3rd International Conference

on Public Policy (ICPP3)

June 28-30, 2017 – Singapore

T17CP20

Energy Decentralization

Title of the paper

Collaboration and Reflexivity in Local Energy Governance: Lesson Learned from Seoul's Case

Author(s)

Youhyun Lee, Incheon Climate & Environment Center, Incheon Development Institute, South Korea, skuld415@gmail.com

Date of presentation

Friday, 30 June 2017

Collaboration and Reflexivity in Local Energy Governance: Lesson Learned from Seoul's Case

Working Paper[1]

Youhyun Lee[2]

Abstract: South Korea's energy policy has been historically established through an energy production structure that relies on thermal and nuclear power generation which consists the 'Hard Energy System'. However, with the emergence of climate change issues, energy transition to renewable energy at the local government level became a crucial task. This study is an analysis of Seoul city's local energy policy: One Less Nuclear Power Plant Initiative, applying collaborative governance framework by Anselle & Gash and the reflexivity criterion in Korean policy context. The local energy governance model of Seoul city can serve as a model for other local governments, which can eventually lead to the 'Soft Energy System' based on energy decentralization.

Key Words: Local Government, Local Energy Policy, Collaborative Governance, Reflexivity, Soft Energy System

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[2] Youhyun Lee is a researcher at Incheon Climate & Environment Research Center, Incheon Development Institute. She has published articles on Comparative Renewable Energy Policies in France and in South Korea, Adopting the Emission Trading Scheme in South Korea. She has also co-authored Korea's Green Growth Experience (GGGI, 2016) with other leading green growth experts. Dr. Lee studied Public Administration at University of Sungkyunkwan (Seoul, Korea) for her MA and at University of Paris 1 Panthéon-Sorbonne (Paris, France) for PhD in Legal Science. E-mail : skuld415@gmail.com, skuld415@idi.re.kr

Ⅰ. Introduction

When it comes to coping with issues of climate change, South Korea (herein referred to as 'Korea') has been very conservative in its approach. While the nation made itself into becoming the seventh largest global economy, all accomplished within a very short timeframe, Korea once played a leading role in the global development of the green-growth paradigm. Yet the country has been passive towards issues that relate to climate change and energy transition. This is due to the deep, historical connection Korea's energy policies have with the nation's economic growth pattern, in which energy transition developed with correspondence in the process of economic growth.

1. Transition towards Energy Decentralization

Korea's energy policy (herein referred to as 'Policy' or 'Policies') developed through two collaborative measures: a) the leadership of a strong central government and b) the industrial structure of the economy, based on market mechanisms. Korea's first step towards developing and industrializing the use of nuclear energy began in the 1950s under the blue-print of solving 'energy poverty' in the nation. For Koreans, nuclear energy was perceived as *Dream Energy*. Since the country does not have any known natural resources available for residential and industrial use, the energy need was apparent; and with the supply of nuclear being limitless, it was required for the country. The energy dream was realized with the first Gori nuclear power plant, which began operation in July of 1978. Korea's nuclear power industry reached its full stage of development during the 1970s and 1980s, amid the global oil crises. Since then, nuclear was adopted as an alternative energy source to reduce reliance on oil and thus improve energy security in the country. This idea encouraged Korea to promote the expansion of nuclear power plants in the country (Park & Ryu, 2012). Subsequently, over time as global warming and air pollution were becoming a national/global issue, the construction of nuclear power plants continued because nuclear power was still 'a cleaner source of energy.'

However, nuclear energy is no longer welcomed in our society, as recent disasters have caused several social conflicts both locally and globally. These events have subsequently affected contemporary energy policies in Korea. For one, the nuclear disaster in Fukushima, Japan in 2011 initiated the anti-nuclear phenomenon in Korean society. Secondly, from a

local perspective, the construction of the Mi-Ryang electrical transmission tower (which connects to the Gori nuclear power plant) exacerbated the nuclear conflict, fueling tension between Mi-Ryang residents and the Korea Electric Power Corporation (KEPCO)[3]. In addition, the treatment of radioactive waste (a byproduct of nuclear energy) has been another point of concern that has fueled the need for transition to more renewable sources of energy. The hope is to replace Korea's heavy reliance on nuclear for its daily needs.

Korea's national attention for the need of renewable energy heightened amid international response to deal with the global climate change problem, with addition to the green growth policy initiatives of former President, Lee Myung-Bak and his administration (2008-2012). Although potential measures were taken to *Green Korea*, the level of resistance from the industrial sector made the potential conversion from nuclear to renewable energy difficult. Although the nation showed an increased level of realization and need for improvement under President Lee's administration, this did not lead to the expanded use of renewable, as data from the current energy system represents.

Recently, there was a national initiative to extend the importance of nuclear energy in Korea, along with trying to introduce nuclear energy as being an environmentally friendly source because of its emission levels. Nuclear emits little-to-no greenhouse gases. Former President Park Geun-Hye and her Administration (2013-2017) promoted policies that emphasized 'Creative Economy,' rather than 'Green Growth,' and thus, policies relevant to environment, energy and climate change eventually became obsolete, although not in its entirety. Statistically, Korea's total energy supply (as of 2017) comes from petroleum (31.1%), coal (28.6%), natural gas (21.2%), biofuel and waste energy (10.3%), nuclear energy (4.8%), hydrogen (2.4%) and renewable energy (1.5%). Based on these numbers, Korea is still heavily reliant on fossil fuel, while renewable energy yields only 1.5% of the country's total energy supply (OECD, 2016).

[3] Miryang is located near the GO-RI nuclear facility, one of South Korea's largest nuclear complexes, in an area between Busan and Ulsan in the southeast. The conflict in Miryang reveals a great mistrust of the Korean government, especially in the process of exploitation of energy policy in South Korea. The lack of transparency of the government and KEPCO(Korea Electric Power) and the isolation of local residents from communication and the violation of administrative procedures aggravate the conflict between civil society and the government and this increases suspicion towards the Korean government (Lee Youhyun, 2016)

The central government's policies brought a turbulent sensation to Korea's political spectrum, with civil feedback being divided between the issues of pro-renewable versus pro-nuclear energy. From a macroscopic viewpoint, many environmental organizations and groups standing by the lines of the Democratic Party (which has a strong left-wing disposition) have called for the transition to renewable energy and the diminishment of nuclear power plants, while the Korea Hydro & Nuclear Power company and Conservative Party (which has a strong right-wing disposition) asserts maintaining nuclear energy and its current rate of production. For local communities, their perspectives vary. The pros and cons of renewable versus nuclear respond to more keen issues that depend on the regional situation. For instance, local hostilities from districts towards nuclear energy have surfaced numerous times. These are areas where nuclear power plants were already built, or are due for construction; other main factors that negatively attribute the construction of these facilities are the construction of radioactive waste facilities and electric transmission towers, which is clear-cut dissension.

