



# Nuclear power policy in Japan as a resonance problem

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## Abstract

This article will look at the development of nuclear power policy in Japan and its persistence despite the Fukushima disaster. Using insights from Niklas Luhmann's Social System Theory, I shall argue that the economic and environmental factors resonated with Japan's policymakers in the wake of the Pacific War, leading over time to nuclear policy becoming entrenched and an excessive resonance developed between nuclear advocates and policymakers. While Fukushima has reduced this resonance, leading to regulatory reform that has increased safety standards and reduced economic influence on nuclear power, Japan's energy security imperative has not changed in the wake of Fukushima, nor are the ways nuclear power solved this easy to replace. There is an insufficient resonance between public opinion and party politics in Japan, and the issue of nuclear power is not an item in current legislative debate. This makes further changes to nuclear power policy unlikely in the medium term.

**Keywords:** Luhmann, Kinsella, Fukushima, Nuclear power policy, Japan, resonance, nuclear village

## Introduction

The nuclear power landscape in Japan has shifted in the wake of the Fukushima disaster. In March 2011, there were fifty four commissioned nuclear reactors. As of late 2018, only nine of these were operational,

with fifteen having been approved for restart by Japan's Nuclear Regulation Authority. Nineteen are in decommissioning (including the six reactors at the Fukushima Daiichi plant) and the rest are idle, awaiting the possibility of restarts if national regulators and local authorities give the go-ahead.

In July 2018 the Japanese cabinet approved the Fifth Basic Energy Plan, with the aim of utilising nuclear power for 20-22% of Japan's energy needs by 2030 (METI, 2018)<sup>1</sup>. The plan states that Japan faces structural issues such as a reliance on overseas energy resources, instability in energy prices and increasing global greenhouse emissions. Nuclear power is thus seen as a way to combat these challenges. The International Energy Agency also believes that nuclear power is the only way for Japan to reduce energy costs and greenhouse gases (IEA, 2016).

There remain many opponents to nuclear power. Reports since the Fukushima disaster show that a majority of Japanese are against it (Mealey, 2017). There have been numerous legal challenges to nuclear restarts. The Ikata nuclear plant in Shikoku for example, is facing legal challenges from local opposition groups in four neighbouring prefectures, each of them aiming to prevent its restart on safety grounds (Kyodo News, 2018). Local authorities have also taken anti-nuclear stances. In 2017, governor of the Niigata prefecture held back approval for two reactor restarts at the Kashiwazaki-Kariwa nuclear plant (Stapczynski & Urabe, 2017). This was due to concerns over the ability of the plant operator TEPCO, the owner of

Fukushima Daiichi, to manage the site properly.

There is a gap between government energy policy and the demands of anti-nuclear forces. Naoto Kan, Prime Minister of Japan at the time of the Fukushima disaster, described this gap as “a tug of war—between the Abe government, intent on retrogression, and the people, who are heading toward abolishing nuclear reactors.” (Kan & Capodici, 2016).

A tug of war is seemingly an appropriate way of viewing this. Abe (2015) argues how the nuclear power debate in Japan’s newspapers is not merely about energy: it is about the vision of the future for Japan. Others, on the other hand, see the chance for change in post-Fukushima Japan: DeWit (2015a, 2015b) saw in Fukushima a chance for Japan to become a world leader in renewable energy. Kinsella (2015) thought that Fukushima could prove to be what Ulrich Beck (2015) called an “emancipatory catastrophe”, where the shock of such a manmade disaster could trigger social catharsis and change.

Others, however, are more sceptical, discussing the power of the nuclear village (Kingston, 2012; Kitazawa & Funabashi, 2014, pp. 52–59; Vivoda, 2014, pp. 127–129) and how corporate-government ties will smother any such efforts towards change. Samuels (2013, p. 45) believed that Fukushima generated various narratives which various stakeholders used to their favour in the aftermath of the incident.

While Fukushima did not lead to any major shifts away from nuclear energy, there was also no return to the status quo. In this sense the results seem partial: no radical shift occurred in energy policy but changes have taken place which have limited the resurrection of nuclear power on the Japanese archipelago.

