Japan's Post-Fukushima Conundrum & NIMBY

Mechanism of Japanese Environmental Policy-Making

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Note: This is a report of an ongoing research project. Please do not cite without the author’s permission.
Introduction

After the Fukushima Daiichi Nuclear Accident in March 2011, Japan was under pressure to decide whether it would restart nuclear power plants or to seek for alternative energy resources. Japan’s environmental policies and political actions have been characterized by NIMBY (Not In My Back Yard), and were very different from the way environmental issues have been discussed and handled in Europe and the United States (Aldrich, Kanatsu, Lesbirel). How did this NIMBY politics work in post-Fukushima Japan? This paper will examine if the post-Fukushima Japanese opinions to nuclear power plants, as well as the movement toward alternative energy resources, derived from the NIMBY politics at work or not.

This is an ongoing project to examine the policy process focusing on the restarting of nuclear power plants (or not) for nineteen nuclear power plants (including one being constructed, one being planned, and one for experimental purpose) in Japan. Currently, the author has been conducting a survey to the local governments (city, town, and village levels) totaling seventy-three regarding their views on the restarting of nuclear power plants. The author will visit a couple of the significant case sites this October to conduct more detailed research (mainly interviews as well as examining the parliament sessions of each municipalities since the accident) to relevant organizations: environmental (anti-nuclear) NGOs (both national and local where relevant); local newspapers; fisherman’s and agriculture cooperatives; local chamber of commerce; among others.

The stark contrast between Germany and Japan after the March 2011 accident shed light on this different political decision making process. While Germany (and a couple of European countries) rushed to decide to shut down nuclear power generations as a “national” policy, Japan, which suffered the most from the accident, has been taking an ambiguous move, even putting the prime minister who considers nuclear energy as the “base load” source for power generation. The author hypothesized that there are several significant evidences for the characteristics of NIMBY politics in post-Fukushima Japan: First, there is a strong opposition to nuclear power generation in the affected area in Fukushima, but not in the entire nation; Second, there is a mixed reaction to nuclear power generation in other areas of Japan where the nuclear power plants are located but with a tendency that the host municipalities tend to support more for the (re)start of the nuclear power plant mainly for economic benefits; Third, national movement does expand and nuclear issues do not become even a major focal point for the two post-Fukushima national elections, yet, is very sensitive for local elections. These will be empirically tested in this research. For this presentation, the author will show the result of the survey conducted in May and the analysis of the results. Before turning to the results of the survey, we will, first, observe how NIMBY politics has worked in Japanese environmental policy making.

Previous NIMBY Environmental Politics in Japan

The following is mostly derived from my forthcoming book chapter (Kanatsu 2015). Japan’s environmental performance has been stunning, to say the least, considering that the country was dubbed a “pollution archipelago” (Kogai Retto) in the 1960s. Some of the pollution diseases
suffered by Japanese people are still remembered vividly in Japan and the rest of the world. Since seventy-five percent of Japan’s terrain is mountainous, almost half of its natural seashores were lost in order to construct industrial complexes.

Japan changed its approach toward the environment dramatically circa 1970, becoming one of the most environmentally conscious countries in the world. Japan is leading the world particularly in the field of efficient environmentally friendly technologies. The study conducted by Scruggs (2003) and Jahn (1998) ranked Japan high among OECD countries particularly in the field of air pollution and also as an economy that expanded but performed well. Scruggs ranked Japan between West Germany (538 and the highest in the study) and the United States (291) with total score 414 in the indicator that includes SOx, NOx, waste, recycling, fertilizer, and water treatment (Scruggs: 51). Jahn’s study ranked Japanese environmental performance seventh, while West Germany as second and the United States as fifteenth, although the energy use of Japan expanded in the study period while West Germany shrunk (Jahn: 113). The most recent Environmental Performance Index (EPI) (2012) ranked Germany eleventh, Japan, twenty-third, and the United States forty-ninth (Emerson et al. 10). Furthermore, the most recent OECD Data shows that Japan beats both Germany and the United States in green house gas emissions: 2011 total green house gas, tons per capita were—Japan 10, Germany 11, United States 21 (stats.oecd.org). Thus, after its dramatic policy shift in the early 1970s, Japan has continued to be a global leader in environmental performance.

One of the most remarkable of Japan's achievements was the reduction of automobile emissions in CO, HC, and NOx. Air pollution originating from the car became a focal point in 1970 in the United States, when Japanese auto manufacturers started venturing into the U.S. market. Around that time, Japanese automobile technologies lagged behind those of the American manufacturers by a wide margin. Japan was challenging the largest and most formidable automobile giants in the world: the Big Three of the United States. Japan achieved all of the standards—CO, HC, and NOx— of the U.S. Clean Air Act of 1970 by 1978, while the U.S. fleet did not achieve this standard until 1997. Even California, which imposes much stricter standards than the U.S. federal government, did not catch up to the Japanese standard until 1980 in HC emissions and 1983 for NOx (Nishimura & Sadakata: 116).