Unlike coal-thermal power generation, nuclear power generation does not create any noticeable amount of greenhouse gases, because nuclear energy is generated through fusion. Nuclear energy is not considered an opposite to renewables, but in Korea's current policy framework, the advancement of renewable energy policy is commonly understood as either diminishing or removing nuclear from its energy profile. Such understanding is well represented in the structural differences between hard and soft energy systems (Lobins, 1976). Lee & Lee (2016) points out the triangle with hard energy systems (See figure 1).

As the nation advanced itself under the development paradigm, Korea grew as a developmental state through a compressed course of modernization (Yoon Soonjin, 2003). Hard energy systems, as defined, is the energy system of a developmental state (Byren et al, 1991; Kim Jongdal 1998, Yoon Soonjin, 2002, Lee Pilryul, 2002, Lee & Lee, 2016). A developmental state, as such, utilizes fossil fuels as its primary source of energy; the state is run by a centralized, undemocratic system, the state and capital have direct influence on technology and development, and has influence on the development of a stable energy supply system (Lee, 2015:32). Therefore, hard energy systems are completely driven by the central government. It is almost impossible to structure and produce new independent policies that are specific to local regions. This also raises problems of equity, as it demands sacrifice from specific regions of the country. Take Gori as an example, where its nuclear power plant supplies energy to neighboring cities and industrial districts, such as Ulsan and Busan, and

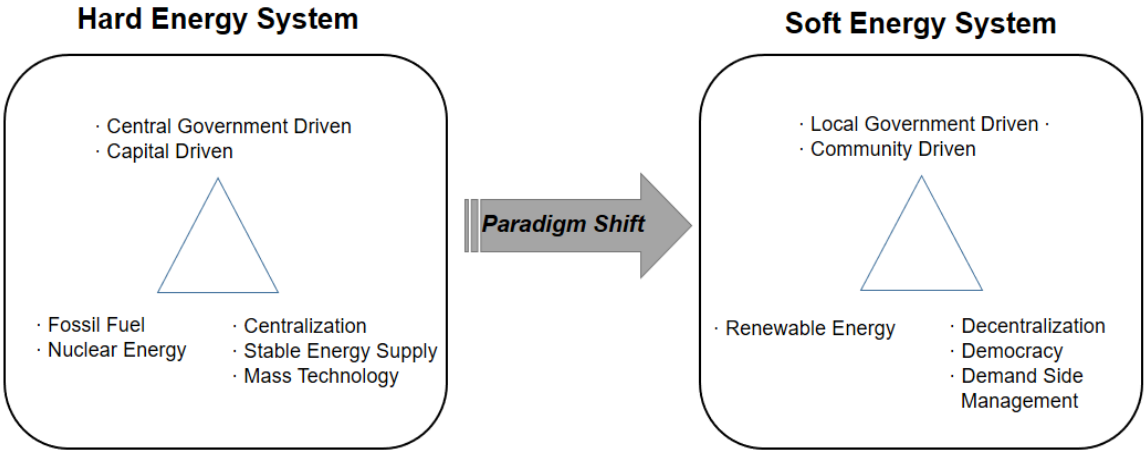
little to their communities. While nuclear energy guarantees a stable energy supply, it also has its demerits. There are problems with regulating efficiency with energy management, environmental mismanagement and social conflict.

In the context of 'new balanced development,' Korea's existing policies have been facing matters of energy sovereignty. To overcome such shortcomings, it was necessary for the nation to switch to an energy system based on energy decentralization and innovation at the local level (Lee, Sang-Hun et al., 2014).

The existing policies that were led by the Korean government had limitations because they did not inspire the public to participate in the procurement of energy, nor in the management of supply and demand. Such policies as initiated by the central government also impeded the advancement of renewable energy policies, ones that are small-scaled and dispersion-oriented. Thus, efforts to overcome such limitations were held and Seoul's 'One Less Nuclear Power Plant' (herein referred to as 'OLNPP') policy was drafted. This policy called for a conversion to a Light Energy Systems Triangle, which is based on concepts of renewable energy - local government oriented – energy decentralization.

This paper will provide a closer look at Seoul's 'OLNPP' policy and provide the general political and social contexts that led to the birth of the policy. Not only does the policy itself represent the situation of the time (one that required a decentralized energy system), but it also symbolizes the city's push for autonomous policy-making and its participatory energy governance system.

[Figure 1] Paradigm Shift in Energy System



Source : Lobins, 1976, Lee&Lee, 2016 (picture created by author)

2. Preliminary Study Review

When Park Won-Soon was elected as Seoul Mayor (December, 2011), the 'OLNPP' policy project (2012) was established as one of his pledges, and corresponding policy research began the following year (2013). The majority of the research made were discussed in correspondence with the administrative leadership of Mayor Park, as he became a political figure and policy analyst of Seoul's Solar Power Plant project, which is significant in the 'OLNPP' project. Kim Oun-Soo (2013) examined the introduction of Seoul's Sunlight Power Development Plan, which is the focus study leading the Solar Power Plant Support Plan; furthermore, it is one of the 'OLNPP' projects sub-policies. Kwon Jung-Hyun (2013) analyzed the leadership of Park and the influence he has in policy-making, while conducting similar research on the classification and influence of leadership-types. Lim Seung-Eun (2013) analyzed the types of environmental policies brought in since his election, conducting a comparative analysis against Seoul's former mayor, Oh Se-hoon, with classification on types of policy change. Tae-Hwa Lee et al. (2014) utilized the urban energy experiment framework to analyze the 'OLNPP,' with results showing that leadership acts as a significant factor to success**.** Paik Jong-Hak and Yoon Soon-Jin (2015) analyzed the policy based on the results from a citizen survey'. Lee Kang-Joon (2015) analyzed Park's policy, concluding that although the policies were successful, improvements were necessary.

Recent research conducted by Choi Seung-Geuk and Choi Geun-Hee (2016) focused on analyzing Seoul's Solar Power Plant initiatives, emphasizing the importance of citizen participation during energy transition. Although preceding studies have limited their research to OLNPP, this research has significance because it conducts a comparative analysis of OLNPP and OLNPP-2 (Phase 2) as subjects, examining the timeline, influential factors and the relationships/differences between the OLNPP and OLNPP-2. Also, methodologically, this research differentiates itself from others not only because of its in-depth analysis of the governance structure (by incorporating Ansell & Gash's analysis on collaborative governance and the components of policy evaluation in a Korean context)**,** but further, this research made it possible to analyze the 'In and Out Policy'.

