

Taiwan & Japan After Fukushima—Similar Reactions, Different Paths

Similarities between Taiwan and Japan can be striking. On a recent visit to Taiwan, I woke from a nap on the bullet train convinced that I was in Japan. Out the window was a mixed landscape of terraced agriculture and suburban development that spanned from volcanic hills to industrial waterfront, around me a tidy, modern train carriage that was silent, save for hushed conversations and the occasional vibration of an unanswered cell-phone; on my tray table a green tea and the remnants of boxed lunch. The clues that I was on the Taipei-Tainan route rather than Tokyo-Osaka were pretty subtle—Mandarin instead of Japanese, and reversed geography (mountains to the east, water to the west).

The similarities run deeper than aesthetics—shared values for democracy and human rights, embrace of free trade, deep security ties to the United States, demographic challenges, ubiquitous convenience stores, earthquakes, typhoons, and tsunamis, etc. Taiwan and Japan also share similar energy challenges—meeting the needs of their energy-thirsty advanced economies despite few indigenous energy resources, all while simultaneously striving to meet ambitious climate targets. Taiwan and Japan were not long ago both committed to nuclear energy as a solution to the above challenges. Both are now struggling to rethink that commitment in the aftermath of the March 2011 Fukushima disaster.

When Fukushima occurred, Japan was the only country *directly* affected, but nonetheless, the Taiwanese people were deeply impacted by the event.¹ Following the disaster, victims of the March 2011 disasters in Japan received support from all corners of the globe, but it was *Taiwan* that proved to be the single largest donor country.² Taiwan's empathy and generosity were no doubt a function of their shared proneness to natural disaster, and of the palpable admiration with which modern Japan and Taiwan view each other. But beyond that, it was all too easy for Taiwanese people to look at the scope of radiological contamination in Japan and envision the impact on an island as small as Taiwan. Perhaps that explains why, in the aftermath of Fukushima, it is *Taiwan*, not Japan, that has committed to abandoning nuclear energy.

Japan's government at the time of the Fukushima disaster also proposed a nuclear phase out. In two major Japanese elections that occurred shortly after Fukushima—the 2012 national election that would bring Prime Minister Abe and the LDP back to power, and the 2014 Tokyo governor's race—the future of nuclear energy served as a referendum issue. Among many anti-nuclear platforms, a coalition headlined by former Prime Minister Koizumi, called for a complete phase-out of nuclear. Koizumi's plan envisioned replacing lost nuclear capacity by mobilizing Japanese society behind a moonshot effort on clean, renewable alternatives. The effort, according to plan, would ultimately pay for itself—vaulting Japan into the vanguard of the global clean energy industry and slashing Japan's energy imports, all while helping Japan meet its climate targets. Abe and his LDP party proposed a conservative approach. They argued the risk to the economy was too great to walk away from nuclear. Despite Fukushima, Abe proposed keeping nuclear energy near pre-Fukushima levels, though promising to meet future demand growth and carbon targets with efficiency measures and a gradual ramp-up of renewables. When

¹ Minister Lee Ying-yuan, "Taiwan's Environmental Leadership" (speech, Center for Strategic and International Studies, Washington, D.C., September 18 2017).

² CAN, "Taiwan Gives Most in World to Japan," Taipei Times, April 27 2011, <http://www.taipeitimes.com/News/taiwan/archives/2011/04/17/2003500974>.

presented the choice between Koizumi's grand reform and Abe's moderate tweaks, Japanese voters went with Abe.

