However, the weak U.S. dollar, resulting from low interest rates and large budget and trade deficits, forces investors to look for alternative investment opportunities, such as speculating in the energy market. Moreover, the weak U.S. dollar is worrisome because it tends to increase energy consumption. In countries whose national currencies gain value against the dollar, energy becomes less expensive and offsets the effect of rising prices on demand. The weak U.S. dollar raises oil prices by increasing demand for energy, and its side effects may be amplified beyond economic fundamentals.

In tandem with the economic factors, many geopolitical factors are at work. Political instability in major energy suppliers such as the Middle East, Venezuela, and Nigeria not only disrupts actual energy production but also leads to irrational market behavior. Geopolitics is already factored into the current energy prices, but the perception of further disruptions in energy supply lingers. This is one reason that we are not likely to see a sign of falling energy prices any time soon, although a possible recession in the United States generates such an expectation.

Besides those structural factors, two opportunistic factors keep energy importers on edge: resource nationalism in energy-exporting countries and international competition over energy. Motivated to capitalize on high energy prices, energy-exporting countries have introduced new laws to limit foreign ownership and to receive greater shares of the revenue from natural resource extraction by foreign companies. Sometimes those countries have threatened to expropriate foreign-owned assets. Heavy taxation on resource extraction by foreign companies has become another tool that energy-exporting countries are willing to use because it induces foreign companies to give up their assets by cutting deep into the companies' revenues. Because of resource nationalism, foreign investors operating in the extraction sector of developing countries are vulnerable, as they were in the 1970s.

In addition, international competition over energy is overheating and unfolding in the manner of a zero-sum game. Energy security has become a primary national agenda item in many countries, and the pursuit of it mimics a security dilemma. The Chinese government and state-owned firms have been very aggressive in securing energy across the developing world (e.g., in Africa and Latin America). China is known for exchanging enormous economic and political incentives—such as foreign aid for infrastructure

construction and exercise of the veto right at the UN Security Council—with special energy deals. Other countries are under pressure to follow suit in order to make up for their disadvantage in the energy market, and reciprocal bidding up will eventually leave no country secure about its energy supply.

2. Survey of Korea's Energy Security

Korea is currently ranked 10th in the world in terms of energy consumption. Korea imports 97% of its energy from abroad. Oil plays a major role, occupying the lion's share at 43.6% in 2006. For oil consumption alone, Korea is the fourth largest in the world, and 100% of crude oil is imported from overseas. The Middle East is the main supplier of crude oil (82%) to Korea. The share of oil as the primary source of energy consumption shrank significantly from 62.5% in 1995, and the reduced portion was picked up mostly by natural gas and nuclear power because the government encouraged it for environmental protection and convenience. Although the dominant source of energy is shifting in Korea, the country's heavy dependence on foreign supply remains unchanged.

The earlier statistics indicate that Korea's energy consumption is high for its economy (i.e., gross domestic product [GDP]), which is ranked 12th in the world. *Table 1* shows trends in Korea's energy consumption. In the 1990s, energy consumption grew at comparatively high rates (except for 1998, attributable to the Asian financial crisis), outpacing the nation's annual economic growth rates, whereas it grew at much lower rates in the 2000s because of the economic slowdown and the government's efforts to conserve energy. Korea's high energy consumption is related to its industrial structure. Korea's GDP largely depends on high energy-consuming industries such as steel, shipbuilding, chemical production, and cement, which started as part of government-led industrialization in the 1970s. High energy consumption has become one of the reasons, if not the most important reason, that Korea is planning on restructuring itself into a knowledge-intensive economy.

Table 1: Growth Trend of Primary Energy Consumption (Unit: %)

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
9.3	-8.1	9.3	6.3	2.9	5.1	3.1	2.4	3.8	1.3

Source: Korea Petroleum Association, 2007.

While the demand for energy increased rapidly in the 1970s because of industrialization, Korea experienced severe disruptions in oil supply and sharp rises in oil prices as a result of the two oil shocks during the same period. To cope with similar mishaps in the future, the Korean government adopted long-term measures to secure energy supply: petroleum stockpiling and overseas energy development projects, along with domestic offshore exploration. To this end, the Korean government founded the Korea National Oil Corporation in 1979. Since 1981, Korean oil companies, both state-run and private, have participated in 166 overseas petroleum exploration and production projects in 47 countries as of 2006. Currently, a total of 83 overseas exploration and production projects in 30 countries are in progress, and 8 of them look promising for energy production. Thanks to the overseas development projects, Korea's recoverable oil and gas reserves abroad reached 906 million barrels and 133.9 million tons, respectively, at the end of 2006.

