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# Energy Governance in South Korea: Long-Term National Energy Master Plans since 1997

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# **Energy Governance in South Korea: Long-Term National Energy Master Plans since 1997**

## **Introduction**

Energy, as backbone of economic growth and public welfare, as well as contributor to enhancing or mitigating climate change, is one of the most pressing policy issues for many countries. Overall, national-level energy sector reforms in many countries have been modest without a long-term low-carbon policy framework or coherent set of policies (Gunningham, 2012).

It might be due to several characteristics of energy. Energy, as a ‘polycentric’ and ‘mega-issue,’ is inextricably interlinked, vertically and horizontally, with many other sectors and their actors, such as industry, trade, national security, transportation, environment, urban development, and finance (Lesage, Graaf, & Westphal, 2010; Ostrom, 2010). However, energy has been somewhat obscure area left to its own technical experts operating mostly within the conventional realm of energy security and supply (Gunningham, 2012). Governments tend to protect their citizens against energy price fluctuations in fossil fuels or keep energy prices low to earn domestic political support (Dansie, Lanteigne, & Overland, 2010; Goldthau & Sovacool, 2012). Another dimension of energy lies in its path dependency and inertia. Human life and socio-economic activity is so deeply embedded in and dependent on energy that the mutual feedback loop between individual choices and the energy system is reinforced (Goldthau & Sovacool, 2012). Power system, for example, show strong path dependencies of “carbon lock-in” due to the large investments perpetuating a mostly fossil fuel based system of electricity production and consumption (Goldthau & Sovacool, 2012). And alternative options, despite higher performance or lower costs, remain ‘locked-out’ due to vested interests (Markusson & Haszeldine, 2009). Thus, institutional legacies protect status quo (Goldthau & Sovacool, 2012). These challenging characteristics of energy make energy policymaking fragmented and inconsistent with very little coordination between most of relevant actors and make necessary energy reform at most modest.

Thus, a daunting but important question is which forms of energy governance (i.e., how to make energy policies with whom) will be more effective in formulating better sustainable energy policies, given expert-oriented and fragmented policy-making and the path dependence and inertia of the prevalent energy systems and their infrastructure, rooted in vested interests of socio-economic entities. Could diverse stakeholders collaborate effectively for sustainable energy policy-making, or necessary energy sector reform?

The next chapter discusses briefly two models that explain policy changes through collaboration or conflict: consensus-based regulatory negotiation, and conflict expansion. Then, this paper intends to analyze how governance for national energy policymaking in South Korea (hereafter Korea) has been evolved and to identify which model explains Korean energy governance better. Finally, this paper evaluates current energy governance in Korea and suggests how it should evolve again.

## **Consensus-based regulatory negotiation, and conflict expansion**

For very complex regulatory decisions with multi-parties, multi-issues, consensus-based regulatory negotiation has been suggested as a way for sustainable decision-making by many scholars and practitioners (Freemant & Langbein, 2000; Harter, 2000; Susskind & McMahon, 1985; Wondolleck & Yaffee, 2000). They argue that if some conditions are met, such as inclusion of a full range of stakeholders, fair process management, and some procedural safeguards mandated by administrative laws, then stakeholders including regulatory agencies can negotiate and generate a win-win sustainable agreement.

However, some critics contend that there are potential pitfalls in consensus-based regulatory negotiation, such as erosion of state authority, insufficient representation of the public interest, administrative incompetence, regulatory imprecision, increased time and expense, the lowest-common denominator problem, generation of new sources of conflict, or cooptation by powerful conveners due to political inequality (Amy, 1987; Coglianese, 2001; Rose-Ackerman, 1994; Rossi, 1997; Werhan, 1996).

Other theorists and commentators on policy change models argue that policy changes or reforms are outcomes of conflict rather than collaboration. Cobb and Elder (1983) suggest that systems of limited participation where powerful economic interests are able to insulate from the influence of large-scale democratic forces through the creation of so-called 'iron-triangle' are highly resistant to change. In many countries, such systems of limited participation, such as tobacco, pesticides, air and water pollution, airlines, trucking, telecommunications, and nuclear power, have been dramatically altered or destroyed (Bosso, 1987; Campbell, 1988; Derthick & Quirk, 1985; Fritschler, 1989; Jones, 1975). Baumgartner and Jones (1991) explain how such systems could be altered by describing how political actors lobby for a change in the roster of participants involved by seeking out the most favorable venue for the consideration of that issue. When the venue for public policy making changes, those who previously dominated the policy process may find themselves in the minority, and erstwhile losers may be transformed into winners (Baumgartner & Jones, 1991).

Creating a new and favorable, institutional venue can be viewed as a political process. Schattschneider (1960)'s concept of conflict expansion explains that losers in a policy debate have a motive to change the roster of participants by appealing to those not currently involved. If they can appeal to the right groups, they may be able to change their losing position into a winning one, as more people become involved in the debate on their side. This model of conflict expansion may explain well how difficult policy changes may happen through very political processes in reality.

The first model of multi-party consensus building through regulatory negotiation may be better and ideal model for policy change or necessary reform as long as all the important stakeholders are motivated to participate, find the best solutions, and build trust. However, this kind of consensus building may tend to bring out more adaptive, gradual policy change rather than abrupt, radical policy changes.

The second model of conflict expansion for policy change may describe the reality of policy change better. But, policy reform or changes in this model are more likely to produce winners or losers through political conflict and more susceptible to political changes.

## **Evolution of Korean energy governance**

### ***Closed network of strong central government and government experts (1961-1992<sup>1</sup>)***

Korea had achieved rapid economic growth under strong military government regimes since 1961 until 1987. Despite no oil reserves in Korea importing nearly all of its oil needs, the government had provided inexpensive energy stably and efficiently by building centrally coordinated institutions, such as powerful laws facilitating energy generation and transportation, regulatory agencies, government think-tank, and public corporations, in a relatively short time. Energy mix in Korea had been diversified to include liquefied natural gas (LNG) and nuclear energy (Kim, 2007).

Key feature of energy governance during these years is a closed system where central ministries of energy, commerce, and trade dominated decision-making, working closely with experts from government think tank, such as Korea Energy Economics Institute (KEEI). The strong government could control energy price strategically and politically to supply cheap oils and electricity for industries, transportation and households. While there were consultation process, such as public hearings and coordination with other ministries and industries, citizen participation did not exist in national energy policymaking. Citizens and civil societies, such as environmental non-government organizations, had mostly focused on environmental issues from siting controversies around energy facilities, such as power plants and nuclear waste management facilities since late 1980s. And since early 1990s civil societies became interested in energy issues with the conjunctions of climate change and had accumulated expertise on energy issues (Kim, 2007).

