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What Price Nuclear Zero for Japan?□□日本での原発全面廃止の代価は？

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Between 2012 and 2014 we posted a number of articles on contemporary affairs without giving them volume and issue numbers or dates. Often the date can be determined from internal evidence in the article, but sometimes not. We have decided retrospectively to list all of them as Volume 12 Number 30 with a date of 2012 with the understanding that all were published between 2012 and 2014.

Miguel Quintana

For the first time in 42 years, the portion of nuclear power in Japan's energy mix reached zero on May 5 with the shutdown of Tomari's unit 3, operated by Hokkaido Electric on Japan's northernmost island. Difficulties in obtaining local approval for the restart of two reactors in Fukui Prefecture, combined with delays in establishing a new regulatory agency for the nuclear industry, could force Japan to ride out the summer months of peak demand by relying exclusively on thermal plants and energy-saving measures – a prospect the government is already taking into account.

The government's drive to restart Kansai Electric's units 3 and 4 at the Ohi Nuclear Power Plant (NPP) in Fukui Prefecture, central Japan, has been slowed by several factors. Among them are the issue of "local consent", a condition imposed by the government before a plant is allowed to restart, strong criticism over the validity of safety checks imposed after the Fukushima accident, and doubts over the utility companies' assessment of power shortages if nuclear plants stay offline throughout the summer.



Ohi NPP Units 3 and 4

Since Prime Minister Noda Yoshihiko's announcement on April 13 that the government would seek the restart of Ohi, several high officials, led by Economy, Trade and Industry minister Edano Yukio, have visited Fukui and surrounding prefectures to convince local authorities that the plant could withstand a Fukushima-class seismic event.

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Deputy Cabinet Secretary for Public Affairs Shikata Noriyuki said that the government had "learned enough about the causes of the accident at Fukushima Daiichi and what needs to be done" to ensure the safety of Ohi NPP. Engaging local municipalities, he said, "is not based on legal requirements, but we are in a position to address local concerns by explaining the safety measures introduced after the nuclear accident."[1]

But opinion polls in Fukui indicate that local representatives and their constituents are still torn between concerns over the plant's safety and the economic consequences of maintaining idled reactors. A survey conducted in mid-April by national broadcaster NHK showed that although 54 percent of residents in the municipality hosting the plant backed the restarts, support fell to 32 percent in neighboring townships. A majority of respondents said the government had failed to "properly explain the safety" of putting reactors back online. At the same time, a nationwide poll by the Jiji Press news agency indicated that 58.8 percent of the public were opposed to restarts, with only 16.2 percent in favor.[2]

Authorities in the neighboring prefectures of Kyoto and Shiga, whose approval is not deemed strictly necessary by the government, continue to demand stronger guarantees and safety measures. They also question the idea that power shortages expected this summer call for an immediate restart of the Ohi plant, and want the government to demonstrate why the reactors must be restarted before the official inquiries into the causes of the Fukushima accident are complete.

The city and prefecture of Osaka – whose mayor is vehemently opposed to nuclear restarts and threatens to challenge the ruling Democratic Party in the next general election if it pushes ahead with the restarts – have submitted 8 conditions for restart to the government. They include the signing of safety agreements between power companies and prefectures within 100 kilometers of nuclear plants, and a new series of safety tests based on completely rewritten safety standards that would take into account the lessons of the Fukushima accident.

Shikata says that the government hasn't decided on a definite deadline for restarts, and that it remains committed to a "very intensive dialogue with a broad base of stakeholders," including Kyoto, Shiga and Osaka prefectures.

Supply-and-demand estimates under scrutiny

In late April, the 9 utilities operating nuclear plants presented their assessments of the supply-and-demand situation over the summer. Calculations were based on peak demand during the exceptionally hot summer of 2010, and included the effect of power-saving measures imposed on corporate and private consumers. Three utilities anticipated shortfalls: Kansai Electric (-16.3%), Kyushu Electric (-3.7%) and Hokkaido Electric (-3.1%). Figures for the remaining six ranged between +0.3% (Shikoku) and +5.2% (Chubu), with TEPCO at +4.5% and the national average at -0.4% percent.