Nonetheless, energy secured from overseas projects accounted for no more than 3.2% of the total energy import at the end of 2006. Conversely, that number is equivalent to Korea's rate of self-reliant develop-

ment, which is much lower than those of France (9%), China (14%), and Japan (10%). Such a low rate of self-reliant development has various causes, and some point to technological backwardness. Korea's technology for energy exploration and recovery is assessed to be at 40–60% of the levels of developed countries. The rate of self-reliant development will likely improve in the foreseeable future when newly acquired drilling sites in Vietnam and Brazil start to produce energy on a regular basis, which, in turn, will have the effect of stabilizing energy supply to a certain degree.

All in all, since the oil shocks in the 1970s, Korea has attempted to secure energy supply by participating in overseas energy development. However, such attempts often turned out to be less than successful. Korea's attempts to secure energy were geared toward immediate results and were easily reversible. The Korean government's commitment to overseas development vacillated with energy prices and further weakened amid the financial crisis in the late 1990s. And considering the scale of capital and technology required in the energy sector, Korean energy companies should have received steadier support from the government so as to build competitiveness in overseas energy development. Those unfruitful attempts were, to a certain degree, the outcome of the government's failure to make energy security an integral part of national interest, and the Korean economy bears the consequences now. Thus, there is an urgent need to devise a national energy strategy afresh, although the current conditions in the energy market seem to make it too late to do so.

3. Korea's New Energy Diplomacy: Principles and Strategies

On the basis of the aforementioned developments in the energy market and the assessment that the previous administrations' efforts to secure energy supply were insufficient, the new Lee administration has made energy security a national goal and has embarked on new action plans under the banner of energy diplomacy. Simply put, for Korea, energy diplomacy means a national effort to ensure the availability of energy at affordable prices. Energy security is of particular importance to President Lee because he was elected on a campaign to revive the Korean economy. To keep his electoral promise, President Lee is leading various economic reforms, and it would be unthinkable should his reforms be held hostage to energy insecurity even before getting off the ground. Energy security is a prerequisite for economic recovery in Korea.

Because the previous administrations attempted to secure energy supply, President Lee's call for energy diplomacy might not sound fresh. Nonetheless, President Lee's energy diplomacy is distinguishable from that of the previous administrations in the respects described next.

Principles

First among other things, energy diplomacy under President Lee will be more systematic and consistent. Systematic energy diplomacy means that there will be a switch from a traditional, short-term economic approach to a long-term strategic one. Energy is predominantly economic in nature as it is put to use for economic activities, but it can easily turn political as it is concentrated in a small number of countries and susceptible to manipulation. Thus, energy diplomacy under President Lee's leadership will take such possibilities into account; it will be multifaceted and multilayered, combining market measures with extra-market measures. And consistency in energy diplomacy means that national efforts to secure energy supply will continue regardless of price decline. Although energy, like all other commodities, goes through price changes, energy is an indispensable element for economic activities. Thus, Korea will establish an institutional foundation to sustain efforts to ensure the availability of energy in the face of price fluctuations.

Second, the Lee administration defines the government's role in energy diplomacy as more supporting than leading, and it will coordinate closely with the private sector. This approach is proper because it is Korean energy companies that actually go abroad, develop energy, and market it. The Korean government's supportive role in energy diplomacy will mainly be (a) helping Korean energy companies overcome their disadvantages compared to their foreign counterparts and (b) mitigating political risks on the companies' behalf, which may arise from an increasingly competitive and volatile business environment. Although Korean energy companies are expanding their business overseas, they are still small players in the energy market with no cutting-edge or niche technology. Given their relative weaknesses, it could be profitable for Korean companies to move to more volatile frontier regions while avoiding competition with large international oil companies. Hence, the Korean government will focus on protecting the business opportunities of Korean energy companies overseas by mobilizing political ties, personal networks, and economic incentives.

The Korean government will also set up early warning and rapid response systems for hazards in volatile business environments. For successful energy diplomacy, coordination within the government will be strengthened as well. The ministries concerned with trade and investment will share information routinely: the domestic process for international negotiation, financing, and R&D in the energy sector will be streamlined.

Third, although Korea is embarking on new energy diplomacy, it does not mean to disrupt market mechanisms and compromise international norms in the name of securing energy. Energy diplomacy under President Lee's leadership is more about encouraging systematic and consistent efforts to secure energy rather than about further inciting international competition over energy. At his inauguration ceremony, President Lee said that Korea would be committed to upholding universal values such as democracy, human rights, and free market enterprise in the world. Accordingly, Korea's pursuit of energy security will be conducted in compliance with international norms. It will be preferable for Korea to develop energy in countries that share universal values. In the event that Korea develops energy located in countries that do not share universal values, which is more likely than not under the current circumstances, Korea's energy diplomacy will endeavor to minimize compromises with international norms.