Attempting to understand the various narratives is difficult, especially if one wishes to understand them within a coherent framework. Kinsella (2015) suggests one way in which this could be done, namely through using insights from Niklas Luhmann’s Social Systems Theory. Highlighting Luhmann’s theory of resonance and what different factors influence politics in relation to nuclear power, Kinsella poses ways in which policy could become more responsive to public and safety concerns. This use of resonance allows one to consider how multiple factors can influence nuclear

power policy. These factors include the internal political forces affecting the regulation of energy policy and external factors such as wider social and economic interests.

In this article I shall take up this use of resonance and focus on the core issue of nuclear power policy. After first expanding on the concept of resonance in more detail, I shall discuss the excessive economic resonances on Japanese politics emanating from the nuclear village. I shall then discuss the regulatory changes post-Fukushima, showing how these have served to increase political resonance with safety and seismic hazards whilst reducing the influence of corporate interests.

There has been no emancipation à la Beck (2015) nor any wholesale move towards renewables as DeWit (2015) hoped for. I argue that this is due to other resonances with Japan’s political subsystem. The first is the strategic imperative to secure energy for the Japanese archipelago, a priority that Fukushima has not changed. Nuclear power serves to alleviate this issue as well as others such as greenhouse emissions. Given this geographic reality and the tendency for decision direction to become entrenched, it makes a drastic shift away from nuclear unlikely.

I shall then use further themes from Luhmann’s work to discuss the organisation of the political subsystem. I will discuss the insufficient resonance between public opinion and party politics. The lack of fruitful debate at the level of party politics means that new options do not readily enter the legislative debate, thus excluding public opinion from this process. I shall then look at the difference between central and periphery organisations, showing how nuclear restarts are an issue for the periphery of Japan’s political subsystem. This further reduces chances of any substantive change.

I conclude that whilst Japan’s political subsystem as a whole has reacted to reduce problematic resonances with its environment with regard to nuclear safety, there still exist resonating environmental factors which Fukushima did nothing to reduce: Japan still faces the same energy dilemma as before. When combined with the complexities of political organisations and decision-making, along with the weakness

of party politics in Japan, it makes any further shift away from nuclear power in the medium term improbable.

### The problem of resonance

Kinsella (2015, p. 3) believes that one of the factors which affects the way nuclear power policy is reconsidered post-Fukushima is related to the degree to which a society is open to reflexive re-examination. The way in which we talk about Fukushima does not simply describe the objective reality of the disaster: such discussions combine to construct or constitute its meanings. Different ways of understanding the disaster are inherently political and exist as part of a socially constituted network of institutions, organisations, infrastructures, and practices. Various actors interact in order to construct an image of nuclear power and its meaning for themselves, their communities, and the country/world at large. This makes the issue of nuclear power extraordinarily complex as there are a large number of narratives in simultaneous existence.

To understand these competing narratives and the different ways in which they are constructed, Kinsella proposes taking a Luhmannian approach (Kinsella, 2015, p. 4). Luhmann proposed that society is made up of functional communication subsystems, with each one dealing with the complexity of its environment in its own terms. Meaning is not objective but dependant on how an observer observes. Something only has political meaning when observed politically. An economic communication for politics would only have meaning, if at all, politically.

A social systems theory understanding of society shifts how we frame policy creation. The question of how to understand a multitude of narratives around an issue disappears as we can no longer view meaning as existing independently of observation. Solving this conundrum becomes a question of how a political decision can be made to stabilise the political subsystem.

Social systems are self-referentially closed but environmentally open in Luhmann's account (Luhmann, 1995, p. 37): they can only react to their environment by means of their own self-referential

operations. Nuclear power policy is formed within the Japanese legislature; how the legislature forms policy though also depends on external factors (disasters, economic concerns, public opinion, etc.).

Kinsella uses the concept of resonance, which is taken from Luhmann's work *Ecological Communication* (Kinsella, 2015, p. 4; Luhmann, 1989, pp. 15–21). Resonance exists as a way in which a social subsystem reacts to its environment. As Luhmann notes however (Luhmann, 1989, pp. 115–120), there can exist excessive and insufficient resonance. Excessive resonance is when the social subsystem in question pays too much attention to certain perturbations within its environment. It then responds without taking sufficient account of the wider effect this will have on the subsystem's environment. Insufficient resonance is when the social subsystem in question does not respond enough to environmental problems.

Kinsella (2015, p. 4) gives an example of resonance with respect to the events at Fukushima. He believes that Fukushima demonstrated insufficient resonance between the political subsystem's responsibility towards ensuring nuclear safety and the scientific subsystem's understanding of seismic hazards. At the same time, Kinsella argues, there was excessive resonance between the political subsystem and the economic subsystem and its interests.

