

Is a New Dawn on the Horizon for Nuclear in the Land of the Rising Sun?

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At the start of this year, readers may recall that I reviewed the rise of Japan in overseas nuclear industry markets, which I said at the time was clearly designed to 'compensate' for the nuclear standstill at home. However, since then, Prime Minister *Shinzo Abe's* government has clearly been hard at work behind the scenes, with the result that support for nuclear is far from being forced off the political agenda in that country, as we are often led to believe. Indeed, it is worth taking a fresh look at the situation that is now unfolding across the energy sector in Japan.

At the time of writing this article, the most interesting piece of the 'political jigsaw' that will make up future energy policy in Japan was provided by the *Ministry of Economy, Trade and Industry (METI)*.

In early April, the *Japan Atomic Industrial Forum (JAIF)* reported that METI, in its new strategic energy plan, aims to increase the level of renewables in the national energy mix to more than 20 percent by 2030, compared to just under 11 percent between April 2013 and March 2014.

According to *JAIF*, while solar power has had the highest profile and increase in terms of renewables in recent years, the government wants to boost support for a broader range of renewables including geothermal, wind and biomass.

In terms of 'baseload' power sources, including nuclear, hydropower, coal-fired plants and geothermal, *METI* and *Abe's* governing *Liberal Democratic Party* want to set their contribution to the energy mix at about 60 % of the total.

But now comes what I think you will agree is the more interesting part! *JAIF* points out that given that it is difficult to substantially increase hydro, coal-fired and geothermal, nuclear power may eventually settle in at more than 20 %.

The proposed strategic energy plan bows to sentiments still running high in Japan, in the wake of the *Fukushima* accident, by making clear that the country's dependence on nuclear power will be reduced as much as possible and that the nuclear share of the overall energy mix should be cut from the level of just under 29 % that it was in fiscal year 2010 – before the March 2011 earthquake and tsunamis that triggered the nuclear accident.

However, even supposing all this results in nuclear only contributing around 20 % of domestic electricity production, it would still be a contribution of only some nine percentage points less than in the run-up to the events of March 2011.

To me this seems remarkable, particularly when one recalls the responses of some European nations in the immediate aftermath of the nuclear accident in Japan. Germany, of course, speeded up its politically-inspired phase-out of nuclear by effectively ordering some plants offline for safety checks, then refusing to allow them to restart.

It would be wrong to suggest that Japan's government – or the country's nuclear industry – expects to see nuclear return to the fore as a renewed 'dominant force' in the country's energy sector in the near future. Nevertheless, the policies now set to be pursued make it very likely that, as more of Japan's nuclear power plants are cleared to re-

start under tougher new safety requirements, they will be called upon to make up for the natural deficiencies of other energy sources.

For example, recent analysis by the *Japan-based Research Institute of Innovative Technology for the Earth (RITE)*, said that baseload power sources accounted for about 60 % of overall electricity production in the country before the events at *Fukushima*. However, by 2013, *RITE* said the figure had fallen to 40 %, which of course is largely a result of the loss of power from all the nation's nuclear plants that were ordered offline for safety checks.

According to *JAIF*, separate estimates from the *Ministry of the Environment* indicate that the percentage of renewable energies could be increased to 35 % of the overall mix as a maximum. That figure, however, is "pre-conditioned on additional measures, including the development and enhancement of transmission networks and the use of storage batteries", said *JAIF*. Yet the environment ministry has yet to give cost estimates for such measures.

In addition to all of this, Japan's government is considering a target of reducing greenhouse gas emissions by more than 20 % by 2030 from the level in 2005. This could be yet another reason to ensure that nuclear is not erased from the national energy map.

So the stage is set for some interesting developments and debate in the months ahead. The difficult and arduous task of cleaning up at *Fukushima-Daiichi* of course goes on. Meanwhile, all of Japan's 48 operational reactors are still offline while they undergo inspections to make sure they comply with the new safety standards.

But in April of this year, Japan's nuclear regulators started a pre-service inspection of the *Sendai-1* nuclear reactor unit. This was the first such inspection to be fully implemented under the new nuclear safety regime, which primarily covers design basis safety standards, severe accident measures and safety standards for earthquakes and tsunamis.

The owner and operator of both units at *Sendai, Kyushu Electric Power*, plans to load fuel assemblies at *Sendai-1* in early June. It is expected that electricity production will resume in July with a return to full commercial operation at the end of August.

Jaif said in 2014 that *Sendai-1* was among Japanese units that could potentially continue operating in the longer term, after *Kyushu Electric* told regulators that it had seen "no clear sign that the reactor's generated electricity or capacity factor" had declined as a result of its 30 years of service.

In the land of the rising sun it seems there may yet be a new dawn approaching for nuclear. There is still a long way to go. The path ahead will not be an easy one and both government and industry will need to tread with the utmost care – not least in taking into account public opinion.

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