[Table 1] Preceding Research

Researcher	Title of Research	Content of Research
Kim, Oon-Soo (2013)	Introduction of Seoul's 'Sunlight Power Development Support Plan'.	Analysis of the Support Plan for Solar Power Plant(s), as part of the 'One Less Nuclear Power Plant' ('OLNPP') policy.
Kwon, Jung-Hyun (2013)	Park Won-Soon's (Seoul Mayor) leadership in the policy-making process – 'Environmental Policy'.	Analyzed Park Won-Soon's leadership by classifying leadership types.
Lim, Seung-Eun (2013)	Analysis of 'Environmental Policy': focusing on policy change after the inauguration of city Mayor Park Won-Soon.	Comparative analysis of policy change, from former Mayor to the election of Park Won-Soon.
Lee, Taehwa et al. (2014)	An experiment towards Seoul's energy autonomy: The 'OLNPP' policy.	City Mayor's leadership significantly contributes to the success of policy implementation.
Paik, Jong-Hak & Yoon, Soon-Jin (2015)	Mini-Sunlight Energy Project + Citizen participation in energy development as a strategic opportunity for Seoul's 'OLNPP' Policy – data based on survey results from citizen recognition in No-won District.	Analyzed with a focus on the Solar Energy project, based on a survey on citizen recognition.
Lee,	City Mayor, Park Won-Soon's	Explains the success of the 'OLNPP'

Kang-Joon (2015)	energy policy and participatory governance.	Policy, points out the limitations of the energy system and urges improvement.
Choi, Seung-Geuk & Choi, Geun-hee (2016)	Vitalizing Solar Energy Development towards energy transition.	Analysis focuses on 'Solar Energy Policy' and emphasizes citizens' participation.

Ⅱ. Theoretical Background

1. Collaborative Local Governance

As a society evolves and experiences the intensification of pluralization and democratization, the demands for public participation in the policy paradigm simultaneously intensifies (Kwon, Gi-heon, 2010: 55). Collaborative governance, as one of the diverse types of governance, is commonly used as a term that involves cooperation among diverse groups, such as government, public and private sectors. Each group would participate in the problem-solving process that deals with social issues (Lee Myeong-Seok, 2010). In general, collaborative governance can be translated into cooperation between organizations (Shergold, 2008). Ansell & Gash (2007) defined collaborative governance as "a governing arrangement" where one or more public agencies directly engage non-state stakeholders in a collective decision-making process that is formal, consensus oriented, and deliberative, one that aims to make or implement public policy, manage public programs and assets. As a result of gathering opinions from several scholars', collaborative governance stands as a method that helps solve social issues that go beyond organizational boundaries and politics, through utilizing structured interaction between autonomous actors and organizations under the leadership of the government - to create new public value (Lee Myeong-Seok, 2010).

Ansell & Gash (2007) also stress six important criteria, which are: (1) forums are initiated by public agencies or institutions, (2) participants in the forum include non-state actors, (3) participants engage directly in decision-making and are not merely consulted by public agencies, (4) the forum is formally organized and meets collectively, (5) the forum aims to make decisions by consensus and (6) the focus of the collaboration is on public policy, or public management.

Various factors involving environmental, structural and operational factors influence collaborative, local governance (Choo Jae-Bok, 2013). The concept of collaborative governance can be defined with various meanings, but the common areas can be summarized as a) participatory, b) transparency and c) accountability (Choo Jae-Bok & Han Boo-Young, 2006).

The defining factor to the success of collaborative governance depends on the government's role as administrator when handling such issues (KIPA,2009 :140). What is necessary to achieve the best of collaborative governance are not in the forcible commands (i.e. pushing the private sector to act), but rather, they are the diverse and creative ideas proposed towards achieving common interest; collecting resources only available to the private sector while maximizing opportunities is also a favorable aspect of collaborative governance (Agranoff & McGuire, 2003).

As the public is becoming more aware that traditional methods towards resolving social problems are no longer appropriate, the importance of collaborative governance intensified as a new method of social arbitration. However, and certainly, collaborative governance is not a panacea that can efficiently resolve ALL social problems (KIPA, 2009:156). Society calls for us to acknowledge institutional diversity during a time of increasing governance (Ostrom, 2005) with voluntary cooperation from various members of society. These efforts can help find resolutions concerning social issues.

2. Reflexivity as the criterion of Korean policy

Governance, as viewed by scholars of Public Administration have several definitions, with each scholar having a separate and distinct way of explaining such a term. However, there are certain accepted commonalities as to how governance is defined, which are summarized as follows: participation, communication, horizontal decision-making process, introspective discussion, cooperation, trust, networking and social capital. In Korea, 'Governance' is not only used by scholars and by society at large, but realistically, 'Governance' is primarily used in Public Policy and is confined to specific areas of civil decision-making. Then, can 'governance' be considered as established in contemporary Korea, with its given governance-based approach and thought-process? The appropriate answer is 'not yet'. Proposals issued by

some Korean Scholars regarding Policy Evaluation Criteria and Confusion ideals all mention a common process of 'reflexivity' and trying to connect them should entitle further consideration.

Moon & Kwon (2008) put emphasis on important criterion for policy analysis, given in a Korean context: reflexivity, democracy and efficiency are considered. Firstly, when assessing the efficiency of a policy evaluation, they are made by examining the productivity of policy outcomes and the accomplishment of the policy's initial goals. Since a good-willed policy cannot always be guaranteed to become a successful policy, assessing the actual productivity in the aftermath of policy implementation can be a vital policy evaluation tool. Democracy, as well, can be a significant criterion in policy evaluation. Democracy is a critical standard in policy evaluation, since it is a concept that embeds procedural justification, based upon participation, deliberation, and consensus of the policy actors.

In modern society, where resolutions require participation of the public, democracy is not opposed to the concept of efficiency, but rather, democracy supports the facilitation of policy implementation with greater efficiency. Furthermore, Moon & Kwon (2008) discuss 'reflexivity' as one of the criterion for policy evaluations (given in the Korean context), in which its concept is based on the answers to the following questions.

- Need: Was the policy design truly based on the needs of the target population?
- Motivation: Was there benevolence in the policy agenda? Was there any communication and consideration for deviants?
- Governance: Did the policy re-awaken citizen participation in the policy network?

[Table 2] Conditions for Reflexivity Policy Model

Reflexivity	Realization of human dignity	[1st condition] Need-Based Policy Design
		[2nd condition] Benevolent Social Planner
	Matured Community-based Trust	[3rd condition] Awakened Citizenship and Participation in Policy Network

Source : Moon & Kwon, 2008

Bae Soo-Ho et al. (2016) proposed a synthesis of Confucianism and Governance theory; they considered the emphasis on reflexivity, deliberativeness, and volunteerism which is

characteristic of Confucianism to be compatible with those elements considered important in Governance. They put forward efforts to discover Governance-compatible elements in Confucianism[4] that will be a necessary percussive stage in the successful establishment of governance as an approach in Korean society. This is because the typical Korean values, outlook, consciousness, and behavior are deeply rooted in Confucianism (Kim Sang-Mook, 2012; Kim Yong-Pyong & Jung In-Hwa, 2004), and Koreans will consistently adhere to a Confucian attitude and values in their interpersonal relationships and social life (Choi Joon-Shik, 2009); this necessitates an understanding of the uniquely Korean aspects that constitute Korean society. In addition, Confucianism basically comprises both individualism and communitarianism, enabling a good deal of overlap with the requirements of governance theory[5]. This research purports to examine the policies of Seoul using the elements of collaborative governance proposed by Anselle & Gash as a framework, as well as that of reflexivity.