These resonances are not separate. For many scholars, it is the excessive resonance of economic interests that is the root cause of the lack of focus on nuclear safety. These economic interests and the resonance they have with politics has been discussed at length in the literature on the nuclear village.

### The Nuclear Village and the Nuclear Regulatory Authority

There have been a number of definitions for the nuclear village. Kingston (2012) describes the nuclear village as a convenient shorthand for "institutional and individual pro-nuclear advocates". The independent investigation into Fukushima (Kitazawa & Funabashi, 2014, pp. 52–53) describes the central branch of the nuclear village as consisting of nuclear power administrators and promoters of the nuclear power

industry. Hymans (2011, p. 177) referred to the nuclear village as the “nuclear iron triangle of METI<sup>2</sup>, industry, and national politicians.” In all of these descriptions, the nuclear village acts to a large extent as a catch-all term for pro-nuclear forces.

On a political level, METI was a strong proponent of nuclear power as it was deemed critical to Japan’s economy. It used its influence to ensure that vast amounts of government resources were invested to make the development of nuclear energy a national priority. This led, as the domestic industry developed, to METI nudging companies to enter the nuclear business with overseas vendors (Kingston, 2012). As time went on, the reliance on nuclear power became entrenched in the system.

One of the biggest regulatory problems in pre-Fukushima Japan, for which the nuclear village has been blamed for, was that of regulatory capture. As Kingston (2012) discusses, there was an “incestuous” network of pro-nuclear advocates in Japan which suppressed dissenting opinions and led to a lack of independence between plant operators and regulators. This problem was exacerbated by the practice of *amakudari*, literally meaning descent from heaven, where senior bureaucrats would take positions in industries they once oversaw. This led to vested interests developing between personnel. This is cited by Kingston as one of the reasons why nuclear regulations in Japan were so lenient compared to other countries.

Hymans further elaborates on the concept of veto players and how economic interests essentially overrode safety concerns. The nuclear industry in Japan had invested a large amount of money into nuclear technology and plants - its sunk costs were extremely high. It was therefore in their interest to maintain a pro-nuclear environment in Japan. This also applied to the Keidanren<sup>3</sup> and the industries it represented, as nuclear power provided a cheap source of electricity for Japanese industry.

Some of the issues with nuclear regulation arose from the way safety regulators were managed. The Nuclear and Industrial Safety Agency (NISA) was part of METI, which meant that the regulating body for nuclear safety was a part of a pro-nuclear ministry.

There were also issues with the diffusion of responsibility regarding safety guideline creation and plant inspections. These were spread between NISA and the Nuclear Safety Commission (NSC), which was under the cabinet office. The NSC created regulations that focused on safety and not on the possibility of accidents (Kitazawa & Funabashi, 2014, pp. 67–68). NISA inspected plants but was overly focused on box-ticking rather than truly promoting safe operations (ibid. pp. 69–71). This led to insufficient practical safety measures being implemented and is one of the reasons the Diet itself said that Fukushima was “made in Japan” (Government of Japan, 2012): regulatory failures led to Fukushima, with the natural disaster serving as its trigger.

Once the immediate crisis surrounding Fukushima subsided, questions were raised about the regulatory failings which had allowed it to occur. On 15<sup>th</sup> August 2011, the Basic Policy on the Reform of an Organisation in charge of Nuclear Safety Regulation was released (Japanese Cabinet, 2011). Under the reform, the nuclear safety regulation section of NISA was to be separated from METI and integrated with the NSC. This aimed to bring together the regulatory functions which were previously dispersed amongst different regulators. The Act for Establishment of the Nuclear Regulation Authority was enacted on the 20<sup>th</sup> June 2012 (NRA, 2017).

Modelled on the US Nuclear Regulatory Commission, the Nuclear Regulation Authority (NRA) has its own monitoring functions, staff, and a budget of approximately fifty billion Yen (Vivoda, 2014, p. 123). Now falling under the remit of the Ministry of Environment, the NRA is expected to act independently. These changes are meant to avoid the regulatory pitfalls and problems with the regulatory divisions of old. This is to allow for a clearer focus on all aspects of nuclear safety, including a much greater responsiveness to accident preparation and seismic hazards science.