### **Governance for the first national energy master plan (1997 - 2006)**

#### ***Still closed system but reform within***

The government in the mid-1990s identified several problems of Korean energy system that had mainly focused on supply side of energy and expansion of quantity rather than quality of energy through excessive governmental regulation and intervention. Low energy price maintained through government control caused had encouraged excessive energy consumption, decreased competitiveness of energy sector, and discouraged necessary investment in the energy sector. Despite diversification of energy sources, the dependence on imported oil out of total primary energy increased from 48.2% in 1985 to 62.5% in 1995, due to increased number of vehicles and demand from expanded industry sector, hence weakened national energy security. Energy intensity (Energy/GDP, TOE/1,000 US \$ as in 1990) of Korea in 1995 was 0.418, relatively much higher than those of other advanced countries, such as Japan (0.144), England (0.194), Germany (0.189), France (0.175), and U.S. (0.335), which indicated that energy was not being used efficiently in Korea (MTI, 1997).

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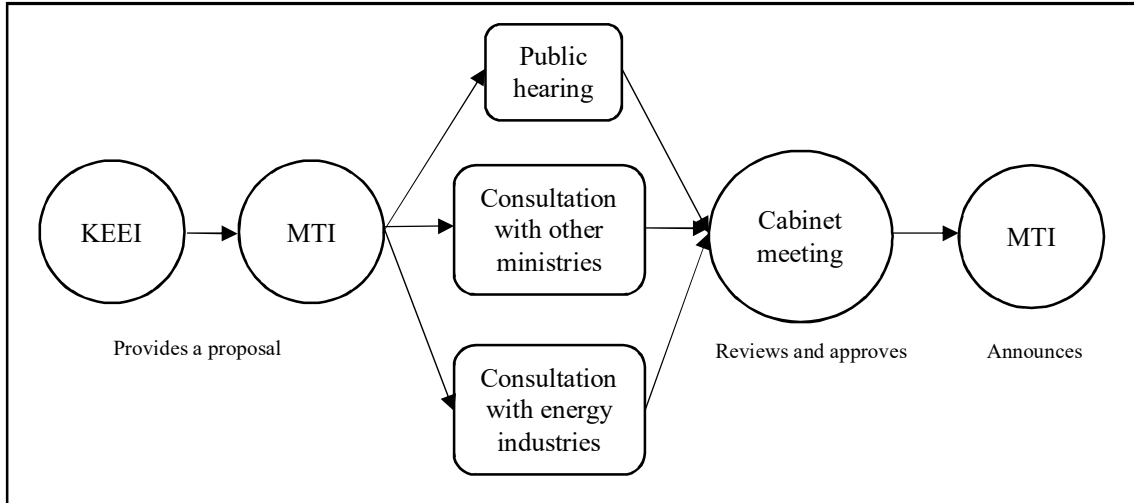
<sup>1</sup> In 1993, President Kim, Young-Sam became the first president in decades without a military background and tried to make structural reform in ways to reduce government control and introduce market-based mechanism, such as privatization of energy public corporations and introduce market-based mechanisms for energy price system.

However, policies for energy efficiency were not integrated effectively with relevant sectors, such as industry, transportation, and urban planning due to lack of regulatory system for more comprehensive, systematic, integrated long-term planning. Without fundamental or basic law for energy planning, there were many individual laws for each energy source, such as electricity, petroleum, city gas, as well as different laws for supply side and demand side respectively. Also, since 1992, when international discussion on climate change was culminated into United Nations Framework Convention for Climate Change (UNFCCC), national energy policies should be incorporated with global environmental concerns (MTI, 1997).

Thus, as an preliminary step toward a basic law for energy in Korea, the government amended the existing Rational Energy Utilization Act (REUA) in January, 1995 so that the article 4 of the REUA defined the first National Energy Master Plan (NEMP). According to the article 4, the government should establish the NEMP every five year for the next ten years. The NEMP, as the upstream energy plan, provides principles and directions for downstream energy policies by integrating and coordinating all relevant sectors systematically

The Ministry of Trade and Industry (MTI) requested the KEEI in 1996 to formulate a proposal for the first NEMP. Then, the MTI put out the proposal through public hearing, coordination with other ministries, consultation with energy industries sequentially and passed the consulted version to the cabinet meeting for final review. In 1997, the cabinet approved and the MTI announced the first NEMP for the years from 1997 to 2006.

Figure 1. Governance for the first NEMP (1997 - 2006)



**Governance for the second NEMP (2002 – 2011)**

*Crack in closed system and entrance of environmental NGOs*

During the five years since the first NEMP, Korea experienced major economic and political transformation. First, Korea was hit severely by financial crisis in 1998 and underwent structural adjustment in the corporate and financial sectors, which were required by the International Monetary Fund (IMF). And temporary economic setback

also lowered total energy demand outlook compared to that of the first NEMP. Another major change was a political one. President Kim, Dae-Jung who, had been a long-time opposition leader to authoritarian governments, was elected in December, 1997, which marked a peaceful power transfer from dominant party to another for the first time since 1961. Consolidating democracy since the end of the authoritarian era engendered the mushrooming of voluntary civic associations and all varieties of social and cultural movements (Koo, 1993). Kim Dae-Jung administration actively engaged and closely collaborated with civil society groups as partners, incorporating their opinions in the policy-making process (Fiori & Kim, 2018). For example, President Kim, Dae-Jung established a presidential advisory committee, called 'Presidential Commission on Sustainable Development (PCSD)' in September, 2000 where many leaders in major environmental NGOS in Korea were appointed as its members.

After five years from the first NEMP announced in 1997 according to the article 4 of REUA, the MTI prepared in 2001 for the second NEMP for the next ten years (2002-2011). Under this political atmosphere, governance for the second NEMP started to change slowly with participation of civil society for the first time in energy policy decision making, which cracked closed decision-making system. The MTI asked the KEEI to formulate the proposal for the second NEMP. Then, the MTI and the KEEI orchestrated extensive consultation with 150 experts and stakeholders in order to develop a report, called '2010 Energy Vision: Direction and Strategies for Energy Policy.' The participants in joint study included government officials from the MTI, experts from public corporations for energy sectors, government think tanks, energy-related private sectors, and professors (in the fields of engineering, resources, economics) from universities. During this consultation period, other ministries including the Ministry of Environment (MOE) and the Ministry of Finance (MOF) did not participate and no civil society members were not involved.

Then, the director for resource policy in the MTI had an advisory meeting with several experts for the commissioned report of 2010 Energy Vision on September 6, 2002. The Minister of Trade and Industry convened a strategic meeting for 'development of energy industry' on September 19, 2002. In that meeting, eight government officials from the MTI, eleven officials from public corporations in energy sector, four representatives from oil, gas, and other energy industries, five experts from government think tanks, and four professors from universities. All the experts in that meeting had backgrounds of electric engineering, chemical engineering, industrial engineering, resource economics, and economics. Then, the MTI finalized its proposal for the second NEMP on October 22, 2002 and circulated it to other ministries and energy industries for consultation (November 22, 2002). Until this step of decision-making process, there was no involvement of general citizens and civil society members.

