

Korea, obsessed with “Nuclear Renaissance”

– Calling for Asian Countries’ Solidarity –

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Heonseok LEE(Energy Justice Actions, Representative)

Increasing Nuclear Power Toward 60%

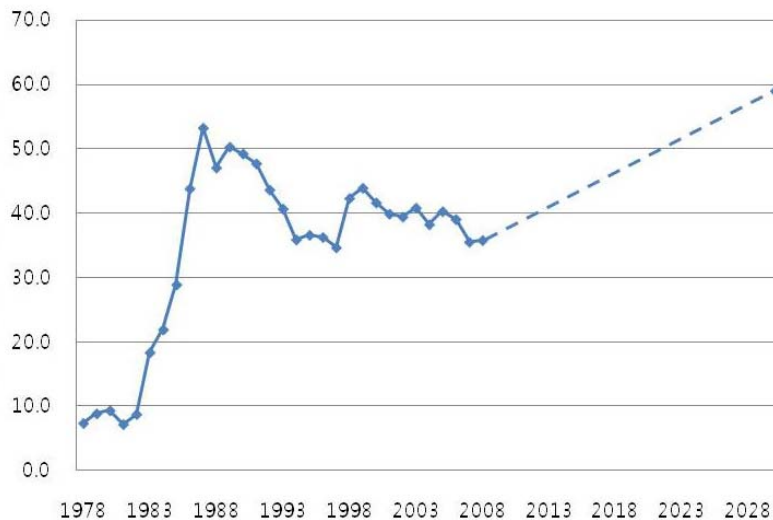
In 2008, Lee Myung-bak, President of South Korean, announced the country would increase the share of nuclear power to 59% of the total energy production in Korea by 2030 under the National Basic Energy Plan. It was an ambitious goal to make the share 1.6 times larger than 35.8% in 2008 within just 22years.

Few people know that the share of nuclear power in Korea has steadily declined since the 1900s. Although it reached to 53% thanks to series of constructions of nuclear power plants in the early 1980s, the share has dropped to 35%. It was attributable to growing debate over the need to secure various energy sources such as coal and natural gas. More worse, new construction of nuclear facilities was also hampered by the spread of anti-nuclear movement in the 1990s.

Since 2000, however, Korean government has announced its plans to build new nuclear power plants near the existing facilities, namely Shin-Kori, Shin-Uljin and Shin-Wolsung, and carried out the plans despite strong opposition from local residents and environmental groups. Ironically, the Lee administration’s National Energy Basic Plan, which promotes the construction of nuclear power plants, also demonstrates problems facing Korea’s nuclear power industry.

Korea’s electricity consumption has been at around 10 % every year by the 1990s. From 2000, the figure started to fall rapidly, and now stands at less than 5%. That is, we haven’t seen rapid growth of energy consumption, unlike high growth rate for the period of strong economic growth. Korean government expects this trend will continue and the Basic Plan of

Long-Term Supply and Demand (BPE) also forecast that the growth of electricity consumption will stand at annual rate of 2.2% by 2020.



<Nuclear Power Generating Capacity and Plan (unit : %)>

Thus, Korea does not need to build additional nuclear power plants any longer. With the exception of the Kori Unit-1 and Wolsung Unit-1, most power plants in Korea have been built recently and they have relatively long operational lifespan of 40 to 60 years. Therefore, Korea does not need to shut down the existing nuclear plants or extend their operational lifespan of them except for those two facilities.

Meanwhile, declining demand for a new nuclear power plant can be a disaster to nuclear power industry. Because the industry would be out of business without additional power plants each year, it began to have interest in increasing “the share of nuclear power generation.” Since its inauguration, Lee administration has aggressively carried out plans to expand nuclear power capacity in a way to reduce natural gas fired electricity generation.

As the table shows, Lee Myung-bak administration introduced “Low carbon green growth” policy to address climate change issues. In fact, the amount of coal fired power generation, the main culprit of green house gas emission, has increased while natural gas-fired electric generation which produces fewer emissions has significant dropped. And nuclear power generation makes up for the shortfall. Against this backdrop, environmental groups in Korea are strongly opposing Low Carbon, Green Growth Policy, arguing that we cannot achieve the target of low carbon, green growth when the policy promotes increases in total energy production and the share of nuclear power generation.

Moreover, many have doubts on the feasibility of government's plan. Exporting electricity will be hampered by Korea's geopolitical problem, the existence of North Korea. Under this circumstance, many agree that there is a limit to producing more nuclear power, considering that nuclear electricity provides with only permanent load power. France where the portion is 75% is addressing the problem by exporting much of the electricity to neighboring countries but as for Korea, this is not the case. Now, some people from the electricity industry thinks that a 59% nuclear share of electricity is just a wishful thinking. The possibility of the target is much less likely given other related problems such as social disputes over site selection for new nuclear power plants and funding for building nuclear power plants in a short period of time.