The author (Kanatsu 2015, 2013) has argued that NIMBY politics were key factors shaping Japan’s air pollution policies. Local advocates took advantage of the opportunities created by the Japanese macro-political structure, including party politics and inter-ministerial disputes to push their demands for cleaner air. Contrary to traditional recipes for environmental policy success, such as strong pro-environmental political parties and nationally or internationally organized strong environmental NGOs, the Japanese experience demonstrates the effectiveness of NIMBY activism even where macro-political structure would have predicted a major failure.

**The NIMBY Solution to Japanese Environmental Problems**

One of the main reasons that Japan was able to overcome collective action problems common to environmental issues was that NIMBY politics transformed clean air, often perceived as a collective good, into a non-collective good. Local communities identified their pollution
problems as local problems and sought local solutions. Those local solutions, because they involved national and multinational corporations, became national and, indeed, international solutions. Local Japanese became aware of environmental problems because industrial pollutants were killing people in their own communities, most notably in Minamata, Yokkaichi, Toyoma, and Niigata. These pollution problems were not considered to be a diffuse, national issue but rather a collection of local problems. This stands in stark contrast to the German case, where one of the first major pollution issues was the problem of acid rain, initially observed in Scandinavian countries rather than inside Germany in the early 1970s. From the beginning, pollution problems were international issues for Germany, while for Japan they were not.

Traditionally, NIMBY has been considered a common reaction to private “bads” that accompany collective “goods” (Aldrich 2008). For example, while everyone recognizes the need for garbage-free streets for the entire nation, no one wants to have the landfill in her or his backyard. This is why NIMBY politics is commonly seen as a hindrance to the pursuit of a common interest. However, as the case of Japan will demonstrate, NIMBY politics can contribute to solving collective action problems by sharing information about costs and clearly identifying beneficiaries. In other words, “I don’t want pollution in my backyard,” can become “pollution shouldn’t happen in anyone’s backyard.”

In the case of Japan, the history of NIMBY solutions to pollution problems goes back to the early twentieth century. Hashimoto explains: “Local initiatives provided the first programs of pollution control and compensation upon which later national programs were modeled. ... Although the Imperial Constitution of 1889 did not grant autonomy to local governments, the ministry of the interior in fact permitted a measure of local autonomy” (Hashimoto 1989, 8). In Post-World War II Japan, the Local Autonomy Law of 1947 fortified this autonomy as it allowed local governments such as prefectures, cities, and others to make ordinances as long as they do not violate national laws. The first post-World War II pollution related regulations was promulgated in Tokyo in 1949, decades ahead of any national pollution laws. By 1971, all prefectural governments established the pollution prevention ordinances. At the same time, the local governments started making pollution prevention contracts with businesses, first of which was between Shimane-prefecture and paper and textile companies in 1952 (Ogata 8). Since then, frequent bargaining took place at many construction sites of power stations (Lesbirel 1998). Although this bargaining resulted in additional costs, initially, for compensation to fishermen etc., in the end, the bargaining allowed for effective monitoring, which lowered the overall cost to the company and to society.

As a further indication of how Japanese perceived pollution problems to be local issues rather than national ones, many of the early pollution issues came to be known by the name of the town or city where they occurred, rather than by the chemical that was causing the problem: for example, Ashio, Besshi, Hitachi, Osaka, Yahata, Tokyo, Kanagawa, Fukuoka, Mishima-Numazu, Nishinomiya, Isogo, and Sapporo, among others. All four major pollution diseases came to be known by the specific places where they occurred rather than their pollutant name: Minamata Disease (mercury poisoning), Niigata Minamata Disease (mercury poisoning), Yokkaichi Asthma (sulfur dioxide and nitrogen dioxide), or the feeling they caused as was the case with Itai-Itai (Ouch! Ouch!) Disease (cadmium poisoning).
NIMBY Innovations in Japan

Japanese political institutions provided the institutional framework to channel environmental problems into NIMBY politics. First, one-party dominance encouraged the framing of environmental problems as non-partisan technical issues. Second, inter-ministerial disputes shifted the location of the solution to the local level even where the problems were broader in scope. Third, local government leaders, particularly in major cities where the pollution tends to concentrate many, tend to be opposition leftists, who were more sympathetic to the health and environmental concerns of the residents. These local governments picked up the local concerns well and provided various policy innovations in spite of their limited budgetary resources.

LDP’s Dominance Contributed to a NIMBY Solution

After ten years of volatility following the end of World War II, Japan had extremely stable national party politics with the LDP ruling the government continuously from 1955 until 2009. What Hall calls the "third-order change" (279), or “a radical changes in the overarching terms of policy discourse” did not take place in Japan until 2009. During the so-called 1955 system the LDP maintained power and the opposition parties, even the largest Japan Socialist Party (JSP), was ridiculed as a half-party. In 1955, three years after the end of the Allied Occupation of Japan, two conservative parties merged into the Liberal Democratic Party (LDP). This was a response to the rising power of the JSP, which benefited from rapid urbanization and lingering social and economic confusion in the wake of the war. The merger of 1955 marked the beginning of more than a half-century of one-party dominance. Although this so-called 1955 system was punctuated in 1993, the LDP regained power in less than a year, while opposition parties were in disarray.