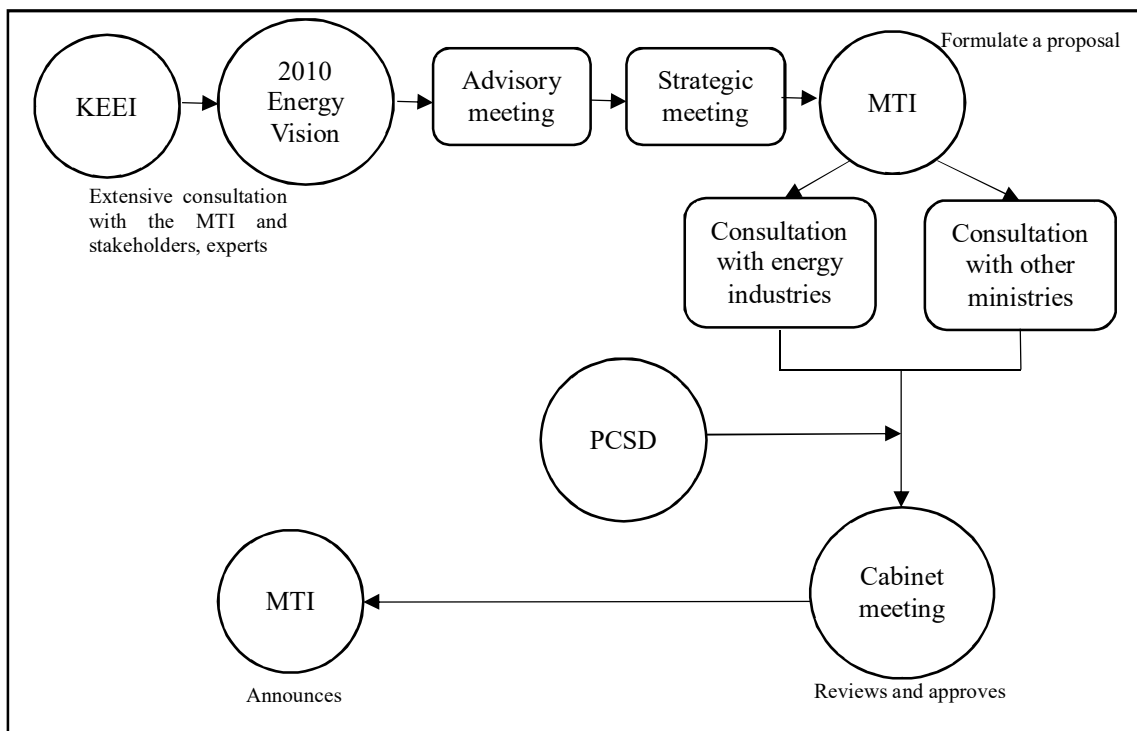
However, new venue for civil society to influence energy decision-making was created via the PCSD. The presidential decree on the PCSD was amended on June 3, 2002 in a way to strengthen its power by mandating the PCSD to review all the major public policy or long-term plans that have implications for sustainable development before those policies or plans are finalized (Dong-a Ilbo, 2001.9.20). And according to the new decrees, the MTI should give the opinions from the PCSD higher priority in its decision for the second NEMP, and the PCSD could monitor the MTI and make a report directly to the president.

The PCSD established a sub-committee for energy policy in 2000, where government

officials, energy industry, professors, and civil society members from environmental NGOs and consumer movement organizations participated. The sub-committee decided to focus on energy efficiency and energy saving as the first agenda for deliberation (November 1, 2000). The activity of energy sub-committee was not based on the MTI's NEMP but on relatively independent self-study for learning about energy issues. The seminar topics included energy price system, energy efficiency, energy technology, energy demand and supply policies, nuclear energy, and renewable energy. The energy subcommittee ended up with its own report on sustainable energy system on August 20, 2002, which was independent from the second NEMP. Although the PCSD could review and make comments on the final version of NEMP proposal, it would be very difficult to change main contents of the proposal since any member of the PCSD had not been involved in formulating the proposal itself from the beginning. It is not certain, though, how the review of the PCSD could make any impact on the final proposal of the second NEMP. On December 10, 2002, the second NEMP was finalized through the final review and approval of the cabinet meeting. It took one year and seven months from May, 2001 to December, 2002 for the second NEMP to be born and finalized as the official long-term national energy plan.

In terms of contents, the second NEMP was different from that of the first NEMP in three main aspects. First, the second NEMP emphasized market-based policies rather than government-led command-and-control policies. Second, it put more priority on demand-management policies rather than supply-centered policies. Third, it introduced the concept of sustainable energy system.

Figure 2. Governance for the second NEMP (2001. 5 ~ 2002. 12)



**Empowered civil society and new fundamental energy law**



Succeeding Kim Dae-Jung administration, Roh Moo-Hyun, a human rights lawyer who had fought all his life against authoritarianism, was elected as a president in December 2002 with enthusiastic support from relatively younger generations who wanted to create a participatory democracy. President Roh even named his administration as ‘participatory government.’ The relationships between progressive civil groups and the government were consolidated and enhanced as the government tried to make reforms in various progressive agendas. Consequently, many prominent civic group leaders followed President Roh to the Blue House and joined the administration. Their involvement was not limited to government posts. Participation in special government committees and task force teams became the norm (Fiori and Kim, 2018).

Right after the new administration started in early 2003. President Roh asked the PCSD to review current sustainable energy system in South Korea and report its suggestion to him. The PCSD where many environmental civic group leaders participated proposed at the end of 2003 to the president that 1) agenda for the energy policy should be expanded toward more upstream issues, 2) energy policies should be made based on social consensus through deliberation, and 3) public participation in energy policy making should be increased (Kim, 2007).

At the same time, environmental civic groups tried to enact a new law in order to change current energy governance into one that incorporates a new paradigm of sustainable development and empowers civil society more. The government collaborated with the civic groups and proposed a new law, called ‘the Framework Act on Energy (FAE)’ and the law was enacted in March, 2006 (Kim, 2007). The new law was intended to coordinate 28 individual laws related to energy sources and functions coherently and systematically. Also, the Energy Master Plan (EMP) should be made every five year for twenty year planning time frame.

And more importantly, the FAE enhanced energy issue into national agenda by establishing ‘the National Energy Advisory Commission (NEAC)’ where total 25 members of government officials from relevant ministries, energy experts, representatives from energy industries and civic organizations reviewed, deliberated and approved national long-term energy planning. In other words, the principal decision making agency was changed from the Ministry of Industry and Resource (MIR) to the President since the chairperson of the NEAC was the president. Among 25 members of the NEAC, more than five members should be recommended by civic groups. These changes appear to be influenced by civic groups who participated in various venues for energy policy making and believed that current energy governance should be transformed from the closed network between the government and energy industries that had focused more on energy provision and had been locked in anti-democratic and anti-environment path (Kim, 2007). In June, 2006, civic groups created a coalition group, called ‘Citizens’ Coalition for Energy (CCE),’ aimed at exerting more influence on energy policy making.

## **Governance for the 1<sup>st</sup> Energy Master Plan (EMP)<sup>2</sup> (2006. 2 ~ 2008. 8)**

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<sup>2</sup> The third national energy master plan (2008) is called as the first Energy Master Plan since the plan was established by the first foundational law on energy, the Framework Act on Energy (2006).