The NRA has shown itself to be far stricter than its predecessor organisations. Once new safety standards were outlined in July 2013, the NRA started reviewing applications for reactor restarts (Vivoda, 2014, p. 121). In early 2017 there were four operational reactors (Mealey, 2017). The number of

restarted reactors is far less than was predicted a few years before. Vivoda & Graetz (2015, p. 504) reported that fourteen to sixteen reactors could potentially return to operation in 2015, a number which by late 2018 was still not realised.

The NRA has also made demands on plant operators to show a commitment to nuclear safety beyond written regulations. The attempts of TEPCO to restart two reactors at its vast Kashiwazaki-Kariwa facility was reported to have met with a sympathetic attitude from the NRA (Mainichi, 2017a). Yet just one week later, outgoing NRA chairman Shunichi Tanaka said that TEPCO needed to show more clearly its resolve to ensure safe operation of nuclear plants (Mainichi, 2017b). The NRA appears to be a lot more thorough than its predecessor organisations were in ensuring plants meet new compliance standards.

The main issues with the nuclear village (METI control of the nuclear watchdog, regulatory capture and *amakudari*) all seem to have been curtailed with the creation of the NRA. A pro-nuclear government agency no longer oversees the body charged with nuclear safety. The NRA is also acting independently, enforcing standards on nuclear operators above and beyond the written regulations. This suggests that regulation is now much more robust. Personnel in positions due to *amakudari* do not seem to have the ability to shape policy in a pro-business direction like before. Sweeping reforms have dealt swiftly with safety issues raised.

The reorganisation of nuclear safety regulation in Japan seems to have the simultaneous effect of correcting both sides of the resonance problem Kinsella identified. The NRA is showing more responsibility for nuclear safety and a heightened awareness of seismic hazards. The NRA can even be said to be going beyond this by demanding companies show their commitment to safety, not just how they can meet written safety standards. The excessive resonance from economic imperatives, described through reference to the nuclear village, has also been less powerful post-Fukushima. Nuclear operators do not seem to have the same influence they once did and cannot push through nuclear restarts without meeting the new safety criteria.

## The development of nuclear power in Japan

The shifts in resonance have shown, on one hand, the ability of Japan's political subsystem to correct itself when clear resonance problems became apparent. On the other hand, the continued pursuit of nuclear power does not seem to fit neatly into the narratives about Fukushima discussed in the introduction. Resonances have shifted to take into account nuclear safety but other resonances related to energy remain.

To understand why Japan chose to pursue nuclear power in the first place, one must go back to the post-War period. At that time, Japan was faced with the task of needing to secure electricity in order to rebuild its economy and industries (Kitazawa & Funabashi, 2014, p. 36). Yasuhiro Nakasone, future prime minister but then a member of the House of Representatives, seized the opportunity to push for nuclear development in Japan through the United States' "Atoms for Peace" program.

There were, however, deep antinuclear roots in Japan, intensified by the Lucky Dragon incident in 1954 when a Japanese fishing boat was exposed to radiation from the Castle Bravo hydrogen bomb test. As Japanese media had been banned from discussing nuclear-bomb related issues during the occupation period, the Lucky Dragon incident sparked intensive critical coverage (Kingston, 2014). This led to the emergence of a strong anti-nuclear movement.

Despite this popular sentiment, a joint committee on nuclear energy drafted proposals for various laws related to nuclear power (Kitazawa & Funabashi, 2014, p. 37). This committee consisted of members of the Liberal Party, Democratic Party, and the Japanese Socialist Party. It therefore contained political actors from the biggest parties in the post-war period from across the political spectrum. There was clear support for nuclear power despite the wishes of the electorate.

Vivoda (2014), writing from an energy policy perspective, believes that energy security was a driver for the decision. If we consider energy security as a strategic imperative, Japan's nuclear power policy was based on the concerns of leaders who interpreted Japanese



history as a series of assaults on an archipelago almost devoid of natural resources (ibid. p. 113). Nuclear energy by this account allowed Japan to meet this strategic imperative in a number of ways. It would allow Japan to diversify its energy portfolio. Furthermore, with a growing nuclear industry Japan could regard nuclear power as a “semi-indigenous” energy source. Additionally, the supply of uranium was and still is much less volatile than that of other fuels, especially oil. Uranium reserves within Japan last for about half a year of normal operation and the countries which supply it (such as Australia and Canada) were politically stable (ibid. pp. 113–114). Nuclear power was the solution to many of the existential problems that Japanese leaders believed their country faced.