The environment was not framed as a partisan issue at the national level, given the LDP dominance of the government. This means that environmental issues were not “ politicized” as much as they were in Germany and the United States, where leading political parties fought bitter campaigns centered around environmental policy issues. Therefore “the difficulty of building sufficient consensus among the ministries” (Schreurs 173) was quite distinct from the national level political consensus, which Japan had sustained for half a century since 1955. Election results as well as public opinion polls of the half-century until 2009 clearly indicated continuing public support for the LDP. Thus, the two most important battle grounds for environmental issues were (1) inter-ministerial, when different ministries with overlapping jurisdictions competed for favored policy solutions, and (2) local governmental, where actors at the local level (citizens, corporations, local government officials) fought to improve their position in a specific local community.

Inter-ministerial Battles led to a NIMBY Solution

Although there was consensus in the legislative branch of government through LDP dominance, different ministries diverged significantly and competed for favored policy solutions to environmental problems. Inter-ministerial politics helped promote NIMBY solutions because it created openings for local policy innovation. It is important to realize that policymaking is just a
part of the entire politics. Implementation or enactment is also a key process of politics and this is where the coordination of various ministries matters. (Reed 1981: 255).

Japan’s environmental policy faced significant collective action problems at this level because turf battles among ministries were very fierce. It is commonly observed, “Japanese administration is characterized by vertical fragmentation (tate wari gyosei), with each ministry jealously guarding its jurisdictions and exercising a virtual veto over any proposals that would impinge upon its prerogatives” (Reed 1981: 255). As in many other countries, we can conceptually divide Japanese ministries into pro-environment and pro-economic growth sides based on respective jurisdiction. The Ministry of Health, Labor, and Welfare (MHLW) represented the pro-environment side. On the pro-economic growth side is the Ministry of Economy, Trade, & Industry (METI). The Ministry of Land, Infrastructure, Transport and Tourism (MLIT) and Ministry of Agriculture, Forestry, and Fishery (MAFF) are in the middle, but the MAFF tends to be more environmentally protective. Since 1971, pro-environment policy was typically represented by the Environment Protection Agency, which was finally upgraded to the ministry level in 2001 as the Ministry of Environment.

This general division of ministries between pro-environment and pro-economic growth, however, does not always hold. It is very important to note that METI’s role has been much more ambiguous than its name suggests. In cases where METI shared interests with a pro-environment ministry such as the Ministry of Health and Welfare, it did not hesitate to collaborate, as can be seen in Dr. Kurokawa’s Investigating Task Force regarding the Yokkaichi case in 1964 (Hashimoto 1989, 16). When the MHLW found the increase of the asthma in the city of Yokkaichi, the MHLW contacted METI if it would like to set up a joint research commission. METI agreed, and the joint commission was created, led by Dr. Kurokawa, the Director General of METI’s Institute of Industrial Technology. In that case, Dr. Kurokawa’s all recommendations, many of which were technical improvements, were implemented.

METI is an ardent supporter of anti-pollution and energy-saving technology and policies. For example, when the oil price declined in 1986, the petroleum businesses put a strong pressure on METI to allow more imports of petroleum with lower market price. METI usually supports petroleum industry’s demands, but in this case it was able to shift its support to alternative energy such as LNG, nuclear, and coal, having and resist the pressure from petroleum companies (Lesbirel 1988, 295).

Although METI is concerned primarily with national-level politics and policy, sometimes it can become directly engaged in NIMBY conflicts. For example, in 1963 the Shizuoka prefectural government presented a project to build a huge petro-chemical factory complex in the cities of Mishima and Numazu (Mishima-city). Citizens’ groups immediately organized demonstrations against the construction and held numerous study sessions. Eighty-two percent of the citizens of Mishima signed petitions against the construction of this petro-chemical complex. In response, two scholarly groups were created to assess the environmental impact of this complex, one formed by METI, led by Dr. Kurokawa, the same person who led the previous Yokkaichi case mentioned above, and the other organized by Mishima City, led by Dr. Matsumura. In the end,
not only did METI give up the construction project, it changed its national policies to reflect the lessons it learned in the Mishima conflict not to get involved in local pollution disputes.

This Mishima-Numazu local dispute not only expanded the NIMBY sphere of the environmental solution but also mobilized the national government, another example of NIMBY’s victory in Japan’s environmental policy innovation. In the same year of the Mishima Numazu case, METI started a large national desulfurization project under one of its research institutes, Agency of Industrial Science and Technology (AIST), to reduce the pollution produced by these types of petro-chemical complexes across the country (MOE 1971). It developed a dry desulfurization technology in 1966 and continued to work on the project until 1969 (NEDO 2-15). This was probably METI’s largest contribution to the environmental technology. The business (technology)-government (METI) linkage was a big factor of Japanese environmental technology development, and this project was one of the most important cases. Four major corporations joined this project led by METI from the beginning: Hitachi, TEPCO, MHI, Chubu Electric Power Co. (NEDO 2-17). This technology is one of the top environmental technology exports from Japan to various developing countries. According to JETRO, the largest portion (44%) of air pollution prevention technology exports from Japan between 1997 and 2006 was the flu gas desulfurization equipment—a direct decedent of METI’s 1963 project (JETRO 2007).