As the key government think tank for energy policy, the KEEI prepared a proposal for the 1st EMP since June 2006. And in November 28, 2006, the 1st NEAC was organized and convened officially for the first time. Nine government members of the NEAC included the President as the chairperson, the Prime Minister as the vice chairperson, seven ministers from the Ministry of Industry and Resources, the Ministry of Finance and Economy, the Ministry of Science and Technology, the Ministry of Foreign Affairs and Trade, the Ministry of Environment, the Ministry of Construction and Transportation and the Ministry of Strategy and Budget. Sixteen members from non-governmental institutions include eleven experts in the field of energy and five members who were recommended from civil society (Table 1).

Table 1. Sixteen non-governmental members in the first NEAC

<b>Energy experts</b>	
Kang, Joo-Myong	Professor at Seoul National University (Earth Environment System Engineering)
Kim, Sang-Hee	Chairperson of the PCSD
Kim, Tae-You	Professor at Seoul National University (Earth Environment System Engineering)
Kim, Hyun-Jin	Chief researcher at Samsung Economic Research Institute
Bang, Ki-Yeol	President of the KEEI
Lee, Soo-Ho	Chairman of the Korea Gas Company
Choi, Ik-Soo	President of the Korea Energy Technology Research Institute
Han, Joon-Ho	Chairman of the Korea Electric Power Company
Hong, Seong-An	Director of Hydrogen Fuel Project, Korea Institute of Science and Technology
Hwang, Doo-Yeol	Chairman of Korea Petroleum Company
Hwang, Joo-Ho	Professor at Kyung-Hee University (Nuclear engineering)
<b>Members recommended by civic groups</b>	
Kim, Yoon-Ja	Professor at Han-Sin University (International Economy)
Kim, Il-Joong	Joint President of Environmental Justice
Kim, Jae-Ok	President of Citizens' for Consumer Problem
Lee, Duck-Seong	Permanent commissioner of Coalition for Green Consumers
Lee, Hak-Young	General director of national association for YMCA

In the NEAC, four sub-committees were set up to address energy policies, energy technologies, resource development, conflict management respectively. All the members of the sub-committees were recruited again from outside for more specific and practical deliberation. The members of the Sub-Committee for Energy Policies (SCEP) included seven government officials from the Ministry of Industry and Resources, the Ministry of Finance and Economy, the Ministry of Science and Technology, the Ministry of Foreign Affairs and Trade, the Ministry of Environment, the Ministry of Construction and Transportation and the Ministry of Strategy and Budget, and twelve non-governmental experts (Table ).

Table 2. Non-governmental members of the Sub-Committee for Energy Policy

<b>Non-governmental participants</b>	
Bang, Ki-Yeol	President of the KEEI (Chairperson of the sub-committee for energy policy)
Park, Hee-Cheon	Professor at Inha University (Economics)
Kim, Rae-Hyun	Professor and Dean of Graduate School of Energy and Environment, Seoul National University of Technology

Kim, Kyung-Min	Professor at Han-Yang University (Political science)
Lee, Ki-Myung	Director, Citizens' Coalition for Energy
Lee, Sang-Hoon	Director, Korea Federation for Environmental Movements
Jang, Young-Jin	Director, Korea Electric Power Company
Park, Chang-Kyu	Director, Korea Atomic Energy Research Institute
Lee, In-Young	Vice chairperson, Korea Energy Agency
Park, Tae-Joo	Vice President, Korea Coal Association
Cho, Jae-Song	Director, SK Corporation
Kim, Myung-Hwan	Director, GS Caltex Corporation

In the inaugural meeting of the NEAC, the Minister of Industry and Resources announced ‘the Energy Vision 2030’ that had three key directions of energy security, energy efficiency and environmental friendliness. While the Energy Vision 2030 was not official long-term national energy master plan based on the new FAE, the Energy Vision 2030 included five visions and concrete targets related to each vision. For example, by 2030, South Korea’s reliance on foreign energy sources would be reduced from 95.9% (in 2005) to 65%. At the same time, the percentage of renewable energy in energy mix would be increased from 2.1% (in 2005) to 9% by 2030. The Minister suggested that nuclear energy could be an important option to achieve both visions of energy security and environmental protection.

For controversial issues, such as appropriate percentage of nuclear power in energy mix, and energy demand forecast, the SCEP planned to convene joint meetings with the Sub-Committee for Conflict Management (SCCM).

### ***Conflict and no consensus***

For seven months from May to November 2007, the SCEP and SCCM of the NEAC had deliberated on the proposal for the first EMP submitted by the KEEI in March 2007 in around ten meetings respectively. In those meetings, there was conflict between the KEEI who formulated the proposal and the members from environmental NGOs who raised the issue of exaggerated energy demand forecast which was assumed by the KEEI, challenged the electricity mix that favored nuclear energy and limited renewable energy, and criticized that the proposal put too much focus on electricity generation rather than energy efficiency issue in transportation and construction.

On December 17, 2007, the SCEP and the SCCM convened a joint meeting, aimed at building a consensus on controversial agendas about energy demand forecast, composition of nuclear energy and renewable energy in electricity mix, and energy efficiency policies before the NEAC would hold a public hearing for the first EMP. However, members decided that the nuclear energy mix would follow the original proposal from the KEEI and other issues would be further discussed. After the first public hearing on the proposal for the first EMP on December 21, 2007, the NEAC ended up with the same conclusion.

Since then until May, 2008, the KEEI adjusted their original proposal to change the assumption of oil price in energy demand forecast model from 57 US \$ to 100 US \$. Consequently, total primary energy demand by 2030 was reduced from 378.1 million TOE to 350.7 million TOE. But, the KEEI increased the contribution of nuclear energy as the total primary energy source up to 26~28.9% by 2030. Originally, the KEEI had expected that the percentage of nuclear energy in energy mix would peak with 17.7% in

2020 and slowly decrease afterwards. During that time, there were no meetings in the SCEP and SCCM.

### ***Political change toward less citizen participation***

In the meantime, there was a fundamental change in political sphere. In December, 2007, Lee, Myung-Bak, a former mayor of Seoul, was elected as the President, which transferred political power from progressive parties to a conservative party. Inaugurated in February 2008, the Lee Myung-Bak administration distinguished itself from the previous progressive governments by emphasizing practicality and pragmatism rather than participatory procedures. During its first few years, the close relationships between the government and civil societies were dissociated. The government reduced drastically the number of committees inside the government where civic group members had played consultative and advisory roles. (Fiori and Kim, 2018). This political atmosphere also might affect governance for energy policy making since early 2008.

### ***Deliberation vs. Efficiency***

Apart from the lack of consensus on key issues in the proposal for the first EMP between the members centered around the KEEI and government and the members from civic groups, there was also conflict about decision-making procedures. Facing the deep division inside the NEAC, the government decided abruptly to hold an open seminar on the proposal for the first EMP instead of open public hearing on June 4, 2008. In the open seminar, two parties did not budge at all from their original positions.