This helps to frame why Japan chose the nuclear route but to describe its continuation post-Fukushima a stronger analytical framing is needed with regard to decision making. Luhmann does this through the use of programmes (Luhmann, 2013, p. 92). Programmes for Luhmann both create and restrict the ability to make decisions (Seidl, 2004, p. 18), with goal-orientated programs operating by making decisions aiming to achieve certain outcomes. In this case, the goal was to solve Japan’s energy dilemma and nuclear power was seen as a way to do this.

Once a decision has been made, further decisions tend to build upon them. Thus, as new problems arise, there is a tendency to solve them in light of previous decision making history rather than taking a new direction. This has been discussed in other literature, with North (1990) for example, famously describing this as path dependence.

The oil shock in 1973 weakened the Japanese economy and exposed its dependence once again to imported fuel sources. This led Japanese policymakers to further pursue nuclear power to limit Japan’s susceptibility to a sudden disruption in oil supply. By 1974, three new electricity generation laws were passed, aiming to increase the uptake of nuclear power across the country (Vivoda, 2014, p. 117). By the 1980s, Japan had created an image of nuclear power as a stable and low-cost source of energy (ibid. p. 118).

Lidsky and Miller (2002, p. 128) argued that

Japan had invested so much into nuclear power that there was a barrier against sudden change in long terms plans. This, they believed, would be the case even if energy security was not an issue. With the shifts in geopolitics in the post-Cold War world, the case for basing energy policy on energy security had reduced in importance in Japan. A shift took place and Japan began justifying its support for nuclear energy by arguing it to be a form of green energy and a way of meeting greenhouse gas emission targets set by the Kyoto Protocol (Tiberghien & Schreurs, 2007; Valentine & Sovacool, 2010).

The development of nuclear power policy in Japan was dependent on a number of factors. Its initial adoption can be understood through reference to Japan’s energy security dilemma. This is a strategic imperative at the political level as energy security is vital in ensuring the most basic functioning of a country. This goal-directed program became entrenched and was used as the way to deal with new issues Japan faced. Some of these were traditional issues, with the oil embargo being another example of Japan’s energy security problem. Greenhouse gas emissions are a distinctly modern issue but one Japanese policymakers saw to be resolvable through nuclear means. These developments were contingent: they could have been different. Once this goal-orientated program was adopted though, it became likely it would continue to be followed unless there was a reason not to.

Fukushima has spurred some change in energy policy. The Fifth Basic Energy Plan aims for nuclear to make up 20%–22% of the energy mix by 2030, down from around 30% pre-Fukushima (World Nuclear News, 2018). Nuclear is described as “an important baseload power source that contributes to the stability of the long-term energy supply and demand structure” and a “viable choice for decarbonisation” up until 2050. Even though the same plan aims for renewables to make up around a quarter of Japanese energy needs by 2030, policy still sees in nuclear the solution to its deepest energy concerns.

Energy security is still a strategic imperative for the nation. Japan still has obligations to meet emission targets. Fukushima did nothing to change this, even though it has exposed the catastrophic potential of

using nuclear power in such a seismically active region of the world. Given the geographic and environmental realities Japan faces, it is difficult to see how far energy policy can shift whilst still dealing with these issues.

### Nuclear power policy post Fukushima

The question of nuclear power policy was never an important matter for debate before Fukushima. A cross-party consensus in the 1950s led to nuclear power being adopted but after 11<sup>th</sup> March 2011 it was uncertain whether such policy could continue. There was a large anti-nuclear movement and the public showed a preference for an end to nuclear power. Yet nuclear power remains.

The nuclear village, Japan's energy security dilemma and path dependence all have an influence on pushing Japan back towards nuclear. However, they do not make up the full picture. Two other factors related to politics have helped to shape the current state of nuclear power policy in Japan. The first is the gap between public opinion and party politics. The second is the Liberal Democratic Party's (LDP) transfer of this issue from the centre of politics to its periphery. These two interplaying factors make any further change in nuclear power policy unlikely.

After Fukushima some thinkers such as Oguma (2013) believed the voice of the Japanese public was rising and that "the general will of the people is strongly opposed to nuclear power". There were mass protests on a level not seen for generations against nuclear power in 2012 and 2013. The majority of Japanese are against nuclear power. Local opposition to nuclear restarts through legal challenges demonstrates the continuing resistance towards nuclear power. Such shows of public dissatisfaction with nuclear power however do not seem to have had any influence on central nuclear power policy.