Local Governments Were Key Battlefields in Environmental Policymaking

Local governments are the main battlefields of environmental policy making in Japan, and the battles usually take the form of NIMBY politics. There are four reasons for this. First, Japanese local governments can engage in a wide range of actions without the national government. As discussed above, the Japanese local governments under the 1947 Local Autonomy Law can enact various ordinances as long as there are no national laws that overlap jurisdiction. Also, as discussed above, the local governments are allowed to make agreements with businesses when they construct factories. Furthermore, METI generally does not want to get involved in local disputes related to pollution issues, widening the scope where local governments can make policy. In spite of the limited budget of local government, known as the “thirty percent of autonomy” (McKean 23) or Sanwari-Jichi, the local governments have quite significant leeway to establish legal mechanisms related to environmental management.

Second, implementation of environmental policies usually depends on local politics. No matter how well crafted a central government's policies are, their effectiveness will be significantly compromised if local governments do not have the willingness and ability to implement them. Thus, local governments can influence not only the creation of policy at the local level, but also the implementation of national policy that affects their community.

Third, local leaders are elected in a different way than national leaders in Japan. Japan has a parliamentary democracy at a national level, but governors of prefectures and mayors of cities, towns, and villages are directly elected. The individual governor or mayor, rather than the party, has a major effect on policy choices. In the case of Japan, several governors and mayors played key roles that led to the success of environmental policies in the 1970s, and many of them were
not from the LDP but from left-wing parties (Hashimoto 1989, 27). It is important to note that major NIMBY innovations came from the local governments whose leaders were leftists.

Finally, and most importantly, local politics matters because local environmental issues can avoid many collective action problems when they are addressed at the local level. Local environmental issues tend to be viewed as NIMBY issues, which allow activists to overcome the collective actions problems that often plague environmental politics at national and global levels. At the local level both polluters and beneficiaries are clearly defined, information can be obtained relatively easily, and sanctions can be applied against violators. Thus, coordination is much easier at this level. In short, this is the strength of NIMBY, which the Japanese have used to positive effect to address major environmental challenges. Local NGOs, or the citizen’s movements, were able to remain local partially because of their effectiveness in working with local governments to solve collective action problems related to the environment (Haddad 2012; McKean 2008). Sporadic citizen’s movements in various specific cases as shown below and in more details in the case of how auto emission control improved having started from various local incidents.

In the Japanese case, the inter-ministerial bickering at the national level was overcome by sound policy making at the local level. Starting in the mid-1960s in the City of Yokohama, local governments were able to force corporations to agree on pollution control, or pollution prevention contracts (McKean 149). In December 1964, then the mayor of Yokohama, Asukata, requested the electric company J-Power to agree on fourteen environmental conditions upon the construction of a power plant in Isogo in Yokomaha, to which J-Power agreed. This type of private agreement between local governments and corporations regarding the pollution control became known as “Yokohama Formula” and spread to various siting cases in Japan later (Matsumoto: 3). The number of pollution prevention contract arrangements between the local governments and corporations, or “Yokohama Formula” rose to 800 by 1970 and to more than 25,000 by 1984. The enforcement was effective at this level because the corporations helped to craft the pollution restrictions, and local government officials were able to insist on time-consuming environmental impact studies because the demands are coming from local fishermen and residents whose life are at stake due to the environmental impact of the plants that are planned to be built, a typical NIMBY case (Eguchi 1980: 269).

The local bargaining process is very different from national-level environmental policy-making because local governments have considerable leeway to negotiate with corporations and those corporations must gain local government approval in order to operate in any given jurisdiction as discussed above in the case of Yokohama. It is common in Japan for local governments to impose more stringent environmental ordinances than the national government (Hashimoto 1989: 74). For example, the Tokyo Metropolitan government under Governor Minobe in 1969 began the trend of stringent local pollution regulations than national levels (Schreurs 2002: 41). This pattern where NIMBY politics led to local policy innovation, which in turn led to national policy change, has been common in Japan.
The Analysis of the Survey

The survey was conducted in May and June. The letter was sent to the mayors of each municipality via mail on May 6, 2014. As of June 29, the author received thirty-five replies (48%) out of seventy-three sent total. Since this is a highly controversial and politically sensitive matter in Japan right now, it is understandable that some mayors (municipalities) did not want to respond. There were even responses that they replied simply stating that they cannot answer.

The following is the basic summaries of the answers to the questions. Overall results supported my hypotheses. The hosting municipalities, which tend to receive much more positive economic benefits, which include employment, the subsidies/donations from the electric companies, and from the government, tend to support (re)starting of nuclear power plants much more than neighboring municipalities that tends to receive less economic benefits from the nuclear power plants. While in the case of an accident like Fukushima, many were negatively influenced by the accident severely if not as severe as hosting municipalities. The interest on this issue is also higher among the municipalities that host nuclear power plants than neighboring municipalities. Let’s take a look at the municipalities that host the nuclear power plants.

