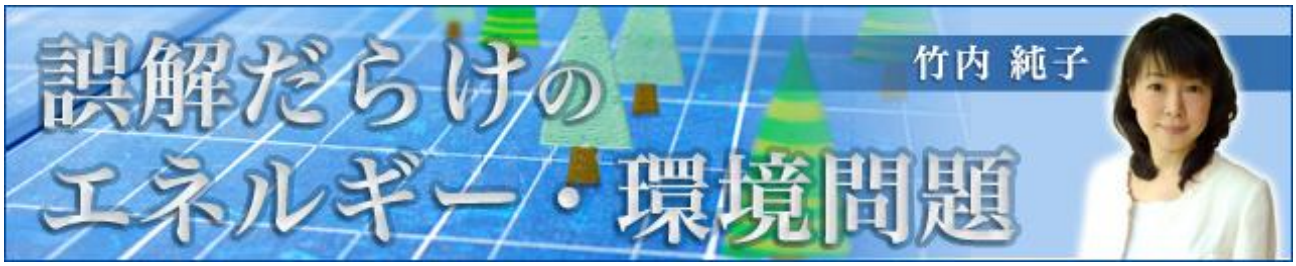

Is there a future for nuclear power in Japan?

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This is the third in a series of reports on Japan's energy policy.

Nuclear power has been considered quite beneficial in every aspect of the so-called 3E's (energy security, economy and environment) of energy policy.

But the damage from nuclear accidents can be catastrophic, in addition to the challenges posed by nuclear waste disposal. The Fukushima disaster has led to strong opinions that Japan should denuclearize, and this is still the case. I'd like now to focus on the future of Japan's nuclear power technology.

Nuclear power is, along with renewable energy, an important low-carbon power source.

The International Energy Agency and the Union of Concerned Scientists, which has been deeply worried about the risks posed by nuclear power, have reported that extending the operation of the industry's existing power plants would be the cheapest countermeasure to climate change, and the undeniable fact is that nuclear power is an important element in achieving substantial progress in decarbonization.

For Japan, which lacks fossil fuel reserves, nuclear is also highly advantageous in terms of energy security and supply stability. Japan relies on imports of uranium just like fossil fuels, but only a minuscule amount of fuel can generate a large amount of electricity. A recent attack on two tankers near the Strait of Hormuz caused a spike in oil prices. The two oil shocks in the 1970s caused pandemonium in the lives of the Japanese people, with power prices jumping 50 percent, but no one could guarantee a similar crisis would never strike again.

The fact is that the economic benefits of nuclear power have been losing their shine. Because of the sharp hike in safety standards imposed by the Nuclear Regulation Authority after the Fukushima disaster, exorbitant safety upgrades nearly equal in cost to building a new reactor are being installed at each site. To get a return on investment, this intensive capital spending will require long-term operation and high utilization rates, but the need to get local consent to operate and to respond to dozens of lawsuits from anti-nuclear residents is making stable operations difficult. Reactor operations are also capped at 60 years. Nuclear power could potentially be a source of cheap electricity, depending on the utilization rate and other conditions, but there's also a possibility it won't.

In addition, the supply chain that manufactures the delicate facilities required for nuclear plants is contributing to the technical strength of diverse industries in Japan. Though nuclear power is facing an uphill battle in terms of cost competitiveness, this does not mean Japan no longer needs its other advantages. The impact of the Fukushima disaster, however, was enough to completely overshadow the benefits. The majority of the public is still against nuclear power. In light of persistent public opinion, Japan's nuclear power business has been surrounded by three big uncertainties.

The first is political uncertainty. The administration of Prime Minister Shinzo Abe, despite its long-term stability, has not provided enough support to the nuclear power business. In addition, the government has entrusted the utilities with the job of gaining local consent.

The safety agreements that stipulate the rules of the industry, such as disclosure of information to the host governments, are not legally binding. But running reactors would be next to impossible without local consent based on such agreements. Whenever there's an election, the utilities are thrown into confusion, and if a new leader is elected, they will initiate communication from scratch.

The second is policy uncertainty. Japan has fully liberalized the retail power sector. In a liberalized market, reactors for which returns on investment have fully recovered could have high cost competitiveness, but there will likely be no companies that will take up the challenge of building new ones.

Since nuclear plants require huge capital, curbing fundraising costs to a low level would have a big impact on competitiveness, but cheap fundraising is something that cannot be expected in a liberalized market. The United States has introduced

government guarantees for reactor construction costs, while some states award zero-emissions certificate programs to nuclear plants. Britain also streamlines the business environment by guaranteeing a fixed price for power produced at such plants, but those systems have not been introduced yet in Japan.

Another thing spoiling operators' business outlooks is the nuclear fuel cycle policy. Uranium prices now are totally different from the time when Japan adopted a closed nuclear fuel cycle policy of recycling spent nuclear fuel, and it is difficult to maintain this policy now only from the viewpoint of economic efficiency. The direction of nuclear fuel cycle will have a major impact on the nuclear power business.

The third is regulatory uncertainty. It has become quite common for reactor safety reviews to take multiple years because of inadequate communication between utilities and regulators. The U.S. has a presidential executive order that stipulates regulation shall not be undertaken unless the potential benefits to society from regulation outweigh the potential costs of dealing with the regulation.

Though Japan has no such principles, appropriate oversight on regulatory activities is being called for to check whether the public is suffering from any disadvantages from unforeseeable regulatory activities. In the meantime, the finishing blow is the plethora of lawsuits that have been filed demanding the halt of nuclear power plants. Though the public right to access the courts is an important one, it looks rather peculiar that it is mostly the same plaintiffs and the same defense counsels who are lodging petitions at multiple district courts to seek the halt of one nuclear power plant.

When utilities are placed in such an uncertain environment, it is a foregone conclusion that the nuclear power business will become unsustainable and there will be no future for it in Japan. If Japan needs nuclear technology over the next few decades, we must urgently discuss how to streamline the business environment.