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Short Communication

Post-Fukushima Japan: The continuing nuclear controversy

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HIGHLIGHTS

- As Europeans urgently phase-out nuclear power, Japan voted out such a government despite high anti-nuclear sentiment.
- Regulatory climate within the nuclear industry was dysfunctional as a result of being captured by the 'nuclear village'.
- New 'independent' nuclear authority is made up of previously captured agency.
- With a pro-nuclear government, and lack of really independent nuclear authority, old problems may yet arise.
- Japanese government has to choose between lowering emissions, low popular support for nuclear power, and affordable electricity.

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ABSTRACT

The Fukushima disaster was a wake-up call for the nuclear industry as well as a shocking revelation of the inner workings of the Japanese power sector. The political fallout from the event was far-reaching, pushing governments into abandoning nuclear expansion, turning instead to fossil fuels and renewable energy alternatives. While the move away from nuclear energy was deemed a move critical to political survival in Europe, we find that political candidates running on anti-nuclear platforms did not win elections, while the pro-nuclear Liberal Democratic Party won government in the 2012 elections. Against this backdrop, we analyse the energy conflict in Japan using a framework of values versus interests and consider the regulatory and cultural conditions that contributed to the disaster. A number of considerations lie in the way of an organised phase-out of nuclear power in Japan. We also consider the possible policy paths Japan may take.

1. Introduction: Setting the stage for the energy conflict

Japan has virtually no natural fossil fuel resources and therefore has to rely almost exclusively on imports (Koike et al., 2008; Shadrina, 2012). Prior to the Tohoku earthquake and tsunami on 11 March 2011, nuclear energy supplied 31% of Japanese electricity (ANRE, 2011a). Japan had planned to raise the nuclear share in the national energy mix to 53% by 2030 to accomplish its targeted reduction in carbon emissions (METI, 2010; Ferguson, 2011; Meltzer, 2011). The Tokyo Electric Power Company (TEPCO), which managed the Fukushima Daiichi nuclear power station, and Japan's nuclear safety regulator, the Nuclear and Industrial Safety Agency (NISA), are under pressure for administrative, regulatory and safety failings, which contributed to the disaster (Acton and Hibbs, 2012; The National Diet of Japan, 2012). The effects of the disaster became a global policy concern, and a matter of political survival in Western nuclear-powered nations. The resulting massive scale-back of nuclear power has prompted new worries about upheavals in energy politics and possible impacts on global development policy (Fam et al., 2012).

Historically, Japan has had little overt internal opposition to the expansion of nuclear power. Valentine and Sovacool (2010) identified six factors that supported the expansion of the Japanese civilian nuclear industry: (1) the state itself guides economic development; (2) the importance of energy policy means that decision-making in this regard is centralised; (3) campaigns to tie public national esteem to technological prowess; (4) policy decisions are made largely by technocrats or technocratic leaders; (5) political authority is not seriously challenged and (6) there is little civic activism. A combination of the stagnant Japanese

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Table 1
Spike in Japanese fossil fuel imports post-Fukushima is mostly from the expensive fuel and crude oil, and natural gas imports (METI, 2011). Values are in million tonnes of oil equivalent (Mtoe).

Fuel	2009	2010	2011	2010–2011% Change
Low-sulphur heavy oil bunker C	1.1	1.2	3.1	+158
Low sulphur crude oil	9.4	9.4	12.9	+37
Steam coal	61.2	67.7	67.5	−0.29%
LNG	83.4	91.7	100.6	+13.5

economy and the Fukushima disaster may however, have now give grounds for challenging the latter two factors. Indeed, the DPJ have lost the latest elections, news polls have shown public resistance to the restart of reactors and there have also been street protests against further expansion and utility of nuclear power.

The previous Japanese government led by Yoshihiko Noda had flip-flopped on major decisions under pressure from nuclear and manufacturing industries (Table 2), while struggling to import substitute fossil fuels. In order to reduce the generating shortfall, utility companies have had to reactivate aged, disused thermal plants. This in spike in Japanese fossil fuel import in 2011 (Table 1) resulted in electricity suppliers suffering huge losses (Sankei, 2012a), which are expected to widen in 2012 as reactors remain offline (Sankei, 2012b).