Under pressure from several quarters, including the governors of Shiga and Kyoto, the

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Prime Minister's Office set up an independent committee composed of university professors and representatives of the private sector to validate the utilities' projections. On May 2, the committee revised Kansai Electric's estimates to -15%, citing greater expectations about the impact of power-saving measures. Its final report, expected by mid-May, will serve as a basis for the government's imposition of numerical objectives to reduce energy consumption over the summer in regions affected by power shortages.

Deputy Cabinet Secretary Shikata says that consequences of the failure to restart the Ohi plant before the summer is among the scenarios considered by the government. "Given the dire situation in terms of supply-and demand in the Kansai region, we think it's appropriate and desirable to restart Ohi. At the same time, we are assuming that no nuclear power plants will be operating, and that there will be a very difficult supply-and-demand gap." In that case, he says, the government will prepare "appropriate measures" to deal with the situation.

Besides Ohi, another factor shaping the case-by-case approval of nuclear restarts is the delayed creation of a regulatory body under the authority of the Environment Ministry, which would replace the Nuclear and Industrial Safety Agency (NISA) in approving the results of stress tests conducted by the utilities. Diet deliberations over the bill are stalled, with no clear prospects for its approval by the end of the current session on June 21. Some members within the ruling Democratic Party of Japan are calling for the restart process to be frozen until the new regulatory agency is in place.

According to national broadcaster NHK, the nation's 9 utilities operating nuclear power plants have submitted stress test results for 19 of their 50 nuclear plants. Only 3 have been cleared so far by NISA and the Nuclear Safety Commission (Ohi NPP units 3 and 4, as well as Ikata NPP unit 3, run by Shikoku Electric).

Consequences for Japan's energy policy

As long as nuclear plants remain offline, Japan will have to continue relying on thermal plants – and costly imports of coal, oil and natural gas – to compensate for the energy shortfall, with adverse consequences on the economy and the country's greenhouse gas emissions. In the short term, Japanese energy policy expert Paul J. Scalise believes that renewable energies "are not ready to replace what is known as a base load power source such as nuclear power (…) at a lower marginal cost. So what is replacing it is liquefied natural gas, imported from countries like Australia, Malaysia and Indonesia. Unfortunately, because Japan is such a large importer of LNG and coal, the price has been steadily rising month by month, and this is creating even more problems for the Japanese economy."[3]

Current energy mix estimates for 2012 put oil, coal and gas at 90 percent, with hydroelectric power at around 8 percent. According to International Energy Agency figures cited by the Associated Press, a complete nuclear shutdown will increase oil demand in Japan by 465,000 barrels a day, raising the daily cost of imports by about 100 million dollars.[4] Iida Tetsunari, Executive Director of the Institute for Sustainable Energy Policies, projects an increase in Japan's renewable energy to 30 percent by 2030.[5]

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The Noda administration understands that renewable energies are "more attractive as a long-term option," says Scalise. But that opinion is not shared by a large segment of the industrial sector, which continues to see nuclear power as an indispensable component of the energy mix. "The Japanese industry made it very clear that if they have to run their assembly lines, they cannot run the risk of having their power dispatched from an unreliable source such as renewable."

For the moment, the government appears to have accepted that restarting nuclear plants is not a foregone conclusion. "Public opinion could evolve over months and years," says Deputy Cabinet Secretary Shikata. "This is a continuing process in coping with the issue of power supply and demand, how we can ensure energy security, and energy sustainability. We need to be very comprehensive in addressing the nuclear issue in terms of our long-term energy mix."

This is an updated and expanded version of an article published in the May 4, 2012, edition of Nuclear Intelligence Weekly.

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Notes

[1] Interview with the author on May 2.

[2] See also the opinion poll conducted in Fukui and the Kinki region by the Asahi Shimbun (April 23).

[3] Interview with Australia's ABC radio, May 5, available here. Scalise was interviewed by the author in late March for an article on Japan's energy policy, available here.

[4] *Crisis-hit Japan mulls shift to renewable energy*, Asahi Shimbun (May 3, 2012), available here.

[5] Nagata Kazuaki, "New Push Should Be Made for Renewables," *Japan Times*, May 6, 2012 http://www.japantimes.co.jp/text/nn20120506a6.html

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