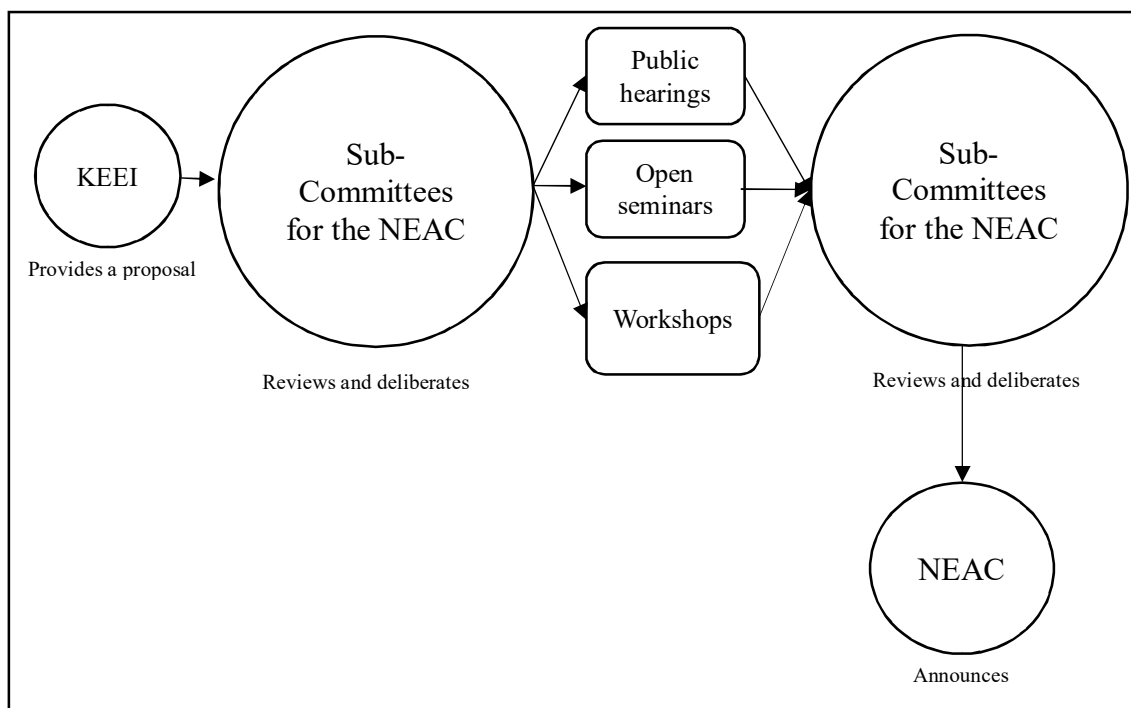
While the members of the SCEP and SSCM suggested that more deliberation should be needed to finalize the first EMP until December 2008, the Ministry of Knowledge Economy (the MKE) (new name for the Ministry of Industry and Resource) announced the plan to have workshops, seminar, public hearing within a month (July 10 ~ August 13, 2008) and finalize the first EMP through the NEAC at the end of August, 2008. During one month, the NEAC held two workshops where representatives from public corporations, government think tanks, and energy industries participated. And another two workshops were held only for civil societies. Through the first two workshops, the slightly adjusted proposal from the KEEI was endorsed by the participants. However, civic groups still criticized the proposal in their workshops. As a consequence, civic groups boycotted the second (last) public hearings for the first EMP.

### ***Final compromise***

Through all the consultation and deliberation process, the first EMP was approved by the NEAC in August, 2008. The proposal was adjusted one more time during that time to change the assumption of oil price in energy demand forecast model from 100 US \$ to 119 US \$. Consequently, total primary energy demand by 2030 was reduced from 350.7 million TOE to 342.8 million TOE. Also, the KEEI increased the contribution of renewable energy in energy mix from 8.7% to 11% by 2030. Still, however, civic groups criticized the first EMP in several aspects. They believed that energy demand forecast used for the first EMP was still exaggerated and there was no political will to increase renewable energy in energy mix necessarily enough for energy transition from nuclear

energy and fossil fuels. Above all, they criticized that the decision making procedure for the first EMP violated the fundamental principle of the FAE, that is, collaborative governance for national energy planning. They argued that their participation in the NEAC and other consultative and advisory process was perfunctory and was utilized to justify the government decision.

Figure 3. Governance for the first EMP (2006. 2 ~ 2008. 8)



### Change of energy law and governance structure in 2010

The Lee Myung-Bak administration upheld ‘low-carbon green growth’ as a new economic development paradigm for South Korea since its outset in February 2008, stressing clean energy technologies including nuclear energy as engine for economic growth. The Lee administration needed an effective governance structure to implement the ideal of low-carbon green growth. Thus, in January 2010, the Framework Act on Low-Carbon Green Growth (FALCGG) was enacted with the purpose of integrating all the related but separately regulated policy areas, such as climate change, greenhouse gas emission, renewable energy, and sustainable development into coherent legal framework. More specifically, the new Act established ‘the Presidential Committee on Green Growth (PCGG)’ that would review all the related policies, plans, and strategies for green growth, including long-term energy master plan.

As a consequence, long-term national energy planning should be conducted under the FALCGG instead of the FAE. Furthermore, the FAE was scaled back into the Energy Act (EA). The changes in the governance structure from the FAE and the EA were apparent. First, the NEAC of the FAE was degraded into the Energy Commission (EC) where the MKE, not the President became the chairperson of the EC again. Although more than five members should be recommended from energy-related civic groups, seven government

members of the EC would be high-rank government officials, not the Ministers. The main responsibility of the EC would be preliminary review of the EMP. This change of governance structure in 2010 implies that the level of decision making for energy policy was moved from the President where all the relevant Ministries and civil societies participated to the MKE that had dominated energy policy making in the past again. From the perspective of civic groups, they lost the venues where they could exert their power in decision-making processes.

**Governance for the second EMP (2013. 5 ~ 2014. 1)**

The decision-making process for the second EMP started with new administration of President Park Geun-Hye who was inaugurated in February, 2013. As President Park belonged to the same conservative political party that supported the previous the Lee administration, political atmosphere was not much changed surrounding the new government.

However, governance for the second EMP was very different from that of the first EMP. The usual process was that once the KEEI had formulated a proposal as a foundation for deliberation for EMP, then committee members discussed it to create a government proposal for public consultation. However, for the second EMP, the process was upside down. Rather than asking the KEEI to do their job, the MKE constructed five ‘Public-Private Joint Working Groups’ (hereafter, WG) where fifteen members for each WG participated to produce a recommendation report to the MKE in May, 2013 so that the government could use it as a government proposal for the second EMP (Table ). In each WG, ten members came from the government, government think tank, academics, two representatives from industries, and two from civic groups. The reason why the MKE introduced these WGs from the beginning was not still clear. However, one hypothesis is that the government might want to prevent potential conflicts about energy policies by incorporating various opinions in earlier steps to design the government proposal.

