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Serious Deterioration of Air Pollution in China and Need for Energy Measures

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Air pollution in China has been deteriorating growingly. In the morning of February 28, the density of the particulate matter (PM) 2.5 pollutant reportedly reached a little more than 500 micrograms per cubic meter, about 14 times as high as Japan's maximum allowable limit of 35 micrograms on a daily average basis. The rise in the PM 2.5 density pushed up the air quality index in Beijing to the worst level among its six levels, indicating a serious pollution incident. Even central Beijing was filled with smog enough to affect visibility. Some flights to and from Beijing Airport were cancelled and expressways were shut down at various locations.

Air pollution had eased temporarily during the Chinese New Year holiday week. But the pollution is believed to have deteriorated rapidly as economic and civic activities returned to normal, with plants near Beijing resuming operations and with normal vehicle traffic restored, under unfavorable weather conditions after the holiday week. This is because the PM 2.5 pollution is suspected as stemming from sulfur and nitrogen oxide emissions accompanying coal and oil consumption. In the metropolis of Beijing, emissions from vehicles are the biggest pollution source.

In January, the Chinese government announced that the PM 2.5 pollution had spread over 1.43 million square kilometers (about four times as large as Japan's land area). Tiny PM 2.5 particles can invade the lungs and other respiratory organs and are expected to increase the risk of respiratory diseases. The PM 2.5 density rise or growing air pollution has become a grave environmental problem posing threats to Chinese citizens' daily life. Before noon on February 28, strong winds blew smog away from Beijing. Instead, a yellow dust storm hit the Chinese capital and was coupled with the PM 2.5 pollution to deal a double punch to the city. The problem is that the air pollution, which has grown more serious for China, could have caused cross-border pollution affecting Japan and other neighbors. PM 2.5 density increases have been reported in western Japan including Kyushu since January, leading Japanese people to grow more concerned over the problem.

As noted earlier, the PM 2.5 density rise is closely linked to consumption of fossil fuels including coal and oil. Chinese fossil fuel consumption has increased rapidly due to remarkable economic growth and rising levels of living, leading to deteriorating air pollution as an environmental problem. The situation is similar to what was seen in Japan in the 1960s, including a

serious pollution problem amid high economic growth. As Japan began to tackle pollution in a full-fledged manner after seeing the problem's deterioration, China may have to address the air pollution problem more seriously in the future.

In this sense, environmental measures are expected to grow even more important in China, prompting energy measures to be implemented in a full-fledged manner as well. Specifically, China will further promote energy conservation and accelerate the diffusion of clean energy technologies. China has given priority particularly to energy conservation under its energy policy. In March 2011, it announced its 12th five-year development plan seeking to reduce energy consumption per GDP unit by 16%, nitrogen oxide emissions by 10% and sulfur oxide emissions by 8% by 2015. While working to steadily achieve these targets, China may even accelerate energy conservation efforts.

Regarding clean energy, China may undoubtedly enhance efforts to replace coal, which accounts for a great share of energy supply in that country, with other energy sources (to cut coal's share of energy supply) and promote cleaner use of coal. These efforts had been given priority even before the air pollution problem became serious. Now that the problem has become so serious, China may not remain satisfied with the past efforts. Particularly, expectations may grow stronger on natural gas as a cleaner fuel to replace coal. If China enhances a shift to natural gas to help solve the air pollution problem, it may exert various impacts on Asian and global natural gas/LNG markets. Therefore, we may have to pay attention to such Chinese move. It is also important to closely watch the possibility of China expanding renewable energy and nuclear power generation amid its efforts to strengthen measures against air pollution.

China will also have to improve quality specifications of petroleum products to help reduce pollutant emissions from automobiles. Regarding the quality of gasoline and diesel oil, China has toughened regulations on sulfur contents. But Standard V (limiting the sulfur content in gasoline to 10 ppm), which relates to the European Union's EURO5 standard, has yet to be implemented in the whole of China excluding such major cities as Beijing. On February 6 amid the current deterioration of the air pollution problem, however, the State Council decided to fully introduce the standard by 2018. Over the coming five years, oil and auto industries will be required to implement massive investment to improve fuel quality.

The deterioration of environmental problems serves a driver to enhance energy measures. Rather than long-term efforts to tackle the global warming problem, urgent efforts to address air pollution and other environmental problems that visibly affect human life and health are apt to be given top priority. Energy measures to help solve such urgent problems tend to be promoted more strongly. This is the case with the current deterioration of China's air pollution problem, which could provide a turning point for China's improvement of the energy supply/demand structure. The improvement has a potential to dramatically change international energy supply and demand, attracting much attention.

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