Oguma (2016) shifted his opinion in light of the disappointment of failure to prevent nuclear restarts. He believes that the electorate is largely anti-nuclear but primarily votes on economic matters. The LDP has been successful in avoiding the ire of the public by not directly supporting nuclear power; it has taken

the position that nuclear power is something that needs to be used for the medium-term until alternative technologies have matured. The LDP also has a strong support base and tends to dominate when the opposition is weak. The party thus does not have to show concern for wider public opinion as long as it supports its electoral base.

Mitchell (2016) discusses the problem from a Luhmannian perspective. He believes it emerges from the lack of strong political opposition in Japan and the inability for new themes to become topics for debate in the Diet. Weak opposition since 1955 has been the norm in Japan: only in 2009 did an opposition party manage to win an election with a strong vision of the future of Japan. Since 2012 the LDP has won by a landslide. This means that the main route for public opinion entering politics in democracies, through public demands being picked up by political parties and debated in the legislative chambers, is not effective in Japan.

Public opinion regarding nuclear power does not seem to resonate with party politics in Japan. There seems to be insufficient resonance between the two. Opposition weakness is one of the main causes of this. Opposition parties in the 2017 lower house elections took an anti-nuclear stance and still lost heavily to the LDP. Their lack of influence means that they do not have the strength to shift legislative debate and bring this public concern into the centre of politics.

Party politics however, only makes up a part of the political subsystem and its organisation. Luhmann did not think that one organisation could manage an entire functional subsystem. Different organisations within the political subsystem work to manage Japan but focus on different areas, and have different powers and responsibilities. The NRA, for example, is an organisation which works politically by making decisions related to nuclear power plant restarts. It cannot, however, shape policy itself, but only implement the directives it receives.

Such organisations lack the power of the central organisations of the state such as the government, which can make decisions that affect the whole country. There emerges a centre/periphery distinction in Luhmann's theory, where the central organisations

manage the key functions of a subsystem and periphery organisations manage things that the centre has passed to it. It is ultimately the Diet, the centre of Japanese politics, which makes decisions on nuclear power.

This process can be seen in the development of nuclear power policy after March 2011. Soon after Fukushima, the Diet went to work in considering its policy response. In June 2011, the Energy and Environment Council (Enecan) was set up in order to formulate new strategies relating to energy in Japan (Kantei, 2011). In July 2012, through the research done by Enecan, the Japanese government presented three nuclear energy scenarios that it could pursue: zero, 15 percent, or 20 to 25 percent nuclear energy (Vivoda, 2014, p. 120). The zero option found the most support with 76 percent of respondents to a Nikkei Shimbun poll favouring it.

By September 2012, Enecan had released a document recommending an end to nuclear power in Japan by 2040 (*ibid.* p. 121). This also included a forty year operating limit for current reactors. This policy vision matched with that of the ruling Democratic Party of Japan, which wished to make Japan free of nuclear energy by the 2030s (Kan, 2017, p. 163). This timeline however, was dropped when it became apparent that the Keidanren believed this policy was irresponsible, stating that the latter option of up to 25 percent nuclear was necessary to avoid severe economic effects (Vivoda, 2014, p. 121). This occurred only four days after the release of the Enecan document.

In any case, the policy shifts envisaged by the DPJ were not to come to fruition. It is ultimately the role of the ruling party within a state to decide and implement policy, and the public were in no mood for a continuation of the administration of Japan by the DPJ. In December 2012, in a landslide victory, the LDP once again took control.

The policy of the LDP administration was, and has remained, that of refusing to implement any new policy agenda. Agreeing that Japan needed around a 20 percent nuclear energy mix, the LDP administration has made a point of letting the NRA deal with the job of certifying which plants could be restarted.

Chief Cabinet Secretary Suga stated in late 2017 that “we will promote the restart [of nuclear reactors] if they are judged to meet the new safety standards,” (Yomiuri Shimbun, 2017).

In an editorial piece, the Asahi Shimbun (2017) stated that the central government should be making the decision on nuclear restarts and has a duty in gaining public approval for them. The editorial notes that “the procedures for allowing a nuclear reactor to be restarted are all left up to the NRA, local governments in areas hosting the nuclear plant and the power utility operating the plant”. This excludes any mechanism for the central government to take responsibility, something which the editorial concludes should be changed. Noting that nuclear power policy is a “national policy implemented by the private sector”, it concludes that this means that the central government cannot just leave this task up to the plant operators.