Year	Nuclear	Coal	LNG	Oil	Renewable	Pumped storages/RCS	Total
2007	142,937	154,674	78,427	18,228	4,313	4,546	403,125
(actual)	(35.5)	(38.4)	(19.5)	(4.5)	(1.1)	(1.1)	(100.0)
2022	265,180	198,822	34,132	887	25,844	28,432	553,297
(Plan)	(47.9)	(35.9)	(6.2)	(0.2)	(4.7)	(5.1)	(100.0)

<Generation outlook (The 4th Basic plan of Long-term Electricity Supply and Demand(2008~2022) /

unit : GWh, %)>

Apart from the question of the 59% target, another problem is that Korean nuclear industry becomes saturated. Korea has had to import foreign technologies to build nuclear power plants and this is one of the challenges facing the industry to become self-reliant.

The Korean nuclear industry hopes to gain vitality by exporting nuclear power plants and developing a complete nuclear fuel cycle.

Korea's successful win of was proved to be a breakthrough for the industry.

Exporting its nuclear power plant was no mean feat for the government. In fact, KBS, Korean public broadcaster, interrupted regular programs to air president's press conference. Even,

special documentary and concert were aired to celebrate the win of the UAE nuclear deal. Meanwhile, KHND (Korea Hydro & Nuclear Power Co., Ltd) and KEPCO (Korea Electric Power Corporation) have been regulated to rationalize management and improve managerial efficiency. When they laid off total 3,487 employees in 2009 alone, there were complaints over lack of workers at new nuclear power plants.

After signing the nuclear deal with the UAE, President Lee announced his ambitious goal to make the country world third-largest exporter of atomic energy technology by exporting 80 nuclear reactors by 2030. He also promised to offer full support to the nuclear industry. In line with this, the government announced various plans to boost the industry: 1) hiring 2,600 new employees for KEPCO and KHND for the next two years, 2) establishing KEPCO-International Nuclear Graduate School (KEPCO-INGS), and 3) investing in the R&D for core technologies on nuclear power plant.

Questions and doubts were raised on whether the government's goal – exporting 80 nuclear reactors and becoming the world third-largest exporter of nuclear technologies – but only to be dismissed as leftist tactics of instigation. The nuclear industry is now blessed with benefits from the government.

There is a sign of resuming the discussion on nuclear fuel reprocessing. Korean government has announced its R&D plans for reprocessing technologies like pyroprocess technology. The government has made it clear that it is necessary to secure technologies to process spent fuel if the country wants to become a leading exporter of nuclear power.

The government also constantly emphasizes the need to seek peaceful nuclear sovereignty – the right to process nuclear materials – by revising KOR-US Nuclear Agreement which expires in 2016. Korea intends to use the revision of the agreement as a chance to develop its own reprocessing technology. Currently, Korea cannot reprocess its own spent fuel rods without US permission.

The negotiation of the ROK-US Atomic Energy Agreement was supposed to begin in the late 2009 but it has been delayed due to the Cheonan incident and the Nuclear Security Summit. The United States still maintain that the country is unwilling to allow Korea to use pyroprocess technology, saying the technology is also related to the spread of nuclear weapons. The US finds little difference between pyroprocessing and other reprocessing technologies because pyroprocess can accelerate the nuclear proliferation. Of course, Washington acknowledges that there is little possibility to be used to extract plutonium from spent fuel rods. Certainly, it is hard to forecast the outcomes from the negotiation between

the two countries thanks to the tough stance of the United States. However, what is going on in Korea is particular worrisome.

After winning of the UAE nuclear deal, conservatives have claimed that Korea should be allowed to have technologies to enrich uranium and reprocess spent fuel rods, namely “peaceful nuclear sovereignty.” Not satisfied with what the government pursues, “pyroprocess,” they argue that the country needs those technologies to not only for commercial nuclear power plants but also for exporting nuclear power plants, but not for uranium enrichment and extracting plutonium. Becoming a global nuclear powerhouse is a distant hope when Korea has no uranium mines, uranium enrichment facility and reprocessing facility not to the mention that Korea has not yet developed a complete nuclear fuel cycle.

In Korea, the controversy over reprocessing spent fuel is not over yet. More precisely, it does not even begin. Many people still do not know ongoing issues of spent fuel reprocessing and even the issues are unfamiliar to liberal groups.