In relation to conducting energy diplomacy in accord with international norms, it is worth mentioning Korea's foreign aid. The Korean government is on the way to augmenting foreign aid in terms of scale and scope. This approach largely stems from Korea's sense of membership in the international community; thus, it wants to fulfill its responsibility in line with its enhanced status in the world. However, because the expansion of foreign aid coincides with the announcement of energy diplomacy, there is a presumption that the Korean government will link foreign aid to energy deals.

To the contrary, the Korean government has reservations about doing so because of its commitment to international norms, although the Korean government does not rule out giving foreign aid to energy-abundant developing countries. If Korea offers foreign aid to those countries, it will be to reach out to them in a general sense, but not to exchange the aid for lucrative energy deals. With regard to how to conduct foreign aid, a consensus emerging in Korea is that foreign aid is for building partnerships with developing countries by helping them with their needs. Korea is, in a sense, investing in its own future. Korea's goodwill conveyed in foreign aid will lead to mutually beneficial relationships in the future.

Last, although Korea's energy diplomacy is driven by the necessity to secure energy supply at affordable prices, Korea is concerned about climate change and will fulfill its responsibility as a member of the international community. Global efforts to reduce carbon dioxide (CO₂) emissions by reducing the use of fossil fuels are intensifying. In harmony with the international community's efforts, Korea is taking various actions to curb demand for fossil fuels and thus reduce CO₂ emissions, though fossil fuels will remain

a dominant energy source for some time in Korea. Taking one step further, Korea puts the same or more emphasis on the development of alternative energy within its energy diplomacy that it does on fossil fuel energy sources. This emphasis makes sense because the development of alternative energy will not only reduce CO₂ emissions but also create new economic opportunities for Korea.

Strategies

Guided by these principles for energy diplomacy, the Lee administration has already started to take concrete actions in the following areas. First and foremost, Korea is strengthening and diversifying relations with energy-exporting countries. With Korea's traditional energy suppliers, such as the Middle East, Korea aims at upgrading the relationship of consumer and provider to one of cooperation and partnership over a wide range of issues. This action will have the effect of stabilizing the energy supply to Korea by increasing the value of Korea with respect to other countries.

Korea is also working to expand its energy cooperation to new energy-exporting countries in various parts of the world. On the one hand, this approach will help Korea reduce excessive dependence on the Middle East for energy supply; on the other hand, it will help Korean energy companies maximize their competitiveness. Given the level of economic development of those countries, the Korean companies may have more to offer to those countries with a packaged energy development project than major oil companies do.

In expanding cooperation with new energy-exporting countries, however, Korea cannot help but emphasize preventive diplomacy. Not all of the new energy-exporting countries are evenly suited for Korea's overseas energy development. Korea first has to identify energy-exporting countries that best address Korea's needs in terms of accessibility and friendliness. Particularly, because politics in new energy-exporting countries tends to be less predictable, a predisposition toward Korean investment is important. Korean energy companies may be more vulnerable to state intervention and exploitation than their foreign competitors because of their weaker position in the energy market. In new energy-exporting countries where a predisposition toward Korea is less obvious, the Korean government will exert itself to form an environment favorable to Korean investment. The Korean government will establish a comprehensive system of political risk assessment and of response to trouble in new energy-exporting countries. The government's recent decision to (re)open embassies in developing countries is the first step toward this assessment and response. Those embassies will build a network to monitor conditions on the ground and to identify opportunities for energy development in those countries.

In strengthening diplomatic ties for future energy cooperation, Korea is applying strategies tailored individually to energy-exporting countries. Korea will use different combinations of an energy development package, infrastructure construction, openings of embassies, summit meetings, and the like. For instance, Korea incorporates infrastructure construction and technology transfer (technical assistance) into energy cooperation with Algeria, Azerbaijan, Iraq, and Kazakhstan. With Bolivia, Brazil, and Peru, Korea seeks cooperation for bio-energy while diversifying energy suppliers. Recently, the Korean government has opened embassies in Bolivia, Cameroon, the Democratic Republic of Congo, and Kyrgyzstan. And more energy deals are likely to be finalized during summits. President Lee is willing to visit as many energy-exporting countries as possible in order to facilitate cooperation with them.

Among the energy-exporting countries that Korea hopes to partner with for energy cooperation, Russia is of great importance. In terms of the economic and geographical availability of energy, Russia appears to be an ideal partner for cooperation. The oil fields in eastern Siberia and the Russian Far East are still underdeveloped compared with western Siberia. Large international oil companies are almost absent in those regions because of high Russian mineral taxes and the Russian government's insistence that foreign investors be minor partners in energy development projects. However, for Korean energy companies, which

seek to participate both in the upstream and downstream phases of energy development, those terms could still be acceptable. And, from Russia's point of view, cooperation with Korea could be attractive because Korean energy companies have structural limitations to becoming major partners.