3. Framework for Case Analysis

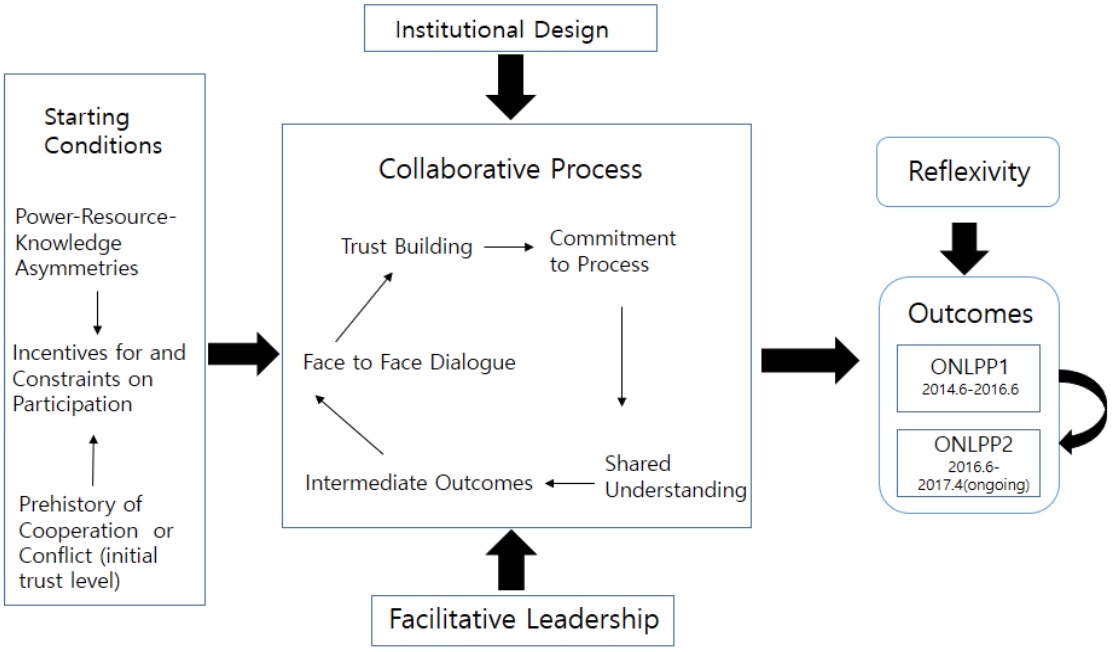
This research applies Anselle & Gash's framework for collaborative governance. Their model - initial condition to process of collaboration to final results - enables a dynamic analysis on the construction of collaborative governance by time period and phase (Cho Man-Hyung & Kim Yi-Soo, 2009: 220**).** It is an appropriate framework to use when analyzing the mechanisms of Seoul's local governance and energy policy, which is divided into two policy phases: **'**One Less Nuclear Power Plant' (OLNPP: 2011-2014) and 'One Less Nuclear Power Plant – 2' (OLNPP-2: 2014-2017).

Furthermore, with the set of policy evaluation criteria presented in the Korean context: reflexivity, which Kwon (2010) developed from W. Dunn's policy evaluation standards, has become an important criterion for governance in Korea. This research assesses the series and outcomes of policies, including the OLNPP and the OLNPP-2.

[4] Especillay for Confucian self-discipline (修身論, susinron)

[5] Bae Soo-ho et al (2016) looked at both the positive and negative aspects of the combination of governance theo ry and Confucianism. The negative factors are Confucian differential human relations and vertical culture (Bae, 2013).

[Figure 2] Framework for Analysis



Source: Anselle & Gash, 2007 (modified by author)

Ⅲ. Case Analysis: Seoul's regional energy policy, the "One Less Nuclear Power Plant" Initiative

1. Case Overview

1) Reason for Case Selection and its significance

Seoul is Korea's capital and its largest metropolitan area, which is a region that also includes the city of Incheon and the surrounding Gyeong-gi province. Seoul is the world's 16th largest city and is known for its dynamic economy, its economic interactions with other cities around the globe and its advanced technology. Seoul houses up to half of the country's 50.22 million population, with roughly 678,102 of them being international residents.

The first reason for selecting the case of 'OLNPP' as the subject of analysis for collaborative governance is because it clearly delineates Korean societies split sentiments towards the use of nuclear energy.

It is undeniable to say that Korea's economic growth wasn't achieved in a short period. Further, Korea's economic development was heavily dependent on the central government's initiated 'Hard Energy System,' a method of development based on fossil fuels and nuclear energy. However, after a sequence of global incidents, such as the increasing seriousness of climate change issues and global disasters like the one at Fukushima, has compelled the energy paradigm in Korea to change. Moreover, local conflicts in Mi-Ryang over the electric transmission tower further pushed for change. Seoul's Local Energy Plan was given the name 'One Less Nuclear Power Plant' as a display of the local hostility towards nuclear energy.

The second reason for the selection is Seoul's ability to represent (or mentor) other local and regional governments. As of April 2017, Korea is comprised of 17 metropolitan municipalities with basic local governments, whom work under the influence of the metropolitan municipality. Each municipal government complies to the Energy Act requirements under Article 7 to establish local energy plans every five-years, but there is dispute over the differences and gaps between the energy plans of each regional and primary district'. Seoul's 'OLNPP' acts as a policy worth imitating, which is a good example for regional energy policies to learn from. While receiving relatively favorable remarks, Korea's energy policy direction successfully demonstrates the necessary contemplation needed towards building for the future. Korea's current regional energy policy also differentiates any previous path taken during the early courses of energy policy, as initiated by the central government.

This research analyzes both phases of the OLNPP. The first phase was conducted between June 2012 - June 2014, (which is the same timeframe as when Park Won-Soon completed his first year in office as Seoul Mayor) and OLNPP-2: June 2014 - April 2017 (which corresponds with the re-election period of Park Won-Soon). The OLNPP-2 is the second phase of the plan.

2) Case Record

Seoul's 'One Less Nuclear' initiative is a regional energy policy. The initiative was made in response to the growing concern over climate change and to overcome Korea's energy crisis. After the Fukushima disaster that occurred in Japan on March 11, 2011, Japan's regional neighbor, Korea, started to lose trust in nuclear as a reliable, long-term solution, after

associating its potential dangers. Germany also announced the reduction/shutdown of their domestic nuclear power plants. Other countries are contemplating making this change.

