

# Instead of Abandoning Nuclear Power, Japan Should Reinforce System & Build Confidence in Security

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Dr. Hamre contributed this article to *Nikkei's* "school of economics" column on August 5, 2011. With his and *Nikkei's* permission, *Japan SPOTLIGHT* reedited it for our purpose and reprints it here, since we believe this is still invaluable advice from a good friend of Japan's even though several months have passed since its original publication.

## Japanese Citizens Have Lost Confidence in Nuclear Power's Safety

Japan has suffered an unprecedented series of disasters this year first the earthquake that produced a devastating tsunami, which in turn caused a nuclear crisis at the Fukushima Dai-ichi nuclear power plants. And this crisis has spawned a fourth a crisis of confidence in government. I just completed a week of interviews in Japan, talking with politicians, journalists, bureaucrats, businessmen, and hotel bus-boys and waiters. Japan is slowly recovering from the first three crises. But now the fourth crisis is the greatest problem I found.

In short, Japanese citizens no longer have confidence that the government can protect them against dangers like a nuclear meltdown in a power plant. This is fueling the frequent comments I heard that Japan should shut down its nuclear industry.

This would be a big mistake.

Japan built an impressive nuclear power industry for good reasons. Japan is an energy-poor nation with very small natural reserves of oil, gas and coal. So Japan turned to nuclear power as a logical means to fuel the great factories that built Japan into a manufacturing powerhouse. In the process of becoming a world

leader in nuclear power generation, Japan also captured major portions of the global market in providing the components of nuclear reactors as a global vendor.

But Japan's great success in promoting nuclear power also lay at the heart of the current crisis. Japan's Ministry of Economy, Trade and Industry (METI) became the great proponent of nuclear power, but it also technically is the ministry responsible for overseeing the safe operation of Japan's nuclear power plants. It is like a baseball game where the coach of the team is also the umpire of the game. It doesn't work.

This is the foundation of the fourth crisis in Japan. Who now has the credibility to say that Japan's nuclear power plants are operating safely, or can be safely restarted? The power-generating companies (like TEPCO) have no public credibility at this time. But neither does METI or the Nuclear and Industrial Safety Agency (NISA) within METI. Almost everyone I met said that the government failed to oversee the nuclear power plants. This is one of the reasons why I frequently heard Japanese citizens say that Japan should abandon nuclear power.

## Even With This Nuclear Crisis, Japan Should Not Abandon Nuclear Power

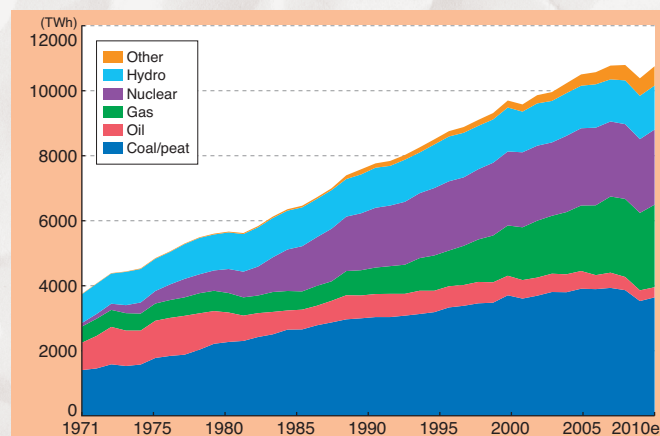
But as I said, this would be a big mistake. China is not going to abandon nuclear power, and I don't need to remind Japanese citizens that they are downwind of Chinese nuclear reactors. India won't abandon nuclear power. Neither will Korea or South Africa or Brazil or Pakistan or Iran. The rest of the world will press ahead with nuclear power, even if Japan abandons it.

But who will set the global standards of excellence for building and operating nuclear power plants? And who will supervise the global commercial nuclear power industry to help prevent the covert production of nuclear weapons by seemingly "commercial" operations? Currently this task falls to the International Atomic Energy Agency, and Japan and the US have been part of the driving force to insure that the IAEA is policing the reckless or potentially irresponsible producers around the world. If Japan abandons nuclear power, it could well lead to America stopping its plans to restart a nuclear power industry. Germany has already abandoned the field, as has Italy apparently.

If Japan and America abandon nuclear power, we will lose the capacity to shape and direct the global campaign to monitor commercial nuclear power developments in less responsible countries. We Japan and the US will be far less safe if we abandon

CHART 1

## Electricity generation by fuel in OECD Total



\* Includes geothermal, solar, wind, biofuels and waste, etc.

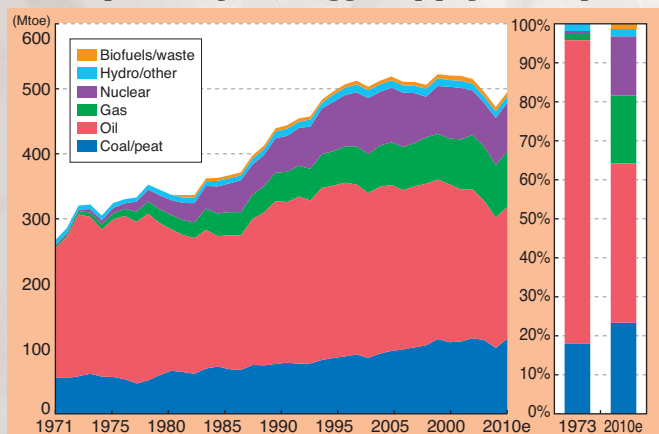
Note: The figure tells us that nuclear energy has played an important role so far in OECD countries.