In Taiwan's 2016 elections, Taiwan went the other way. President Tsai and her DPP party basically promised the Koizumi plan. They plan to eliminate nuclear power by 2025, and they propose significant reform of the power sector, meeting electricity demand by fast tracking green energy such as off-shore wind and solar. The plan promises aggressive public financing paired with a restructuring of the regulatory environment and transmission scheme. The plan also calls for modernizing coal facilities and substituting much of Taiwan's coal generation with natural gas, while incentivizing emissions reductions through a cap and trade scheme.³

The Tsai administration appears on track to phase out nuclear power by 2025 as promised. But the rest of the plan—the aggressive reform part—is an open question. When discussing energy policy with leaders of both government and civil society in Taipei, you get the sense that the energy plan is less moonshot, and more afterthought. Pension reform, gay marriage, repatriating colonial legacy assets, and cross-Strait relations are A-list items on Tsai's crowded policy agenda. The nuclear phaseout is also clearly on the list. Nobody is talking about energy sector reform. An executive at one of Taiwan's major solar firms recently told me that he is focused on foreign markets for growth because he doesn't see any potential in Taiwan. Not a ringing endorsement, to my ears.

Taiwan would not be the first to try to shift its energy thirsty modern economy from nuclear and fossil fuels to renewables. Germany and Spain have tried. Japan, if somewhat by accident, has tried as well. Results in all three have been spotty—Germany's utility bills are among the highest in Europe, and, ironically, Germany remains dependent on imports of electricity from French nuclear plants.⁴ Spain's aggressive push into solar energy led to a disastrous surge in public debt.⁵ In Japan, an early post-Fukushima push for renewable energy has created a massive glut of non-productive solar assets, while Japan's inability to return nuclear reactors to service has pushed fossil fuels imports to historical highs—high enough to flip Japan's trade balance from positive to negative,⁶ blow past its carbon emissions goals, and inflate electricity bills for Japanese homes and businesses.⁷ This path has been traveled

³“經濟部說明能源轉型路徑、綠能前瞻建設與今夏電力供應穩定,” Ministry of Economy, Republic of China, May 16 2017, https://www.moea.gov.tw/MNS/populace/news/News.aspx?kind=1&menu_id=40&news_id=65977.

⁴ Umair Irfan, “From Opposite Directions, France and Germany Converge on Climate Change,” Climatewire, June 30 2015, <https://www.eenews.net/stories/1060021065>.

⁵ Blue & Green Tomorrow, “Has Spain Learned its Renewable Energy Lesson?” February 3 2017, <https://blueandgreentomorrow.com/spain-learned-renewable-energy-lesson/>.

⁶ Hiroko Tabuchi, “Rise in Oil Imports Drives a Rare Trade Deficit in Japan,” January 24, 2017, <http://www.nytimes.com/2012/01/25/business/global/rise-in-oil-imports-drives-a-rare-trade-deficit-in-japan.html>.

⁷ Hiroko Tabuchi and David Jolly, “Japan Backs Off from Emissions Targets, Citing Fukushima Disaster,” November 15, 2013, <http://www.nytimes.com/2013/11/16/world/asia/japan-shelves-plan-to-slash-emissions-citing-fukushima.html>.

before, and past experience suggests that Taiwan's good intentions are not enough to ensure success where others have struggled.

I shared these concerns with a leader of one of Taiwan's insurgent minority parties. His response, in essence, was that Taiwan was doing just fine. As evidence, he pointed out that only one of Taiwan's four reactors was actually operating. But is Taiwan doing just fine? Just a week before this conversation, Taiwan had suffered a blackout that left almost half of its households without power for five hours.⁸ That same week, Taiwan's operating electricity reserve margin—the amount of electric capacity that exceeds demand—had dipped below 2 percent.⁹ For a political leader in the world's 9th largest economy to conclude that such conditions are “fine” is extraordinary. The blackout in August was estimated to have cost over USD 3mil to industry alone.¹⁰ But there are other very real risks to human health and safety—risks that can be measured in lives. One only has to look at the recent cases of Houston, Florida, and Puerto Rico, where energy outages have proven fatal to seniors in nursing homes and patients in hospitals.