<table>
<thead>
<tr>
<th>Q1: Would you support the (re)start of the nuclear power plant if the NRA (Nuclear Regulation Authority) declares that it is safe, or oppose the (re)start? Please choose the one that is closest to your opinion from the below.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A) I support (re)start as soon as possible.</td>
<td>3</td>
</tr>
<tr>
<td>B) After our own consideration, eventually I will support (re)start the power plant.</td>
<td>1</td>
</tr>
<tr>
<td>C) I oppose (re)start regardless of the conclusion of the NRA.</td>
<td>1</td>
</tr>
<tr>
<td>D) I do not have a particular opinion.</td>
<td>0</td>
</tr>
<tr>
<td>E) I have not decided yet.</td>
<td>4</td>
</tr>
<tr>
<td>Although there was a reply, but no answer to this question.</td>
<td>1</td>
</tr>
<tr>
<td>No reply</td>
<td>8</td>
</tr>
<tr>
<td><strong>Total Number of Municipalities where Nuclear Power Plants are Located.</strong></td>
<td>18</td>
</tr>
<tr>
<td><strong>Return Rate</strong></td>
<td>56%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q2A: Please answer this question if you chose A) or B) in the previous Q1. Choose the reason(s) from below as many as you agree to.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A) Since the NRA says safe, it should be safe.</td>
<td>2</td>
</tr>
<tr>
<td>B) The positive economic effects of the (restarting) is large for local economy.</td>
<td>3</td>
</tr>
<tr>
<td>C) It will contribute to vitalize Japanese economy.</td>
<td>2</td>
</tr>
</tbody>
</table>
D) Nuclear is a fundamentally superior method of power generation. 4
E) To fulfill my election promises. 0
F) Others: 0

Q2B: Those who chose C) in Q1, please answer the following question. Choose the reason(s) from below as many as you agree to.

<table>
<thead>
<tr>
<th>Reason</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>A) I cannot trust even if the NRA says it is safe.</td>
<td>0</td>
</tr>
<tr>
<td>B) (Re)starting will bring little positive economic effects to the local economy.</td>
<td>0</td>
</tr>
<tr>
<td>C) Fundamentally, I oppose to nuclear power generation.</td>
<td>0</td>
</tr>
<tr>
<td>D) To fulfill my election promises.</td>
<td>0</td>
</tr>
<tr>
<td>E) Others:</td>
<td>1</td>
</tr>
</tbody>
</table>

Q2C: Please answer the following question if you have chosen D) or E) in Q1. Choose the reason(s) from below as many as you agree to.

<table>
<thead>
<tr>
<th>Reason</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>A) It is a difficult issue to make a decision.</td>
<td>3</td>
</tr>
<tr>
<td>B) It is a politically sensitive issue.</td>
<td>0</td>
</tr>
<tr>
<td>C) I am not interested in the issue.</td>
<td>0</td>
</tr>
<tr>
<td>D) Others:</td>
<td>1</td>
</tr>
</tbody>
</table>

The rate of positive economic effects 70%

Q3A: Please answer the following questions if you have chosen A) or B) in Q3. If you have studied the amount of positive effects of the nuclear power plant, please let me know the rough amount in numbers.

A: The Municipality where the Nuclear Power Plant is Located:

The answer was not out of expectation. Since this is such a politically sensitive issue, the largest numbers of answer to the Q1 was “undecided.” Yet, as the result of the neighboring municipalities below show, there was more support of (re)starting nuclear power plants among the municipalities that host nuclear power plants. If Q1’s A and B added, the total of the support of (re)start matches the number of undecided (44% respectively) among the municipalities that
responded to this survey. Among the reasons of their support of nuclear power plants (Q2A), the belief that nuclear power generation is fundamentally a superior way to generate electricity is standing out as well as the “local” economic benefits. Finally, even among the municipalities that stated “undecided” admit the positive economic effects of nuclear power plants. The total of seventy percent of those who responded stated the positive economic effects of (re)starting nuclear power plants.

Let us move on to the result of neighboring municipalities of the nuclear power plants.

<table>
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<tr>
<th>Q1: Would you support the (re)start of the nuclear power plant if the NRA (Nuclear Regulation Authority) declares that it is safe, or oppose the (re)start? Please choose the one that is closest to your opinion from the below.</th>
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<td>D) I do not have a particular opinion.</td>
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<td>E) I have not decided yet.</td>
</tr>
<tr>
<td>Although there was a reply, but no answer to this question.</td>
</tr>
<tr>
<td>No reply</td>
</tr>
<tr>
<td>Total Neighboring Municipalities</td>
</tr>
</tbody>
</table>

Return Rate 46%

<table>
<thead>
<tr>
<th>Q2A: Please answer this question if you chose A) or B) in the previous Q1. Choose the reason(s) from below as many as you agree to.</th>
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<tr>
<td>A) Since the NRA says safe, it should be safe.</td>
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<td>B) (Re)starting will bring little positive economic effects to the local economy.</td>
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<td>C) It will contribute to vitalize Japanese economy.</td>
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<tr>
<td>D) Nuclear is a fundamentally superior method of power generation.</td>
</tr>
<tr>
<td>D) To fulfill my election promises.</td>
</tr>
<tr>
<td>F) Others: _____________________________</td>
</tr>
</tbody>
</table>

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<th>Q2B: Those who chose C) in Q1, please answer the following question. Choose the reason(s) from below as many as you agree to.</th>
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</thead>
<tbody>
<tr>
<td>A) I cannot trust even if the NRA says it is safe.</td>
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<tr>
<td>B) (Re)starting will bring little positive economic effects to the local economy.</td>
</tr>
<tr>
<td>C) Fundamentally, I oppose to nuclear power generation.</td>
</tr>
</tbody>
</table>
D) To fulfill my election promises. 
E) Others: 

Q2C: Please answer the following question if you have chosen D) or E) in Q1. Choose the reason(s) from below as many as you agree to.