If the UAE deal is a relief to the Korean nuclear industry, nuclear fuel processing is something that promises the industry a bright future. Here, we can find the reason why anti-nuclear advocates should take more proactive actions.

Korea and Japan: along the same path, competing with each other

- △ Revision of nuclear agreement with the United States
- △ Export of nuclear power plants
- △ Nuclear Industry’s efforts to develop a full nuclear fuel cycle
- △ Governments’ support

As mentioned above, Korea and Japan have many things in common when it comes to nuclear energy. Korea has made a lot of efforts to learn lessons from Japan. Emulating Japan Atomic Energy Relations Organization (JAERO), Korea established the Korea Nuclear Energy Foundation (KNEF) to promote its nuclear industry right after protests against building nuclear waste site in Anmyeon-do, a large island in Taean, Chungcheongnam-do in 1990. As the country prepares for the revision of the KOR-UK Nuclear Agreement, Korea uses the process of Japan-US Nuclear Agreement as its reference.

Interestingly, the number of exemplary practices in Korea adopted by Japan is increasing as Korean nuclear industry grows. Prime examples are massive funding for a local government

that applies to host a nuclear waste dump site and forming a joint office led by builders and operators to export nuclear power plants.

Korea and Japan are among a few countries that are boosting nuclear industry and calling for Nuclear Renaissance while countries around the world are seeking to change their energy systems, focusing on new renewable energies in response to worsening climate change. Therefore, it is not unusual to see similarities in both countries' policy implementation.

However, this is not desirable given the consequences of nuclear power generation. Korea and Japan began nuclear talks with India around the same time. Signing of nuclear agreement with India – a non-member of NPT but a nuclear weapon state – will undermine the international nuclear order under the NPT and contribute to proliferation of nuclear weapons. Still, the two countries are pushing for the negotiations, claiming that peaceful or commercial use of nuclear energy has nothing to do with nuclear proliferation.

We should seriously take into account all the problems of nuclear power generation such as its risks, nuclear wastes and direct consequences of nuclear proliferation. Japan is a country already has plutonium and nuclear reprocessing facilities while Korea aims to enrich uranium and reprocess spent fuel following the suit of Japan. This creates uncertainty in peaceful Northeast Asia.

Apparently, Korea and Japan insist on peaceful use of nuclear power and responses to climate change but the two countries are moving one step closer to a nuclear state as long as their energy policies are focusing on nuclear power generation.

New Challenges Facing Anti-nuclear Movement in Asia: continuous surveillance and check for Korean and Japanese nuclear industries.

The role of Asia is increasing in terms of anti-nuclear movement. Several Asian countries are leading the nuclear renaissance away from the global trend of non-nuclear energy production: 1) Japanese nuclear sector is now leading the world nuclear industry after series of M&As since 1990, 2) China is emerging as a candidate for new nuclear power plant sites, 3) Korea aims to become the world third largest exporter of nuclear power stations and 4) Taiwan is building its fourth nuclear power plant despite public's strong opposition and many accidents.

Korea and Japan will do everything in their power to build nuclear power plants in other Asian countries instead of America and EU where any construction of nuclear facilities is not under way. In deed, it is widely known that Korea and Japan competed to win the bid to build

nuclear power plants in the UAE and Jordan. Their efforts to win the bids are still in progress in some Asian countries. Such competition will become fiercer and it will lead to changes in the focus of antinuclear movement to exporting of nuclear power plants from building them in local areas.

In this regard, the scope of anti-nuclear movement in Asian countries should be expanded, covering not only new construction of nuclear power plants within their own country but also other risky behaviors. In the past, major task for anti-nuclear movement was sharing information on the situations of its activities. However, the gravity of anti-nuclear movement will be shifted to the roles of civil groups in exporting and importing countries. In other word, they need to work together to think about the problems of nuclear power plants and set up proper strategies.

Anti-nuclear advocates in Korea and Japan are planning to discuss the challenges faced by civil society as Korea hosts the G-20 Seoul Summit in November. We hope this effort continues until the 2012 Unclear Security Summit in Seoul.

The No Nuke Asia Forum will celebrate its 20th anniversary in 2012 since it was first launched in 1992. The forum has been held in Asian countries every year despite many difficulties. This year, too, the forum needs to continue its previous efforts and discuss new strategies to meet rapidly changing trend in nuclear industry. In this regard, I (We) would like to ask all Asian countries to find ways to monitor and check both Korean and Japanese nuclear industries. I (We) believe that by doing so, we can move closer to achieving the goal of the No Nuke Asia Forum, “the Asia without Nuke.”