Table 3. Five public-private joint WGs (2013. 5 ~ 2013. 10)

Name	Topics
WG for coordination	Coordinating four WGs to set main directions for the second EMP and to review the energy mix
WG for energy demand	Demand forecast; target demand based on demand management effects; energy pricing policy, etc.
WG for electricity	Energy transition; dispersed generation; greenhouse gas emissions, etc.
WG for nuclear energy	Economic feasibility of nuclear energy; Scenarios of nuclear energy generation; nuclear energy policies; nuclear energy safety, etc.
WG for renewable energy	Targets for renewable energy generation; etc.

The MKE set up four months (May – August, 2013) for the WGs to produce a foundation for the government proposal for the second EMP. One of the hottest issues was policy direction for nuclear energy in energy mix. Since all the issues were interlinked in energy mix, one uncertainty in nuclear energy policies made other

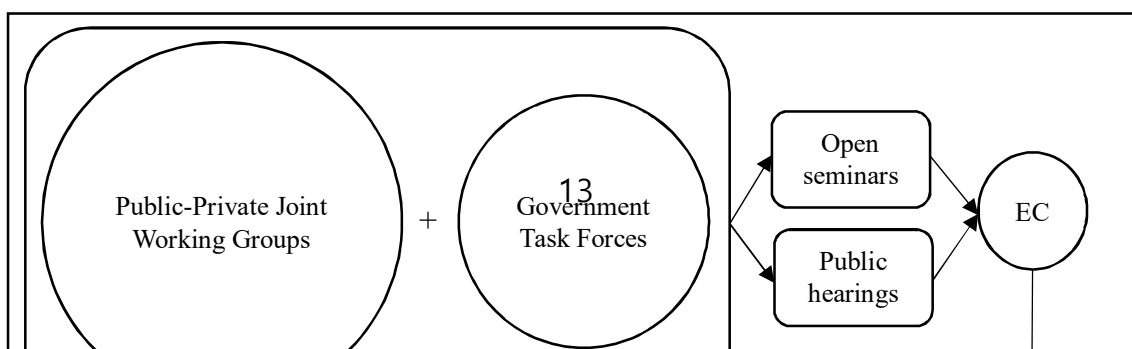
discussions futile. Also, without detailed commissioned report from the KEEI, members of the WGs had difficulty in establishing structure for deliberation from the beginning. Given the short time frame, they could not have enough time to deliberate all the important issues, such as energy security and greenhouse gas emissions. Since, in the wake of nuclear disaster in Fukushima, Japan due to earthquake in 2011, public perception of nuclear energy and power plants turned toward negative, members of WGs considered public acceptance of nuclear energy. Also, they needed to discuss whether the government should extend operational lifetime of nuclear power plants that would be terminated within twenty years or whether they government should build more nuclear power plants or not. All the important energy decisions were contingent on those controversial issues around nuclear energy.

After more than 50 meetings of WGs, the WG finally announced several recommendations for the second EMP in October, 2013. First, they recommended that the focus of energy policies should be changed from supply management to demand management. They argued that electricity price should be increased while energy taxes should be reduced for LNG and kerosene. Second, the WGs suggested that electricity should be generated in dispersed networks rather than centralized network in order to secure stability of electricity generation and to enhance fairness in bearing the costs of electricity generation. Third, the ratio of nuclear energy in electricity mix should be lowered from 41% set by the first EMP in 2008 to 22 ~ 29%. Fourth, the ratio of renewable energy in electricity mix should be maintained as 11%, which was the same level set by the first EMP.

With the recommendations from the WGs, the MKE held two public hearings and ten seminars with experts and stakeholders, and three briefing sessions at National Assembly, and coordinated with other ministries and government think tank during October and December, 2013. And finally, the MKE formulated the government proposal for the second EMP that would be reviewed by the EC, the PCGG and the Cabinet meeting sequentially. The government proposal announced in December, 2013 by the MKE did not end controversy but brought it about again mostly because the proposal adopted 29% ratio of nuclear energy in electricity mix which was the maximum number in the range that was recommended by the WGs.

Civic group members, who participated in the WGs, announced official criticism on the government proposal for the second EMP in December, 2013 on the grounds that the energy demand forecast in the model was still so exaggerated that the government moved forward more supply with maximum nuclear energy in electricity mix. They criticized the government of ignoring their request 1) to test the model that the KEEI used in forecasting energy demand through joint fact-finding, 2) to have public deliberation on energy mix and preference on nuclear energy, and 3) to increase the ratio of renewable energy in electricity mix up to 15% by 2035.

Figure 4. Governance for the second EMP (2013. 5 ~ 2014. 1)



Provides a recommendation

### **Political shift toward a progressive government again and deepened public engagement**

Abrupt political change in South Korea was made by unexpected impeachment of President Park Geun-Hye in March 2017 due to her corruption scandal. In following presidential election, Moon, Jae-In, a progressive minority party leader, was elected as President and started his government in May, 2017. As a progressive leader, his presidential campaign pledges on energy policies were phase-out of nuclear power and expansion of renewable energy, which opened a new opportunity to civic groups again to influence energy policy-making. Specifically, Moon pledged to stop the construction of two nuclear power plants at Shin-Kori where more than 1 billion US dollars had already been committed. Nuclear industry sectors and local residents who were supposed to receive government compensation fiercely opposed the decision.

The Moon government utilized a ‘deliberative polling’ method where 471 ordinary citizens were randomly but scientifically selected to represent the general public in South Korea and were asked to deliberate for thirty three days in October, 2017 and vote on the issue of where to stop the construction of the two nuclear reactors with balanced information. On October 15, almost 60% of participants in deliberative polling preferred to resume construction for economic efficiency. At the same time, 53.2% voted to reduce the share of nuclear energy in Korea’s energy mix. Based upon the outcomes from the deliberative polls, the government announced that it would resume construction of two nuclear power plants but cancel plans to construct six new nuclear power plants in the future. Despite many flaws and shortcomings of procedures and outcomes, that effort was the first test in South Korea to determine highly technical and complex energy-related decisions by involving general citizens beyond civic group’s experts.

Then, the Ministry of Trade, Industry, and Energy (MTIE) (a new name of the MKE) announced sequentially ‘energy transition roadmap’ where the number of nuclear power



plants would be gradually reduced from 24 in 2017 to 18 in 2033, and to 14 in 2038, and ‘renewable energy 3020’ where the share of renewable energy in electricity mix would be increased from 7% in 2017 to 20% in 2030. In following December, 2013, the MTIE determined the 8<sup>th</sup> Basic Plan for Electricity Supply and Demand (BPESD) for the next fifteen years (2017 ~ 2031) where planned construction of six nuclear power plants would be revoked, and life-time of ten old reactors would not be extended. According to the BPESD, the share of nuclear power in electricity mix would be reduced to 11.7% by 2031. Those government plans made in 2017 were a sharp turn from the second EMP made three years ago in 2014. And those plans set the tones for the next third EMP in 2018.