A) There will be little influence geographically (safety)/economically. 
B) It is a difficult issue to make a decision. 
C) It is a politically sensitive issue. 
D) I am not interested in the issue. 
E) Others: 

Q3: I would like to ask you about the economic effect of the nuclear power plant. Choose one from below.

A) There is a positive effect. 
B) Although there is a positive effect, negative effects such as safety and rumors overwhelm the positives. 
C) There is no positive effect. 

Declined to Answer 

The rate of positive economic effects

Q3A: Please answer the following questions if you have chosen A) or B) in Q3. If you have studied the amount of positive effects of the nuclear power plant, please let me know the rough amount in numbers. 

The results confirm my hypotheses. The opposition to the (re)starting of nuclear power plant is four times higher than hosting municipalities. Opposition, no opinions, and undecided dominate while supporting municipalities is less than ten percent. Positive economic effects are stated less, 50%, compared to hosting municipalities 70% although it was surprising that still about a half of neighboring municipalities pointed out the positive economic effects.

At the same time, there have been a few interesting findings beyond the multiple-choice answers. In various answers in such as “others,” a few leaders of municipalities expressed interesting points. For example, twelve municipalities out of thirty-five responses expressed the desire that the central government should decide what to do with nuclear power plants rather than asking for each municipality’s opinions. This is legally true. The central government alone can determine the (re)start of nuclear power plants, not local municipalities or even prefectural governors. Therefore, judging this number, twelve, if this is many or surprisingly low requires some thinking. Related to this, only ten municipalities explicitly expressed the desire to put local resident’s opinions in the decision making of the (re)starting nuclear power plants. This result goes against the NIMBY-ness of the (re)starting of nuclear power plant. However, this may be
the result of the confusing and ambiguous situation that Japan is put in. It is very difficult for most of the politicians to express her/his opinions clearly. Pointing fingers at someone else including the central government may be a “safe” choice for most of the leaders of the municipalities.

The second interesting findings are that the hosting municipalities and surrounding municipalities tend to not to oppose strongly each other. This can be the result of to prevent confrontation upfront each other when one municipality is known for its strong support (or opposition) to (re)starting nuclear power plants. For example, see the followings.

<table>
<thead>
<tr>
<th>Nuclear Power Plant</th>
<th>Host</th>
<th>Neighboring (number of municipalities)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Support</td>
<td>Undecided (1)</td>
</tr>
<tr>
<td>B</td>
<td>Support</td>
<td>Support (1) Undecided (1)</td>
</tr>
<tr>
<td>C</td>
<td>Oppose</td>
<td>Undecided (1) Oppose (1)</td>
</tr>
<tr>
<td>D</td>
<td>Undecided</td>
<td>Undecided (1)</td>
</tr>
<tr>
<td>E</td>
<td>Undecided</td>
<td>Undecided (1) Oppose (1)</td>
</tr>
<tr>
<td>F</td>
<td>Support</td>
<td>Undecided (5)</td>
</tr>
<tr>
<td>G</td>
<td>Support</td>
<td>Support (1) Undecided (1)</td>
</tr>
</tbody>
</table>

Among the seven cases above, none of the surrounding municipalities express the opposite of its relevant neighboring municipalities, i.e. while the hosting municipality supports restart, one of the neighbors opposes it. This result makes this author think some common interests among each region beyond the border of each municipality. After all, NIMBY’s definition of “backyardness” is arbitrary in terms of what to be considered one’s own “backyard.” Other than direct subsidies provided to each municipalities, (re)starting may affect the economy regionally rather than at a municipality level. Or, it may be simply a result of each municipal leaders know the opinions of other neighbors and tried not to confront each other as stated above.

Conclusion & Future Research Plan

This is still the very beginning of this project. Just a few multiple choice questions will not reveal the process of policy-making in local municipalities. This survey was to cover the entire (73) municipalities that are either hosting nuclear power plants or neighboring hosting municipalities. Unfortunately, only about half of the municipalities responded. Yet, the author found some interesting aspects that support the hypotheses to some extent. The next step should be to obtain the context of several selected cases by direct interviewing of various parties involved and reading the municipal parliament records. This will take place this October. The focus is to view how much or little the entire nation (or even the entire world) is in perspective relative to local
interests. This may shed light on the differences among regions. Which region is more supportive to nuclear power plants beyond local municipal boundary? This is one crucial question to ask in my October trip. The project will look for the key factors that determine the decisions if it is locally or nationally motivated whether from economic or environmental viewpoints.
Appendix 1: The Survey Questions (Original: Japanese)

A: For the municipality where a nuclear power plant is located, constructed, and planned:

質問表
(原子力発電所所在地自治体)
自治体名：________________

ご協力ありがとうございます。次の質問の該当するところに○をおつけ下さい。

以下の全ての質問は、現在行われている、または将来行われるであろう原子力規制委員会の審査の結果、「安全である」という結論が出されたとの仮定でお答え願います。

質問1：安全であるという上記の結論が出た場合、原子力発電所の(再)稼働に賛成でしょうか、反対でしょうか。次の中から、ご自身（自治体）のお考えに一番近いものをお選び下さい。

A) できるだけ早く(再)稼働希望。
B) さらに独自の検討を加えて、ゆくゆくは(再)稼働希望。
C) 原子力規制委員会の結論に関わらず(再)稼働反対。
D) 特に意見はない。
E) 賛成か反対か決めていない。

質問2 A: 質問1で A)または B)とお答え下さった方にお尋ねいたします。理由として次の中から該当するものをいくつでもお選び下さい。

A) 原子力規制委員会が安全というものは安全だろうから。
B) (再)稼働の地元へのプラスの経済効果が大きいから。
C) 日本経済の活性化に貢献するから。
D) 基本的に原子力発電は少なくとも当面は優れた発電方法であるから。
E) 自分の選挙公約を果たすため。
F) その他：__________________________________________

質問2 B: 質問1で C)とお答え下さった方にお尋ねいたします。理由として次の中から該当するものをいくつでもお選び下さい。

A) 原子力規制委員会が安全といっても信用できないから。
B) (再)稼働の地元への経済効果が少ないから。
C) 基本的に原子力発電には反対だから。
D) 自分の選挙公約を果たすため。
E) その他：_________________________________________________________________

質問2 C: 質問1で D)または E)とお答え下さった方にお尋ねいたします。理由として次の中から該当するものをいくつでもお選び下さい。

A) 難しい問題ですぐには結論が出せないから。
B) 政治的に微妙な問題だから。
C) 関心がないから。
D) その他：_________________________________________________________________

質問3：原子力発電所の経済効果についてお尋ねします。次のうち、該当するものを一つだけお選び下さい。

A) プラスの経済効果はある。
B) プラスの経済効果はあるものの、マイナス（安全性／風評被害等）の方が大きい。
C) プラスの経済効果はない。

質問3 A：質問3で、A)または B)とお答え下さった方にお尋ねします。もし、プラスの経済効果の試算を行われたことがある場合、あるいは、これくらいはあるだろうというお考えをお持ちの場合、数字をご記入下さい。

________________________________________________________________________円くらい

質問4: その他、なにかございましたら、以下のスペースにご自由にご記入下さい。

ご協力ありがとうございました。
B: For the municipality that is located right next to the municipality where a nuclear power plant (including being constructed and planned) is located.

質問表
（原子力発電所隣接／近隣自治体）
自治体名：____________________________________

ご協力ありがとうございます。次の質問の該当するところに○をおつけ下さい。

以下の全ての質問は、現在行われている、または将来行われるであろう原子力規制委員会の審査の結果、「安全である」という結論が出されたとの仮定でお答え願います。

質問 1：安全であるという上記の結論が出た場合、原子力発電所の（再）稼働に賛成でしょうか、反対でしょうか。次の中から、ご自身（自治体）のお考えに一番近いものをお選び下さい。

A) できるだけ早く（再）稼働希望。
B) さらに独自の検討を加えて、ゆくゆくは（再）稼働希望。
C) 原子力規制委員会の結論に関わらず（再）稼働反対。
D) 特に意見はない。
E) 賛成か反対が決めていない。

質問 2 A: 質問 1でA)またはB)とお答え下さった方にお尋ねいたします。理由として次の中から該当するものをいくつでもお選び下さい。

A) 原子力規制委員会が安全というものは安全だろうから。
B) （再）稼働の地元へのプラスの経済効果が大きいから。
C) 日本経済の活性化に貢献するから。
D) 基本的に原子力発電は少なくても当面は優れた発電方法であるから。
E) 自分の選挙公約を果たすため。
F) その他：________________________________________

質問 2 B: 質問 1でC)とお答え下さった方にお尋ねいたします。理由として次の中から該当するものをいくつてもお選び下さい。

A) 原子力規制委員会が安全といっても信用できないから。
B) （再）稼働の地元への経済効果が少ないから。
C) 基本的に原子力発電には反対だから。
D) 自分の選挙公約を果たすため。
E) その他：________________________________________
質問2： 質問1でD)またはE)とお答え下さった方にお尋ねいたします。理由として次の中から該当するものをいくつでもお選び下さい。

A) 地理的（安全面）／経済的にほとんど影響を受けないから。
B) 難しい問題ですぐには結論が出せないから。
C) 政治的に微妙な問題だから。
D) 関心がないから。
E) その他：______________________________

質問3：原子力発電所の経済効果についてお尋ねします。次のうち、該当するものを一つだけお選び下さい。

A) プラスの経済効果はある。
B) プラスの経済効果はあるものの、マイナス（安全性／風評被害等）の方が大きい。
C) プラスの経済効果はない。

質問3A：質問3で、A)またはB)とお答え下さった方にお尋ねします。もし、プラスの経済効果の試算を行われたことがある場合、あるいは、これくらいはあるだろうというお考えをお持ちの場合、数字をご記入下さい。

______________________________円くらい

質問4：その他、なにかございましたら、以下のスペースにご自由にご記入下さい。

ご協力ありがとうございました。
Appendix 2: The Survey Questions (English Translation)

A: For the municipality where a nuclear power plant is located, constructed, and planned:

Questionnaire
(The Municipality where a Nuclear Power Plant is Located)

The Name of Municipality _____________

Thank you for your cooperation. Please circle the choice that fits to your opinion.