In all fairness, Taiwan may look a lot like Japan, but it is not Japan, nor Germany, nor Spain. Taiwan *is* an extraordinary place—Taiwan is a tiny island that ranks among the World's great economies. Despite its economic heft and prestigious contributions to global society, Taiwan is crassly denied membership to major global organizations. Taiwan's civil-liberty-loving democracy lives under unabating threat from its massive authoritarian neighbor. Taiwan's strategic planners prepare for blockade and siege contingencies that would last up to about three months, but after that they admit they are pretty much at the mercy of outside powers to determine their fate. Conventional wisdom may just not apply to Taiwan in the same way that it would to others. A 3 percent electricity reserve margin would be cause for lost sleep in Tokyo, Madrid, and Berlin, but perhaps not in Taipei which has lived for 70 years with China dangling over its head like the Sword of Damocles.

The promise of a nuclear free, green-powered Taiwan—a Taiwan version of the Koizumi plan—was one of the promises on which President Tsai campaigned and won. If she achieves it, Taiwan and the rest of the world will be better places for it. Significant and carefully targeted public support for renewable energy could speed deployment, boost Taiwan's domestic energy industry, and lead to innovations that unlock further clean energy possibilities. Global leadership on what is arguably the world's most pressing and urgent challenge would help reinforce Taiwan's legitimacy and prominence in the global community. Cleaner air will lead to healthier, happier people and more visits from foreign tourists. It will be Taiwan that exemplifies the post-Fukushima, post nuclear potential for a clean, green modern energy economy.

⁸ *The Economist*, “A Massive Blackout Prompts Questions about Taiwan's Energy Policy,” August 17, 2017, <https://www.economist.com/news/asia/21726758-can-it-really-phase-out-nuclear-power-massive-blackout-prompts-questions-about-taiwans-energy>.

⁹ Evelyn Kao, “Tight Power Supply Revives Discussion on Nuclear Energy in Taiwan,” August 14, 2017, <http://focustaiwan.tw/news/aftr/201708140020.aspx>.

¹⁰ Reuters, “Taiwan Power Outage Affected 151 Companies, Caused \$3 Million in Damages,” August 17, 2017, <http://www.reuters.com/article/us-taiwan-power-outages/taiwan-power-outage-affected-151-companies-caused-3-million-in-damages-idUSKCN1AX0S3?il=0>.

However, there are real costs and consequences to abandoning Taiwan's nuclear energy program, and real consequences to Taiwan if the nuclear phase out is not coupled with the aggressive energy sector reform. Phasing out nuclear power will leave billions of dollars (US) in stranded assets and eliminate upwards of 40 billion kWh per year of carbon free electricity production.¹¹ Tsai's administration acknowledges that there will be a transition period to a new green energy economy in which the impact of the nuclear phase out is higher cost, more imports of fossil fuels,¹² greater vulnerability to supply disruption, and increased emissions of carbon dioxide and other pollutants. Skeptics warn that the "transition period" may be far longer than Taiwan may want to admit.¹³

Post-Fukushima, Taiwan has broken with their Japanese friends in choosing the "Koizumi" energy plan, demonstrating a determination and resolve to move forward without nuclear power. But phasing out nuclear energy is the easy part. Passage of time will take care of that. Without policy changes, statutory lifetimes of the four reactors will all pass by 2025. The voters that brought Tsai Ing-wen to power must now recognize that they have embarked on a path from which they can't turn back. The costs of abandoning nuclear power are now a certainty. Time to move the rest of the energy sector reform to the front of the policy agenda.

"Taiwan and Japan after Fukushima: Similar Reactions, Different Paths," Perspectives on Taiwan: Insights from the 2017 Taiwan-U.S. Policy Program, Center for Strategic and International Studies, 2018

¹¹ World Nuclear Association, "Nuclear Power in Taiwan," updated August 2017, <http://www.world-nuclear.org/information-library/country-profiles/others/nuclear-power-in-taiwan.aspx>.

¹² Lee, "Taiwan's Environmental Leadership."

¹³ Miaojung Lin and Lianting Tu, Taiwan Lays Plans for \$59 Billion in Renewable Energy Finance," June 18 2017, <https://www.bloomberg.com/news/articles/2017-06-18/taiwan-lays-plans-for-59-billion-in-renewable-energy-finance>.