Another important incident was the rotating black-out that hit Seoul in 2011. Seoul on its own consumed 10.3% (46,903 Gwh) of the total national energy output (455,070 Gwh), while producing a meager 2.95% (1,384 Gwh) of its total consumption (Seoul, 2013 p.6). Its electric self-sufficiency rate is only 2.8% (OLNPP-2, 2014), which is very minimal compared to its rate of consumption. Even though Seoul has little or no power producing independence, its electrical usage rates are highest in the country, with its rate of power consumption ever increasing. Consequently, on September 15 2011, a large-scale blackout occurred in several cities across the country, Seoul included, causing discomfort to many citizens. Thus, proper countermeasures were required to deal with Korea's energy crisis. Seoul then raised concerns in regards to electric independence, working towards strengthening energy management and increasing the production of renewable energy. These seem to be emerging priorities towards energy policy (OLNPP-2, 2014).

In 2011, Oh Se-Hoon resigned as Seoul Mayor after losing out on the Seoul Free Lunch Referendum. Park Won-Soon, who was a Seoul Mayor Candidate by-election, presented a policy commitment to decrease energy consumption and promote the use of renewables. When Park Won-Soon was elected as mayor in November 2011, it created an opportunity for him to pursue his energy commitment (policy), as promised. During the elections, there was an incident that occurred in the district of No-won, where leaked radioactive material exceeded standard levels. These accidents happen frequently; however, since this occurred right after the Fukushima disaster, it only helped amplify antipathy towards nuclear energy in the country, especially by those affected by such events.

When Park Won-Soon was elected as mayor, Seoul's regional energy policy had an earnest kicked-off. Sometime between January-February 2012, an advisory group consisting of experts was formed and a total of 15 expert advisory groups was set up to establish the city's energy policies. On February 2012, the first workshop for citizens was held; in March, a nuclear power plant reduction conference was held; and in April, the second civil conference was held. Seoul has pushed hard to establish energy policies that meet the demands of the locals, by actively collecting citizens' opinions. Because of this feedback, there was a need for the governance system to implement policies that help strengthen energy administrative

organizations within the climate environment division. There was also a necessity for a governance system that can cooperate with the private sector.

As a result of this policy process, the ‘OLNPP’ was announced in Seoul. The goal of the first ‘OLNPP’ was to provide 2 million TOE, a level of production that is equivalent to the production volume of one nuclear power plant. This production will provide Seoul with energy via renewables, energy conservation and energy efficiency.

After announcing the measures of the ‘OLNPP,’ Seoul began to rectify the Seoul Energy Regulation Act to strengthen civil cooperation within the governance structure. The amendment is intended to reform the Energy Regulation Act to systematically operate the citizens' committee towards reducing the number of nuclear power plants. Thus, by implementing Seoul’s ‘OLNPP’ and 2 million TOE of energy production via renewables, this direction (in 2014) was expected. The follow-up measures for the reduction of nuclear power plants started to be discussed as well.

Another large-scale debate on the reduction of ‘OLNPP’ was held in March and June, 2014. Park Won-Soon succeeded in being re-elected as Seoul mayor and thus, the OLNPP could be consistently passed down, establishing a firmer foundation. As stated, the first phase of the OLNPP was to achieve the 2 million TOE production goal; the second phase began upon completion of the first. Based on the success of the first plan, Seoul will formulate an ordinance to establish the Seoul Energy Corporation. The Seoul Metropolitan Government will positively carry out the second plan that will be launched in Feb. 2017. The Seoul Energy Corporation will seek to expand the renewable energy business; they will also transfer energy authority from the central government to the local government. Also, by sharing the local energy policy model via the Seoul Energy Corporation and other local governments, we can expect the local government(s) to play a leading role in the development of energy policy at the local level.

[Table 3] Case Record

Date	Contents	Period
March 2011	Fukushima Nuclear Power Plant Disaster, Japan.	Mayor Oh Se-Hoon is re-elected into office
September 2011	Large-scale blackout in Korea, including Seoul.	
October 2011	Park Won-Soon presents his energy policy promise	

	during Seoul's mayor election: Reduce energy consumption and increase renewable energy.	
November 2011	Park Won-Soon was elected as Mayor of Seoul.	Park Won-Soon in as mayor, 1st term
November 2011	Radiation asphalt incident in No-won District, Seoul.	
January - February 2012	Composition and Operation of Expert Advisory Team: 15 times total.	
February 2012	First citizen workshop held.	
March 2012	Reduction of 'OLNPP' promotion report: Comprehensive measure (plan) and national action plan.	
April 2012	Hosted the 2nd Citizens' Highland Conference.	
April 2012	Public-Private Partnership Governance: 'OLNPP', Organization of Citizens' Committee and Executive Committee, and Strengthening of the Energy Administration in Climate Environment HQ (Reduction of 'One Nuclear Power Plant' general team, Green Energy Department, establishment of Civic Energy Cooperation).	
April 2012	Announce comprehensive measures towards reducing 'One Nuclear Power Plant.'	
July 2012	Amendment for Seoul Energy-Saving Ordinance: provide institutional basis to reduce 'One Nuclear Power Plant.'	
January 2014	Began discussing follow-up plans for the 1st phase of 'Reduction of One Nuclear Power Plant.'	
February 2014	Began collecting public insight on naming the 2nd phase of 'Reduction of One Nuclear Power Plant.'	
March 2014	Conducted recognition survey's regarding Nuclear Power Reduction (Awareness, willingness to participate, citizens' response and evaluation).	
March 2014	Sunshine imagination feast for 10 million citizens on energy self-reliance, Seoul: Held a debate	
June 2014	Park Won-Soon re-elected as Seoul mayor.	
August 2014	Achieved more than 2 million TOE energy savings.	Park Won-soon in as mayor, 2nd term
August 2014	'Reduction of one nuclear power plant,' 1st phase completed.	

August 2014	'Reduction of one nuclear power plant,' plan for 2nd phase established.	
July 2015	Prepared ordinances towards establishing the 'Seoul Energy Corporation'.	
January 2016	Established Seoul Energy Corporation.	
February 2017	Launched Seoul Energy Corporation.	

Source : Seoul Metropolitan Government, 2012, 2013, 2017

3) Policy Content

In the case of OLNPP, it introduced the foundation that helped establish the current energy field. As iterated, the most important policy goal was to reduce energy consumption and to produce 2 million TOE via renewables. To accomplish this, renewable energy production and energy conservation were conducted strategically. These strategies focused on raising funds to promote projects in the energy plan, such as encouraging investment in new and upcoming renewable energy infrastructure.

In the case of OLNPP-2, there has been an increase in the number of detailed policies. Two of these policies are in strengthening institutional support towards alleviating energy poverty and increasing Seoul's self-reliance with energy. In terms of energy self-reliance, it focuses more on establishing an energy distribution-supply system and to further realize practical energy governance; the Seoul Energy Corporation was established and is involved with strengthening its cooperation with other local governments.