All the following questions are under the assumption that the Nuclear Regulation Authority (NRA) would conclude that the relevant nuclear power plant is safe after the currently ongoing investigations or the investigations that will take place in the future.

Q1: Would you support the (re)start of the nuclear power plant if the above conclusion that it is safe is provided, or oppose the (re)start? Please choose the one that is closest to your opinion from the below.

A) I support (re)start as soon as possible.
B) After our own consideration, eventually I will support (re)start the power plant.
C) I oppose (re)start regardless of the conclusion of the NRA.
D) I do not have a particular opinion.
E) I have not decided yet.

Q2A: Please answer this question if you chose A) or B) in the previous Q1. Choose the reason(s) from below as many as you agree to.

A) Since the NRA says it is safe, it should be safe.
B) The positive economic effects of the (restarting) is large for local economy.
C) It will contribute to vitalize Japanese economy.
D) Nuclear is a fundamentally superior method of power generation.
E) To fulfill my election promises.
F) Others: __________________________________________________

Q2B: Those who chose C) in Q1, please answer the following question. Choose the reason(s) from below as many as you agree to.

A) I cannot trust even if the NRA says it is safe.
B) (Re)starting will bring little positive economic effects to the local economy.
C) Fundamentally, I oppose to nuclear power generation.
D) To fulfill my election promises.
E) Others: __________________________________________________

Q2C: Please answer the following question if you have chosen D) or E) in Q1. Choose the reason(s) from below as many as you agree to.


A) It is a difficult issue to make a decision.
B) It is a politically sensitive issue.
C) I am not interested in the issue.
D) Others: ____________________________________________

Q3: I would like to ask you about the economic effect of the nuclear power plant. Choose one from below.

A) There is a positive effect.
B) Although there is a positive effect, negative effects such as safety and rumors overwhelm the positives.
C) There is no positive effect.

Q3A: Please answer the following questions if you have chosen A) or B) in Q3. If you have studied the amount of positive effects of the nuclear power plant, please let me know the rough amount in numbers.

About __________________________________________________yen

Q4: If you have any other comments, please write them down in the following space freely.

Thank you very much for your cooperation.
B: For the municipality that is located right next to the municipality where a nuclear power plant (including being constructed and planned) is located.

**Questionnaire**

(The Neighboring Municipality where a Nuclear Power Plant is Located)

The Name of Municipality __________

Thank you for your cooperation. Please circle the choice that fits to your opinion.

All the following questions are assuming that the Nuclear Regulation Authority (NRA) would conclude the relevant nuclear power plant is safe after the currently ongoing investigations or the investigations that will take place in the future.

Q1: Would you support the (re)start of the nuclear power plant if the above conclusion that it is safe is provided, or oppose the (re)start? Please choose the one that is closest to your opinion from the below.

A) I support (re)start as soon as possible.
B) After our own consideration, eventually I will support (re)start the power plant.
C) I oppose (re)start regardless of the conclusion of the NRA.
D) I do not have a particular opinion.
E) I have not decided yet.

Q2A: Please answer this question if you chose A) or B) in the previous Q1. Choose the reason(s) from below as many as you agree to.

A) Since the NRA says it is safe, it should be safe.
B) The positive economic effects of the (restarting) is large for local economy.
C) It will contribute to vitalize Japanese economy.
D) Nuclear is a fundamentally superior method of power generation.
E) To fulfill my election promises.
F) Others: _____________________________

Q2B: Those who chose C) in Q1, please answer the following question. Choose the reason(s) from below as many as you agree to.

A) I cannot trust even if the NRA says it is safe.
B) (Re)starting will bring little positive economic effects to the local economy.
C) Fundamentally, I oppose to nuclear power generation.
D) To fulfill my election promises.
E) Others: _____________________________

Q2C: Please answer the following question if you have chosen D) or E) in Q1. Choose the reason(s) from below as many as you agree to.
A) There will be little influence geographically (safety)/economically.
B) It is a difficult issue to make a decision.
C) It is a politically sensitive issue.
D) I am not interested in the issue.
E) Others: ____________________________________________

Q3: I would like to ask you about the economic effect of the nuclear power plant. Choose one from below.

A) There is a positive effect.
B) Although there is a positive effect, negative effects such as safety and rumors overwhelm the positives.
C) There is no positive effect.

Q3A: Please answer the following questions if you have chosen A) or B) in Q3. If you have studied the amount of positive effects of the nuclear power plant, please let me know the rough amount in numbers.

About ...........................................................................yen

Q4: If you have any other comments, please write them down in the following space freely.

Thank you very much for your cooperation.
Bibliography