Furthermore, Russia is time-pressed to bring into production the energy resources located in eastern Siberia and the Russian Far East. While Russia heavily depends on energy exports for its economic growth, energy production from western Siberia is expected to plateau in the near future. Russia needs a significant amount of investment to tap into the energy resources in geographically complex and expensive regions. Cooperation with Korea could also diversify its distribution channels away from China. This diversification would make it attractive for Russia to devise a cooperation strategy with Korea.

In addition to energy itself, cooperation with Russia is important to Korea for inter-Korean relations. South Korea's concern over North Korea is not confined to North Korea's nuclear issue; in fact, South Korea is equally concerned about stabilizing the North Korean economy once the nuclear issue is resolved. To achieve economic stabilization, North Korea needs to undertake liberal reforms and to open itself up to the outside world. South Korea sees that tripartite cooperation among Russia, North Korea, and South Korea to build oil and gas pipelines from the Russian Far East to South Korea through North Korea would contribute to revitalizing the North Korean economy. If the Trans-Siberian Railway is connected to the Trans-Korean Railway, such a revitalizing effect could be doubled. Thus, energy cooperation between Korea and Russia not only could expedite energy development in eastern Siberia and the Russian Far East but also could help solve North Korea's economic problems.

The second area of energy diplomacy that Korea is working on is international cooperation. Korea is well aware that energy is not a problem that it alone can solve. Thus, Korea has been active in forming an energy forum in Northeast Asia and will continue to do so. Energy security has become a national priority for Japan and China, as well as for Korea. The negative effects of overheated competition can be seen in the bitter competition between China and Japan over Trans-Siberian pipeline construction. While countries accept the inevitability of competition, it would still be in the interest of the energy-thirsty Northeast Asian countries to cooperate in order to manage the intensity of competition.

The Korean government has proposed tripartite dialogue on energy issues among China, Japan, and Korea with a view to converting competition into cooperation. Potential cooperation among the three countries could include common strategic petroleum reserves, energy development, and security of the sea lanes for energy transportation. Concerted efforts in the area of energy might lay a foundation for peace and prosperity in the region by creating a new driving force for sustainable development.

The Korean government has also proposed a six-party ministerial roundtable for energy issues (with China, Japan, Mongolia, North Korea, and Russia). Though the realization of these talks is not clear thus far, owing to the lukewarm responses from the concerned parties, there is no doubt that cooperation among energy consumers is a proper way to manage rising energy prices.

Korea is also interested in expanding cooperation for energy stability to a wider region. This idea is expressed in building an "Energy Silk Road," which connects Europe and Asia. If this goal is achieved, oil and gas developed in Central Asia and eastern Siberia can be conveniently delivered anywhere in Asia and Europe. Furthermore, because stakes will be widely dispersed among a number of countries and will cross-cut one another, market manipulation by a few energy suppliers will become less feasible, which will, in turn, stabilize energy prices.

Another idea that signals Korea's interest in energy cooperation in a wider region is a Trans-Asia Energy System (TAES), which was conceived in collaboration with ESCAP (UN Economic and Social Commis-

sion for Asia and the Pacific). The TAES is regional cooperation based on the trade of various types of energy, such as fossil fuels, electricity, nuclear power, and alternative energy. As much as Asia is diverse in terms of economy and geography, the energy needs of Asian countries are diverse too. Thus, the TAES is intended to meet, in a mutually beneficial way, the diverse energy needs in Asia.

Last and with equal emphasis, Korea is addressing the issue of climate change through multilateral cooperation. In Korea, as of 2006, renewable energy accounted for 2.26% of total primary energy consumption, 92.7% of which was generated from waste and hydro. Korea aims to increase its share of renewable energy in primary energy consumption up to 5% by 2011 and 9% by 2030. However, because Korea's technology for producing renewable energy is at the 50–70% level of that in developed countries, it is necessary for Korea to strengthen cooperation with such countries in developing renewable energy that is suitable. Currently, Korea is taking part in multilateral technological collaboration for climate change such as the International Thermonuclear Experimental Reactor.

In an effort to have a low-carbon Korean economy, Korea is also actively participating in post-Kyoto international dialogue and norm-building for climate change and renewable energy. Those dialogues in which Korea is active are the Renewable Energy and Energy Efficiency Partnership, International Partnership for the Hydrogen Economy, Asia-Pacific Partnership on Clean Development and Climate, and International Energy Agency/Committee on Energy Research and Technology. Korea is giving serious consideration to joining the International Renewable Energy Agency, which is led by Germany. And to properly gauge Korea's role in reducing CO₂ emissions, Korea seeks to cooperate with similarly positioned countries such as Switzerland and Mexico and to form a common position toward climate change negotiations. In relations with developing countries, Korea is stepping up to incorporate the Clean Development Mechanism into its overseas investment and foreign aid.

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