### **Governance for the third EMP (2018. 3 ~ 2019. 6)**

The MTIE adopted a similar governance structure for the third EMP (2019 ~ 2040) where a public-private joint working groups would prepare a recommendation report with the help of government, mainly the MTIE so that the MTIE could announce the government proposal for the third EMP. Government officials from the MTIE and researchers from the KEEI participated in all WGs as assistant administrators and facilitators for the meetings. Particularly, the KEEI took the role of secretariat for all the commissioned research with other government think tanks.

However, there were a few changes in procedures. First, a few themes of working groups were changed from those of previous working groups for the second EMP. Maintaining WGs for coordination and energy demand management, the MTIE added three new WGs for energy supply management, conflict management (communication), and Industry (jobs) instead of previous themes of electricity generation, nuclear energy, renewable energy in March, 2018. It seemed that the MTIE avoided controversial agendas, such as the shares of nuclear power and renewable energy in electricity mix, in the themes of WGs since those issues were already sort out in previously announced plans in 2017. Second, the WGs for the third EMP had more participants, meetings and deliberation period than those of the second EMP WGs. Seventy five participants met more than sixty four times for nine months (March ~ November, 2018) while fifty people had about fifty meetings for six months (May ~ October, 2013). In terms of composition of members in WGs, the share of members from civic groups and private industries increased compared to the previous WGs. Many new and young experts were added, replacing conventional experts who had participated in many advisory meetings. Third, During their deliberation, the WGs had five regional briefings and an interim briefing to present their mission, visions, and activities to local governments and stakeholders.

After the WGs delivered theirs recommendations to the MTIE, it proceeded with consultation processes with public hearings, open seminars, other ministries, the EC, the Green Growth Commission, and the Cabinet approved the third EMP in its cabinet meeting.

### **Recommendations from the WGs for the third EMP**

The WGs for the third EMP recommended the ‘realization of safe, clean, citizen-participatory energy system’ as a long-term vision of energy transition policies, which would require six main tasks: 1) innovative energy demand management, 2) renewable

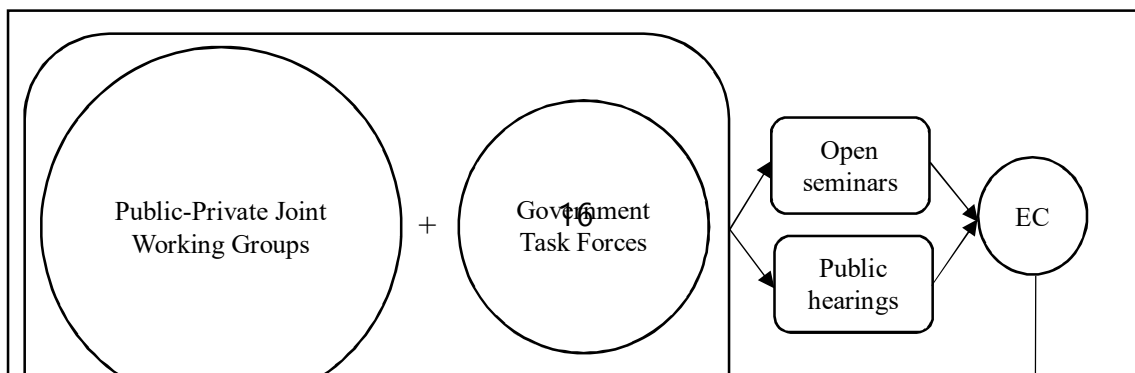
energy-based, integrated smart energy system, 3) future energy industries, 4) citizen-participatory, dispersed energy governance, 5) international collaboration for energy and resources, 6) infrastructure for the fourth industrial revolution and energy transition. More specifically, the WGs recommended that electricity pricing system should be reformed as soon as possible and the share of renewable energy in electricity mix should be between 25 ~ 40% by 2040. Interestingly, the WGs for the third EMP expected that energy demand would be decreased according to the forecast model, which indicated that there would be less and less necessity to build large-scale energy supply facilities, such as power plants.

### The third EMP (2019 ~ 2040) and criticism

The third EMP, approved at the Cabinet meeting on June 4, 2019, mandated that the share of renewable energy in electricity mix would be increased from 7.6% in 2017 up to the range between 30 ~ 35% in 2040. However, the third EMP did not specify the shares of nuclear energy and coal in electricity mix, but indicated that life-time of old nuclear power plants should not be extended and no new nuclear power plants would be constructed. The third EMP took the same line with the Moon government’s presidential campaign pledge and other governmental plans in 2017 that were aimed at phasing out nuclear energy and expanding renewable energy.

After the government announced the third EMP in June, 2019, commentators and experts, particularly from nuclear industries, harshly criticized the government on the grounds that the EMP was determined politically rather than rationally and the government tried to justify the decision with wrong assumptions in the model and in the name of participatory governance where civic groups influenced the decision in the WGs. For example, the WGs quoted the forecast of International Energy Agency (IEA) that the world average share of the renewable energy in electricity mix would be 40% in 2040 as the evidence to support the WGs’ recommendation to expand renewable energy in South Korea. However, the half of the 40% electricity would be generated from hydro power. For South Korea, electricity generated from renewable energy (solar and wind power) except hydro-power was only 1.6% in 2017. Thus, they criticized that the government target up to 35% in 2040 was unrealistic. More fundamental concerns are about the consequence of abrupt changes (within five years) between long-term (twenty years) master energy plans on trust of the public and industries on energy policies. Critics emphasized that the rationales and logics that the government used in the second EMP were replaced with the very opposite ones by the current government.

Figure 5. Governance for the third EMP (2018. 3 ~ 2019. 6)



## **Discussion and Conclusion**

It seems that governance for national energy policy making in South Korea has evolved gradually from expert-driven, supply-centered, closed system to more participatory, demand-considered, open system. While the government used terms ‘participation,’ ‘consultation’ ‘collaboration’ and ‘governance’ in their decision-making, this paper argues that conflict expansion model explains adequately well how Korean governance for national energy policy-making has evolved. Closed system of limited participation in energy policy-making has been altered by changing rosters of participants in committees and working groups and changing venues between the ministry level and presidential level based on the ideology or political values of presidents or political parties.

Recently, strategic venue for deliberation expanded to general public when the Moon administration asked general public whether to stop or continue construction of two nuclear power plants. Proponents for energy transformation argue that governance matters in order to curb the path toward more renewable energy and less nuclear power and still there are bitter relationships between energy stakeholders including energy industry sectors. During the evolution of governance in South Korea, many commentators acknowledge that long-term energy planning has been swayed by political changes between progressive government and conservative governments rather than based on sound and rational evidence or forecast.

Figure 6 and 7 show how the long-term energy plans for nuclear energy and renewable energy have fluctuated between the first EMP (2008) and the third EMP (2019). Particularly, the change in forecast for nuclear energy is remarkable between the first EMP (2008) when the Lee government supported nuclear energy as a clean and economic energy sources and the third EMP (2019) when President Moon made a presidential campaign pledge to phase-out nuclear power. All the experts panels, working groups, and

consultation processes seem to be utilized to justify the political decision that had been already made with the input from participants who got in appropriate venues for influence strategically.