Nuclear power has become unpopular in Japan (Kajimoto and Nakagawa, 2012). In 2007, only 7% of the Japanese public wished for nuclear-free electricity, with 21% preferring to reduce reliance, 53% keeping the status quo and 13% supporting an expansion of nuclear power. Post-Fukushima, a poll saw 70% wishing to cease or reduce nuclear reliance (Penney, 2012). The Noda government ran their election campaign partially on a platform to reduce reliance on nuclear power, but have been voted out of government with the pro-nuclear Liberal Democratic Party (LDP) headed by (now) Prime Minister Shinzo Abe returning to power. In light of this series of events, the phase out of nuclear power in Japan would be delayed or abandoned. In light of this series of events, the phase out of nuclear power in Japan would be delayed or abandoned. This documents the energy conflict going on in Asia's nuclear powered economic and technological powerhouse. This paper will address the absence of drastic modifications in Japan's nuclear energy policy on two analytical levels. At the state-societal level, the electoral victory of the pro-nuclear LDP had stifled Japan's progress in abandoning its nuclear energy policy. On the governmental level, the powerful nuclear village in Japan and the institutionalized practice of Amakaduri had contributed in maintaining the status-quo of Japan's nuclear energy policy.

2. Materials and methods

This is an exploratory case study looking at identifying: (1) the actors involved in this energy conflict, and the role they play and; (2) the institutional barrier to reform in the Japanese nuclear energy sector. By using a broad approach of rational choice theory, we discussed their roles in perpetuating or opposing Japan's nuclear energy policy. Moreover, we will also discuss the normative values undergirding Japan's Amakaduri practice, and its role in sustaining the identified institutional barrier through the Advocacy Coalition Framework (ACF). In order to build a case and unravel the dynamics of Japan's ongoing energy conflict, an extensive literature review was carried out as the political aftermath of the Fukushima nuclear disaster unfolded.

3. Results

3.1. The actors

Political actors can be value or interest actors (Abbott and Snidal, 2002). Value actors are characterised by uncompromising beliefs in a normative set of criteria for determining the appropriateness of actions. Interest actors are ends-oriented, and can make trade-offs in order to optimise the paths to their targets. Value actors differ from interest actors in that their stand is not a goal that can be traded off against other competing interests. The different actors are classified in Table 3.

The government is a value actor with regards to energy affordability as it deeply affects Japanese economic and energy security as this cannot be compromised. Pro-nuclear large corporations and their employees can be regarded as interest actors as their interest in cheap energy can be traded off to some extent, for example with higher profits or reliable supply or employment (Adelman and Okada, 2012; Kubota, 2012).

3.2. The institutional barrier

The 'nuclear village' consists of pro-nuclear advocates from Japan's Diet, prefectural governors, bureaucracy such as the Ministry of Economy, Trade and Industry (METI) and other regulatory agencies, nuclear vendors, the financial sector and large corporations represented by Keidanren (Kingston, 2012). The village has promoted and built the nuclear industry in Japan, despite decades of opposition (McCormack, 2011). The main reason for the proliferation of the Japanese nuclear industry is due to the occurrence of 'regulatory capture' (The National Diet of Japan, 2012), a form of government failure where a state regulatory agency advances the interests of the industry it was created to regulate (Dal Bò, 2006).

The mechanism for regulatory capture in the Japanese nuclear industry is an institutionalised practice called 'amakudari', where university graduates join a regulatory agency or ministry such as the METI and retire into powerful executive posts in the corporations they once regulated (Kingston, 2012; Aldrich, 2011). The source of structural power for amakudari as an institutionalised practice stems from its control of strategic positions within the bureaucracies and the corporate realms (Colignon and Usui, 2003). High-ranking retiring bureaucrats moved into TEPCO, while lower-ranking ones moved onto smaller utilities (Onishi and Belson, 2011), and this maintains TEPCO's influence. For instance, Toru Ishida, a former agency head in METI had shifted into TEPCO and was appointed as TEPCO's senior advisor upon retiring from METI in 2011 (The Japan Times, 2011).

The main nuclear regulatory authority in Japan was the Nuclear and Industrial Safety Agency (NISA). However as a regulatory body, it lacked independence. This was because NISA was operating under the METI, which promotes nuclear energy as an export industry and as an energy security solution (Iwata, 2012; The National Diet of Japan, 2012; Turner, 2003). This is a clear institutional conflict of interest. In theory, the elected members of government represent the interest of the people. However because legislation and regulation is a public good, the voting public tends not to actively campaign for regulation. On the other hand, the regulation is a private good to the industry because it directly affects their business. Hence corporations will actively campaign to shape regulations in their favour (Ramseyer, 2012). When the politicians and the top of the bureaucracy start promoting the interests of the regulated industry, the regulatory regimes they are in charge of inevitably serves their vision. Hence NISA became only a nominal regulator. In practice, 11 out of 19 members of the panel rewriting safety rules come from a lobby