Source: Energy Balances of OECD countries 2011 edition, International Energy Agency



CHART 2

## Total primary energy supply in Japan\*



\* Excluding electricity trade

Note: These two figures show us that nuclear energy is an important energy sources for Japan in terms of primary energy supply as well as electricity generation, meaning that it is not easy to replace it with other energy sources.

Source: Energy Balances of OECD countries 2011 edition, International Energy Agency

nuclear power and place the burden of managing the global safety system on countries that do not share our view of security and safety.

It is understandable that Japanese citizens will say at this hour that they want to get out of the nuclear power business. But this will not make Japan safer in the long run, and it opens a long-term pattern of great risk.

### Rebuilding Japanese Citizen's Confidence in Nuclear Power's Safety

There is no easy way out of this dilemma. The only real solution is to start the long, difficult task of rebuilding confidence in Japanese citizens that the Government is competent to supervise and manage the nuclear industry. I have four recommendations on how to start this process.

First, Japan has a nuclear safety oversight organization, but it is located inside METI and lacks the strength and resources to manage a powerful industry. It needs to be separated from METI, and established as an independent agency that reports directly to the Diet. NISA needs to be given legal authority to compel companies to provide documents and testify before investigators. The Nuclear Regulatory Commission in the US might be considered as a model.

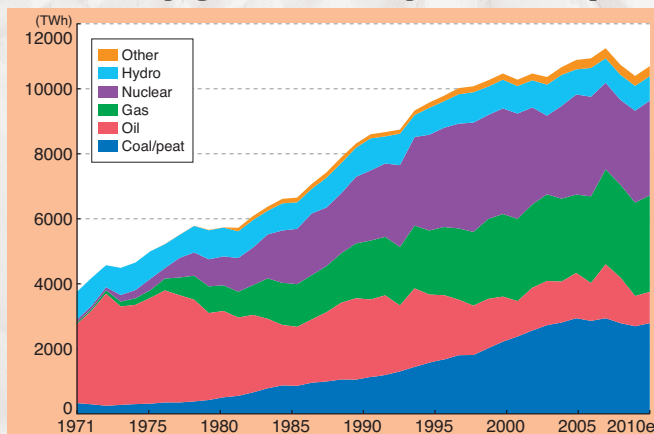
Since the Fukushima crisis, US nuclear regulatory authorities and the US nuclear power companies have conducted independent, in-depth reviews of Fukushima for lessons to be learned that could be applied to American power plants. Last week the US Nuclear Regulatory Commission released its findings. American plants remain safe, but the NRC recommended several procedural steps to strengthen review procedures. Interestingly, the nuclear power industry drew independent but similar conclusions and started to implement them BEFORE the NRC report was released. This is the constructive relationship we need between industry and government regulators. Industry moved faster because it didn't want to face the public criticism of the NRC.

Second, NISA needs to be strengthened technically. What I often heard in my discussions in Japan is that the best university graduates go to industry, and NISA was not able to recruit the best talent. This has to be fixed. NISA should be given special hiring authority to pay higher salaries and recruit the best talent. This will take time. In the near term, NISA should supplement its technical talent by partnering with other strong regulatory agencies, like the IAEA or the US Nuclear Regulatory Agency.

Third, Japan needs to pass a comprehensive legal framework to cover liabilities from future accidents. The companies cannot bear

CHART 3

## Electricity generation by fuel in Japan



\* Includes geothermal, solar, wind, biofuels and waste, etc.

unlimited liability. That would break the companies and Japanese citizens will pay the price for that by having less reliable electric power and much higher prices. Instead, a comprehensive liability scheme would establish a significant financial burden on the nuclear industry as a "first payer" (let's say hypothetically five billion U.S. dollars), with the government providing extraordinary coverage for more extensive disasters. Industry needs to pay the first bills, because that establishes the proper incentive for them to prevent accidents. But industry cannot be made liable for unlimited costs because that will kill the industry. Japan needs a sensible balance. In the US, the nuclear power companies formed a dedicated (but independent) insurance company that is responsible for disaster liabilities. That independent insurance company is highly diligent in supervising the industry because the latter doesn't want to have to pay for a disaster. It is the right overall balance.

Fourth, Japan should not abandon nuclear power, but it should instead become the global champion for safe and secure operation of nuclear power plants. Currently Japan's reputation is damaged by Fukushima. It should restore its reputation for excellence by mounting a national campaign to become the world leader for safe and secure operation of nuclear power plants. This would entail creating major new programs and centers in universities, government-funded research in new safety systems and reactor designs, and stronger programs to recruit the best university graduates into government, and into independent research establishments.

This will take some time. Frankly, it took three years after the 3-Mile Island nuclear disaster in America before the nuclear power industry started to recover its own confidence that it was capable of operating nuclear reactors safely and efficiently. Our nuclear power companies now run the safest and most reliable (and most profitable) nuclear power plants in the world. Japan can do this. Japan should do this.

Japan has been scarred emotionally, not just by the Fukushima disaster, but because it comes after a difficult 15 years of a struggling economy and on top of a series of self-destructive battles by your politicians. It is a bad time. But I see great strength of character in the Japanese people, and a determination to prevail in the face of adversity. Japan currently has a bad case of the flu. It does not have cancer. There is a way forward.

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