When considering Seoul's regional policy, there are several important features that need attention. The first is 'policy formulation,' which fully reflects the city's local characteristics even when its policy direction is contrary to that of the central government. With Seoul being both Korea's capital city and a metropolis, it is not easy to overcome the natural environment, its high population density and the city's economic constraint all-the-while trying to increase Seoul's energy independence. However, in terms of production methods, it is possible to save energy by introducing the expansion of several small-scale photovoltaic power generation panels and by strengthening management of consumption (rather than production), thereby increasing energy reliance. This can be a more realistic and pragmatic policy for Seoul. In addition to this, the central government abolished the Feed-In-Tariff (FIT) system and

changed renewable energy measures to Renewable Portfolio Standards. Seoul then created a local-based FIT to enforce the city's newly-made, the unique energy policy.

Secondly is to strengthen governance systems. Most of Korea's regional energy plans are not embedded in governance, and lack the necessary cooperative and participatory measures. However, the biggest advantage is the fact that most of the local energy plans initiated by the central government help increase local experts' accessibility to practical participation in the policy-forming process. Considering this advantage, private partnership and local-based government systems in Seoul can be utilized as a governance model, helping establish energy plans of other local government, which is more characteristic among other cities in Korea.

Third is the consideration of energy poverty. While it was not considered in OLNPP, it is being dealt with more importantly in OLNPP-2. The central government has intensified policies for the energy poor peoples', by providing coal briquette coupons, supporting energy tariffs for low-income brackets and practical welfare benefits to be offered by local governments (which is more appropriate to energy poverty regions). Thus, this consideration can be appreciated when energy welfare, as selected by local governments, become important policy assignments.

2. Collaborative Governance in OLNPP & OLNPP-2

1) OLNPP (2012.6-2014.6)

(1) Starting conditions

The important policy behavior in the early stages of planning was between Seoul and its citizens. When comparing power, resources, and knowledge against one another, levels seem relatively unbalanced. The Fukushima nuclear power plant disaster, and Seoul's large-scale cyclical power outage caused its citizens to gain more distrust towards nuclear energy. Furthermore, there has been a growing distrust towards public representation and power, which is pertaining to the central and local governments, and public institutions. The process of forming energy policy in Korea is also a closed system. It can be seen through the deepening imbalance in structural aspects, such as in the power of information, the power of ownership over information, and the power, resources and knowledge available among

citizens. To resolve this problem, Seoul tried to mitigate the imbalance of knowledge by holding workshop for citizens' (February 2012) and citizen debates (April 2012). The incentive for early participants was to instill fear and anxiety towards the use of nuclear energy. To illustrate, the asphalt accident in No-won district created a sudden, wide awareness that local energy policy should not be totally centralized and assigned by the state agency, but should have public insight as well.

(2) Institutional Design & Leadership

Although the revision of the ordinance (2012) was implemented to promote the 'Reduction of One Nuclear Power Plant' during the first project period, the overall system design wasn't efficient. On the terms of the implementing agency that enforces policy, the lack of an integrated enforcement structure (OLNPP-2, 2014: 24) led to this inefficiency, as was seen when many ministries started implementing similar projects. In the case of Photo-Voltaic (PV) projects, a specific project under the 'OLNPP', efficiency in installation was sluggish due to unprofitability of the PV power generation business. It was also revealed that institutional limitations were shown due to the aspect constraints of urban planning. This, in relation to the installation of Photo-Voltaic facilities needs to be overcome in order to succeed beyond the mentioned limitations.

It was Park Won-Soon's leadership that enabled him to exert the required political influence he needed to achieve his policy goals successfully (Taehwa Lee et al., 2014). Because renewable energy policy is determined by the will and the leadership of political leaders, leadership differences are one of the most important factors in implementation (Choi Geunhee, 2016). Park Won-Soon introduced the 'Energy Policy Pledge' as his main political strategy, while proposing energy policy as his main policy area, making his leadership the biggest difference over the city's former Mayor, Oh Se-Hoon. His reputation as a politician and his leadership of the Seoul Metropolitan Government has led to the successful achievement of the established policy goal, securing 2 million TOE production all within a span of three years.

(3) Collaborative Process

A shared understanding among the policy actors are said to be found in the collaborative process. A collaborative process is a shared goal between the city and its citizens. These goals

seek a policy direction that reduces dependence on nuclear power plants and raises energy self-reliance with renewables. Looking at Park Won-Soon's philosophy towards municipal administration, he carried out a model of governance that further enabled people's participation and one that helped implement partnerships with citizens, while administering a person-centered life that covers welfare agendas (Lee Kangjun, 2015); furthermore, enabling direct communication by emphasizing face-to-face governance via field offices, implementation of a citizen jury and ensuring that an ever-present governance policy are important factors as well. This collaborative process combines citizen committees with support organizations (Jeon Hweo-Gwan, 2015: 75). During the first agenda, the collaborative process was limited because of its weak circulation structure (OLNPP-2, 2015), as seen by the participation of micro-units, such as autonomous regions and village communities. Even though face-to-face communications were held by holding the Citizen Workshop (February, 2012) and the citizens' debate (April, 2012), they were unable to attend. However, there is mutual trust regarding its direction.

2) OLNPP-2 (2014.6-2017.4)

(1) Starting conditions

OLNPP-2 has shown a considerable degree of balance from its initial policy-making stage of OLNPP, especially with regards to civil society and the city's knowledge-base and resources. To improve business with OLNPP-2, citizen' opinions were gathered from online and offline surveys and tried to further induce balanced participation between the public and private sectors, such as by aggregating citizens' consent in the naming of OLNPP's 2nd phase. By holding a social fiction debate for the 2nd phase of the OLNPP in March, 2014, it aggregated about 400 participated citizens' opinion as well.

(2) Institutional Design & Leadership

For 'OLNPP-2', the institutional basis is strengthened and more stabilize than that of the 'OLNPP', especially from the perspective of governance and legal systems. Discussion about the 'OLNPP-2' projects have been carried out mainly by the executive committee of 'One Less Power Plant.' From the executive committee's overall meeting, common goals, values, and vision for the second stage of 'One Less Power Plant' were discussed. To establish

efficient plans, they discussed measures by revising the energy production division, efficiency division, industry and job division, and community and welfare division. All divisions were discussed to institutionalize the next promotion plan. Thus, by holding a forum for policy debate in the energy industry, they could collect opinions from both experts and citizens cohesively.

Legal basis, in terms of Seoul's energy policy, was also stabilized and strengthened, along with the rectification of Seoul's energy regulation. It prepared the way to establish the Seoul Energy Corporation, which enacted Seoul's new energy welfare regulation, further strengthening the institutional aspect of energy policy's qualitative development.