Figure 6. Evolution of plans for the share of nuclear energy in energy mix

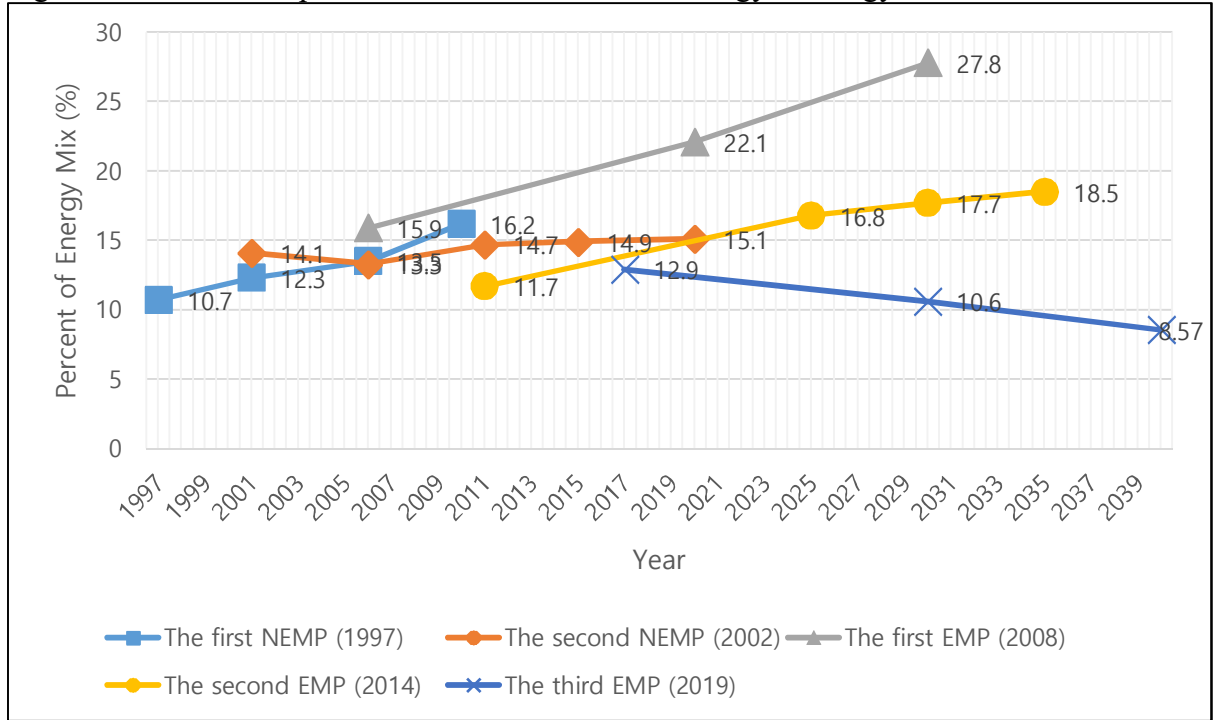
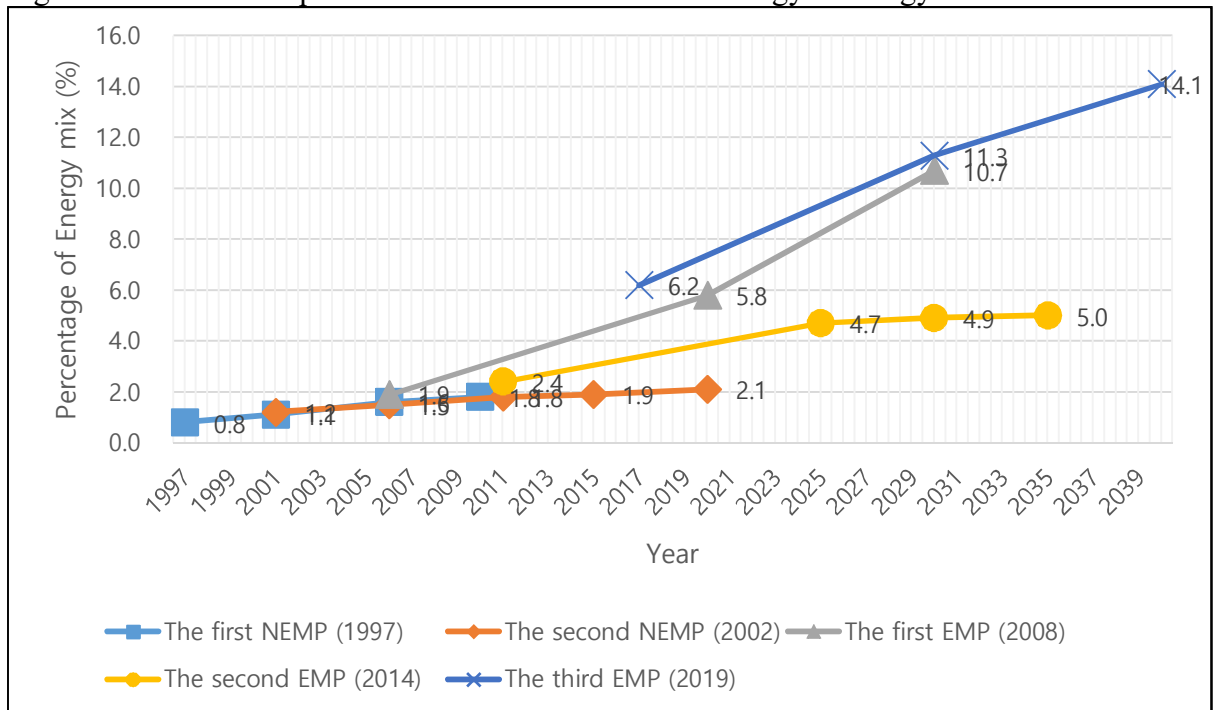


Figure 7. Evolution of plans for the share of renewable energy in energy mix



Regardless of the outcome being rational or irrational, or right or wrong, current governance structure needs to be improved in some aspects. Above all, if political change is the most influential factor to make a policy, then long-term plans may be changed abruptly again by political changes in election, hence no trust on long-term plans. Also, all the losers want to be winners again when political windows are open again by changing rosters, venues, and models to justify their positions, which is not sustainable.

General public should be consulted and asked to contribute to energy decision-making by the government. But, they should be approached strategically as a winning venue in order to belittle or limit specific stakeholders. When general public is involved in energy policy-making, which was regarded as the field for only experts and the government, we need to overcome some old tension among stereotyping frameworks. Experts has been framed as closed, not neutral, rational, or safe. Citizen's deliberation has been framed as irrational, amateur, and dangerous. Industries are greedy, resistant to change, corrupted. Environmental groups are radical, irrational, and political. Sustainable development may be achieved genuinely when those actors are satisfied with the governance of energy policy making as fair and rational, acknowledging other members including general public as partners rather than enemies. One potential option for sustainable energy policy-making may be combination of consensus-based stakeholder negotiations for joint-fact-finding and public deliberation based on the information generated from the negotiations.

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