The problem with this position is that it wishes to reverse the externalisation of processes from the centre of the political subsystem to the periphery. Bureaucratic organisations are created in order to manage aspects of society within a certain remit. The NRA was formed in order to manage nuclear power in Japan so that it did not have to continually remain at the centre of Japanese politics as a topic for discussion in the Diet.

To conflate the decision on nuclear power policy with organisational level decision-making regarding nuclear restarts is to overburden the centre of politics. This would prevent it from dealing with other issues. It also suggests that the central bodies of government have more power than they actually do. Politicians are not nuclear power experts; it is the responsibility of the NRA to hire personnel who are. The centre of politics can only create binding-decisions which are then implemented by various parts of the political subsystem, such as the bureaucracy.

Even if there was a policy shift and nuclear reactors were scheduled to be shut down by the 2030s this would not remove the initial problem the Asahi Shimbun discussed. The NRA would still have to regulate safety and assess the viability of nuclear reactors for restarts until then. This would still take place in the periphery of the political subsystem, based on the



central political decision to keep using nuclear in the short term.

Nuclear power policy post Fukushima highlights two issues in Japanese politics. There is the specific Japanese issue of insufficient resonance between public opinion and party politics, exacerbated by opposition weakness. There is also the structural difference between centre and periphery organisations within the political subsystem. The insufficient resonance between public opinion and party politics means that public sentiment towards nuclear power is not represented in legislative debate. Nuclear power policy can change in Japan but it is not the job of the NRA to decide on policy, only on nuclear restarts. The effective exclusion of nuclear power from legislative debate makes any further changes unlikely.

## Conclusion

This article has attempted to add to the conversation regarding nuclear power policy in Japan by expanding on Kinsella's use of Luhmann's concept of resonance. Kinsella focused on insufficient resonance with safety concerns on one hand and excessive resonance with economic interests on the other. This does not seem to be an issue now as the creation of the NRA has helped to balance these resonance issues through much stronger regulation.

Strategic energy imperatives, acute in post-War Japan, led to nuclear power being pursued. This goal-directed program then became the way that politics resolved other issues, such as the oil embargo and emissions targets. Japan's geography means that this is an issue that will continue to resonate strongly with policymakers when deciding energy policy.

The formation of nuclear power policy post-Fukushima highlights the structural limitations of change given the power of the legislature to define policy and the gap between centre and periphery organisations. Who is in power decides and these decisions then leave the political centre to be dealt with by periphery organisations. This serves to reduce or eliminate the resonance of the issue at hand with the political centre unless it once again becomes an issue either for party politics or legislative debate. This is a

structural issue at the heart of the modern political subsystem and, at least for Luhmann, cannot be overcome.

Japan is a democracy and the public does have a voice. This voice though, due to weak political opposition in Japan, rarely enters the Diet in any meaningful way and leads to its exclusion from the legislative process. This remains a key resonance issue in Japan and one which goes beyond Fukushima and nuclear power policy to a discussion on Japan's political setup as a whole.

It is difficult to distil exactly what issues this causes in practice. Even if one assumes that an opposition party takes power and declares its intent to make Japan nuclear free, this would not necessarily change the issues that have been raised in this article. Japan still faces a strategic energy dilemma and, as Luhmann points out, changing a decision path once it has become entrenched is difficult. The lack of resonance of the public with politics is a concern but within the limits of the discussion here it is difficult to predict how different things would be if this resonance was more balanced.

Ultimately nuclear power policy can be changed if there is political will to do so. However, the numerous resonances with the political subsystem, be they balanced or not, make this proposition difficult. The forming of the NRA in the wake of Fukushima helped to balance the resonances related to nuclear safety. It did not, however, change wider resonances, such as the lack of resonance with public opinion and the resonance with geographic factors that the political subsystem takes into account when deciding energy policy. In light of the lack of change in these resonating factors, it is difficult to see Japan moving away from nuclear power in the medium term.

## Notes

<sup>1</sup> This is down from around 30% pre-Fukushima

<sup>2</sup> Ministry of Economy, Trade and Industry

<sup>3</sup> The Japan Business Federation, one of the most powerful lobbying groups in Japan.

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