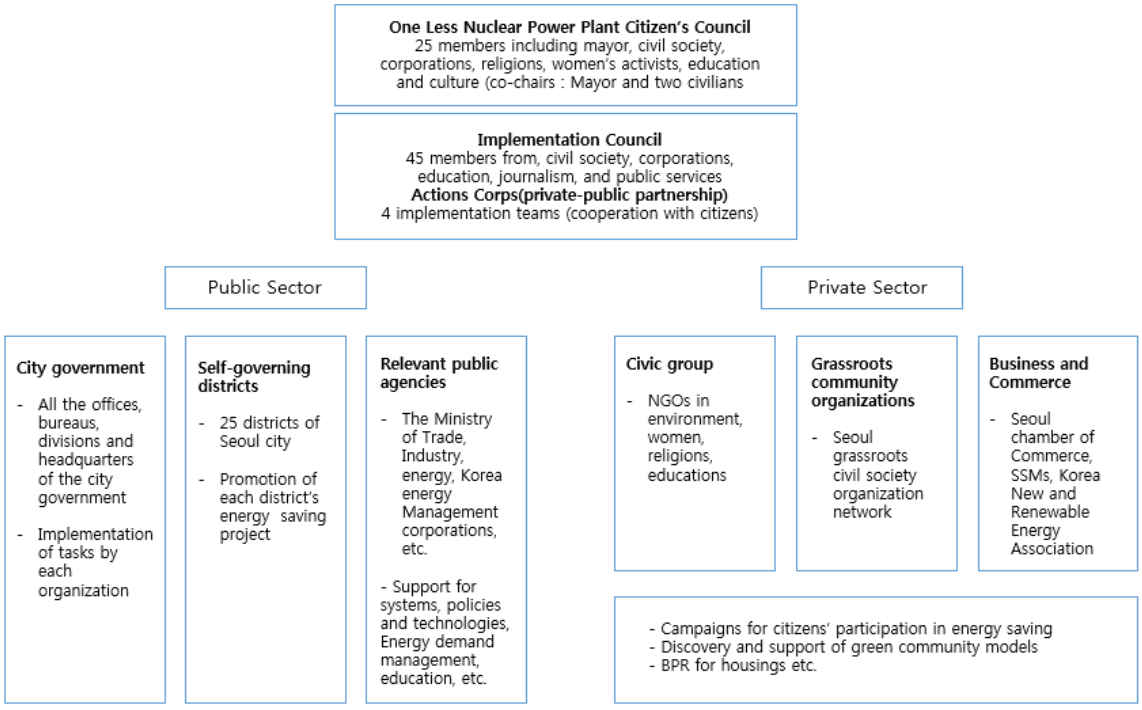
In the case of OLNPP-2, the leadership of Park Won-Soon still has a considerable amount of influence. For OLNPP, Park exercised absolute leadership in establishing policy, and the reason why OLNPP-2 could be successfully passed down was because of his influence and his short-term policy success. This was a quantitative achievement, but more importantly, Park's re-election and the continuous succession of Seoul's energy policy presents more future potential.

(3) Collaborative Process

The collaborative governance system for OLNPP-2 was strengthened with a face-to-face communication process. Firstly, it actively ensured opportunity for citizens to participate in selecting the initial policy agenda, aiming to use Seoul citizens as a policy consent form (February 2014). To evaluate the intermediate outcome, it is important to raise awareness towards reducing the number of nuclear power plants through survey recognition (March 2014). To successfully carry out the project, the willingness of citizens to participate in the energy policy process, and the response and evaluation of citizens to reduce one nuclear power plant was encouraged. In fact, 71% of Seoul residents answered that they were aware of this reduction, with 59% showing consent (OLNPP2, 2015). With access to face-to-face communication, a debate on the "Sunshine imagination feast was held for 10 million citizens in Seoul for energy self-reliance," and through practical communication and exchange of opinions, consensus on the direction of Seoul's energy policy was easily established, contributing to building trust.

Specifically, the OLNPP aims at the reduction of 'One Nuclear Power Plant.' The amendment of the Seoul Energy Regulations (April 2012) established the basis for this installation and operation. It is seen that the role of the citizen' committee did play a pivotal role in the collaborative governance process. The mentioned citizen committee, which is comprised of 25 people includes the mayor, civil groups, religious groups, feminine groups, educational group, etc. and houses co-chairs that consist of two public and two private sector groups, so that the public and private sector groups can voice their opinions equally (See figure 3).

[Figure 3] One Less Nuclear Power Plant Governance Structure



Source: Seoul Metropolitan Government, 2017

3. Policy Evaluation: Thinking of Reflexivity

Although the concept can be rather abstract, in order to include reflexivity as an important element in the governance model, concrete discussions need to be carried out to properly evaluate it. There have not been many cases where reflexivity was applied as an element of policy evaluation, but it is necessary for academia, academic discussion and related researches to be applied here to better comprehend Korean society and its administrative cultures. Thus, based on questions presented by Moon & Kwon (2008), I would like to research whether the

OLNPP is considered reflexive, under the governance model.

According to Moon & Kwon (2008), there are three aspects to consider when discussing reflexivity: need, motivation and governance. Firstly, to evaluate the policy needs of OLNPP and OLNPP-2, based on domestic and international circumstances, it can be evaluated as a demand-based policy. First, when recognizing the seriousness of the global climate change problem, the most important task is to transform the use of energy into renewable and to limit or eliminate GHG emissions. In Korea, where they are heavily dependent on nuclear power, the Fukushima nuclear accident and the detection of radioactive materials in Seoul played a pivotal role in changing Seoul's citizens' towards changing the nation's energy demands.

The OLNPP is the policy that concretely reflected and expressed citizens' recognition and demands. In the case of OLNPP, there was a lack of consideration of the question of whether there is concern for marginalized groups in the policy motive; while on the other hand, the OLNPP-2 is seen to show the policy effort attempting to solve the energy poverty problem. To raise self-awareness, Seoul citizens actively participate in the policy debate and help establish the governance structure of the executive committee, which is built and based on the evaluations of their participation, suggesting a desirable local governance model. Overall, the evaluation of reflexivity based on the three factors of need, motivation, and governance can be more positively evaluated during the OLNPP-2 implementation, but not under the OLNPP.

Ⅳ. Discussion

We analyzed OLNPP and OLNPP-2 by using four different elements to examine the standard of collaborative governance: 1) starting conditions, 2) institutional design, 3) leadership and collaborative process and 4) reflexivity in the Korean context. For OLNPP, there was an imbalance; there was imbalance in information and power, civil imbalance and imbalance in the public sector with regards to starting conditions. Accidents have also led to more severe distrust toward public power. Although the institutional basis for the initial implementation of ONLPP was insufficient, Park Won-Soon's strong leadership sets a firm policy direction that was contrary to the policy direction made by the central government, ensuring secure enforcement. At that time, Lee Myung-Bak(the former president) and his administration's energy policy carried out plans to increase reliance on nuclear energy. In terms of the collaborative process, there was agreement on face-to-face communication and a common

goal of enhancing Seoul's energy self-reliance, but citizens' participation in the policy formation was rather limited.

OLNPP-2, contrary to OLNPP launched with more balance. Information and power were balanced between the public and private sectors, while awareness of the OLNPP policy rose throughout the country. Even Seoul energy regulations were revised in accordance with the OLNPP, and the institutional and legal basis for enhancing enforcement was stabilized after implementation mechanisms improved following a process of 'trial and error' during the ONLPP implementation period. Park Won-Soon's leadership as Mayor also attributed to the success of 'OLNPP' projects. Mayor Park's leadership positively affected the formation of the first policy, while his leadership during OLNPP-2 influenced the succession of his energy policy into one that is sustainable. During the collaborative process, face-to-face communication continued, and a system has been established to secure 'participation' by many and by building trust. This became a sustainable governance system composed of public and private actors.

Then, "Was the policy, 'One Less Nuclear Power Plant' created based on collaborative governance and an implemented, reflexive policy?" When considering OLNPP as the target of analysis, there were deficiencies; when OLNPP-2 is analyzed, there are many deficiencies here as well. However, when OLNPP1 and OLNPP2 are both compared, they are reflexive. The necessity of policy from the first sign of antipathy toward nuclear energy also resulted in a willingness for policy to address the issues of energy poverty; trial and error as derived from OLNPP1 and sustainable cooperative governance as pioneered in ONLPP2, together, acted as an independent energy policy under the local government. This gives the OLNPP a comprehensive evaluation on being a 'reflective' policy. It meets the policy evaluation criteria that stimulates both rationality and emotion, which are different from the evaluation factors like productivity and democracy, which are elements of policy evaluation.

[Table 4] Summary of Case Analysis

Criteria		OLNPP	ONLPP2
Collaborative Governance	Starting Conditions	Information and Power Inequality / Distrust of Public	Balance of information and power / Rising Policy Awareness

		Power	
	Institutional Design	Inadequate Institutional Basis	Institutional and Legal Stability
	Leadership	Park Won-Soon's strong leadership, Challenging the Central Government	Park Won-Soon's strong leadership, Ensuring Policy Succession and Policy Sustainability
	Collaborative Process	Face-to-face communication, Participation is limited despite agreement on common goals	Increase participation through face-to-face communication, trust building, and governance systems
Korean Context	Reflexivity	Stimulation of both emotion and rationality OLNPP 2 shows more reflexive components.	

Beside the contents, the applied framework should be evaluated independently. In recent case studies, there have been cases of analyzing policies using the criteria set out in Ansell & Gash's 'collaborative governance'. But further research is needed to determine whether Seoul's energy policy was the best path to collaborative governance and to determine whether if it was an appropriate approach to take to governance.

The conceptual ambiguity towards reflexivity is the biggest limitation of this study. In addition to the conceptual dimension, reflexivity as a measure of governance requires an appropriate level of attention and evaluation if they are to be put into the Korean context. When done, these evaluation criteria's can be applied to actual policy cases, by which these case studies with reflexivity can be accounted for. Hence, the introduction of reflexivity in this analysis is meaningful, in that it tried to find a standard of governance that can be applied in the Korean context, and further efforts to supplement limitations and needs of the future.

Ⅴ. Conclusion

So far, this paper has analyzed Seoul city's regional energy policy with the concepts of collaborative governance and the reflexivity. The "OLNPP' policy that was introduced, was significant, in that Seoul's local government could propose a quite successful, regional energy governance model via improving the current systems and projects. Currently, Korea is

affected by air pollution caused by thermal power plant operations; furthermore, there have been an increase of cancer-forming incidences for people living around transmission towers that connect nuclear and waste disposal facilities, which are all byproducts of nuclear energy. Thus, as conflicts and other disasters continue to occur, the use of nuclear has been an on-going concern. However, in the case of ONLPP, local energy governance provides the appropriate energy policy for the region, thereby enabling us to search for solutions to structural problems of energy supply and demand and problems of energy justice.

Consequently, local communities have become important and they have established energy policies that are appropriate for the region, contributing to decentralization. Korea's energy policy has been recognized as the responsibility of the central government. In fact, because the role of the local community and the power of local governments are insignificant, and due to the financial difficulties of local governments, many have relied on central government subsidies to implement energy projects. The Energy Act[6] in Korea requires each local government to re-establish a local energy plan every five years, but the quality of the regional energy plan differs from region to region and lacks correspondence with the national energy plan (Art. 7). Considering this point, the local energy plan has not been effective.

In the case of Seoul, the city has the necessary capacity including the leadership of Mayor and infrastructure available that allowed them to implement 'OLNPP.' However, even for local governments with limited policy competencies, it could be useful to transfer and utilize Seoul's cooperative, local governance model, adjusting them in accordance with the local situation. These efforts gradually expand policy infrastructure and policy capacity for those local regions. The 'One Less Nuclear Power Plant' in Seoul showed opportunity and potential towards the possible transformation of the city's energy system. 'OLNPP' needs to develop into a more cooperative and more reflexive policy, one that complements problems down the road as revealed in the implementation process. In fact, Seoul type-FIT and mini solar power supply projects are expanding to local energy policies and local governments beyond Seoul,

[6] Article 7 (Formulation of Local plans) (1) Each Special Metropolitan City Mayor, Metropolitan City Mayor, Do Governor or the Governor of a Special Self-Governing Province (hereinafter referred to as "Mayor/Do Governor") shall, for the efficient achievement of the objectives of the basic energy plan under Article 41 of the Framework Act on Low Carbon, Green Growth (hereinafter referred to as "basic energy plan") and development of the regional economy, formulate and implement a local energy plan (hereinafter referred to as "local plan") with a plan period of not less than five years every five years, taking into account the regional characteristics of the area under his/her jurisdiction (Energy Act n.14079)

and it is necessary to not only develop individual projects but to learn the regional energy governance structure.

The road to ‘Soft’ energy will take time. Problems such as regional energy inequality, disparity between production and consumption, and securing effective regional energy policies are the biggest obstacles to the establishment of regional energy policies led by local governments. The case of ‘One Less Nuclear Power Plant’ showed opportunity and potential for energy transition as a collaborative governance model. It is true that ‘OLNPP’ still has a way to go; it is criticized for being TOO difficult for other local governments to apply, with their limited policy competencies and the electricity structure problem; KEPCO, Korea Electric Power Company monopolizes the whole electric transmission and distribution system in the country. However, by learning the know-how and through the experiences of trial-and-error, making new energy policies in the existing ‘hard’ energy system is a process. In cooperative regional governance, the system of development and realization is a continuous policy succession in itself and can be seen as a step forward towards establishing a sustainable, reflexive local energy governance system that is compatible with the Korean context.

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