



Climate and Energy Policies of Korea: Current State and Challenges

Hyun-woo Kim

Table of Contents

1. Background of Korea’s Recent Climate and Energy Policies	2
1.1. A Brief History of Korea’s Climate and Energy Policies	2
1.2. GHG Emissions in Korea: Current State and Circumstances	2
1.3. Establishing Carbon Neutrality 2050 Scenarios.....	3
2. The Yoon Suk-yeol Administration and Changes in Climate and Energy Policies.....	5
2.1. The 20th Presidential Election and Climate and Energy Policies.....	5
2.2. Abolition of Nuclear Power Phase-out and Weakening of the Renewable Energy Drive	5
2.3. Launch of the 2nd Carbon Neutrality Commission	6
3. Key Issues of Korean Climate and Energy Policies	7
3.1. Controversy over the K-Taxonomy	7
3.2. A Protest Letter from an RE100 Organization	7
3.3. Just Transition.....	7
3.4. Anticipated Future Issues	8
4. Q&A on Korea’s Climate and Energy Policies.....	9
4.1. What is the general process of policy-making on energy and the environment in Korea, and who are the main actors?	9
4.2. How do lobby groups or related interest groups engage in and impact the process of policy-making? ..	9
4.3. What is the role of the civil society and the trade unions in the policy-making process?	9
4.4. What is the role or significance of “just transition” in the policy-making on energy and environment in Korea?	10
5. Public and Corporate Attitudes	10
6. A Brief Comparison with Germany	11
< References>	12

1. Background of Korea's Recent Climate and Energy Policies

1.1. A Brief History of Korea's Climate and Energy Policies

The Korean government began to respond to climate change in earnest since the Lee Myung-bak Administration in 2007. The Lee Administration pursued the "green growth" policy from the beginning and actively promoted the policy at the 15th Session of the Conference of the Parties (COP 15) held in Copenhagen. This policy, however, never led to a legislation or a specific energy policy that could effectively reduce greenhouse gas (GHG) emissions. Instead, it focused on the environmentally destructive "Four Major Rivers Project," and GHG emissions continued to increase in Korea.

While energy policy has the greatest impact on GHG emissions, Korea's energy policy was driven by factors other than climate change. The disaster at Fukushima Daiichi Nuclear Power Plant in 2011 required Korea to reconsider its energy policy, which was highly dependent on nuclear power. Korea currently operates 25 reactors, supplying around 30% of power in the country.

In 2017, the Moon Jae-in Administration decided to close aged coal-fired power plants early on in order to reduce the generation of fine dust, which raised serious health concerns among the public at the time, rather than as a response to climate change. In October of the same year, the Moon Administration decided to refer the issue of whether or not to complete the construction of new reactors of Shin Kori 5 and 6 to public opinion and announced follow-up measures as well as an energy transition roadmap for nuclear power phase-out. These measures included cancelling the construction of new reactors in addition to Shin Kori 5 and 6, the early shut-down of the aged Wolsong 1 reactor, increasing the share of renewable energy in power generation from the current 7% to 20% by 2030, and establishing plans to support affected local industries. Even if the roadmap is carried out as planned, with Shin Kori 5 & 6 completed and operated according to their design life, nuclear power will stay into the late 2080s. This means nuclear power phase-out at a very slow pace.

While nuclear power phase-out and energy transition policies of the Moon Administration were excessively politicized between conservatives and progressives, developing effective energy mix or detailed policies was at a standstill. The civil society has organized national alliances such as the "Climate Crisis Emergency Action" and carried out advocacy campaigns in order to tackle the Moon Administration's lukewarm climate policy, despite the announcement on carbon neutrality, and raise public awareness.

1.2. GHG Emissions in Korea: Current State and Circumstances

Korea is one of the largest GHG emitters in the world. According to the Global Carbon Project (GCP), an international group of scientists, Korea was ranked 9th in the world with the emissions of 611 million metric tons in 2019, down from 8th in the peak year of 2018. In 2020, emissions dropped by an additional 7.3%, which is attributed to the impact of COVID-19 and the relatively cool weather, rather than the government's climate responses. The provisional national emissions in 2021 released by the GHG Inventory and Research Center is 679.6 million tons. This is an increase by 23 million tons (3.5%) compared to 2020 due to increased mobility of people and industrial production after the pandemic.

Korea's Nationally Determined Contribution (NDC) for 2030 was established in June 2015 with a target of reducing emissions by 37% compared to the BAU levels of 851 million tons by 2030. Then, in October 2020, the NDC was adjusted upwards as a follow-up measure to President Moon's declaration on carbon neutrality by 2050. The new NDC submitted to the UN is 436 million tons, a 40% reduction by 2030 compared to the 2018 levels (emissions peak).

Recent trends in emissions, however, show that it is becoming more difficult to reach NDC targets, even though emissions are

increasing at a pace slower than the global average and emissions per GDP improved slightly. Furthermore, according to the analysis of the Institute for Climate Change Action, Korea will become the largest per capita emitter among the world's 10 largest economies by 2030, even if all NDC targets are achieved by 2030. Ultimately, since overall GHG emissions and energy consumption in Korea kept soaring over the course of more than 50 years, it is difficult to say that a significant improvement has been made to alter the overall trend.

Korea's large per capita emissions is attributed to the export-driven industrial structure rather than individual consumption and lifestyle. The industrial structure of Korea is focused on energy-intensive manufacturing such as steel, petrochemical and automotive industries. Therefore, it is challenging to systematically reduce emissions in a short period of time.

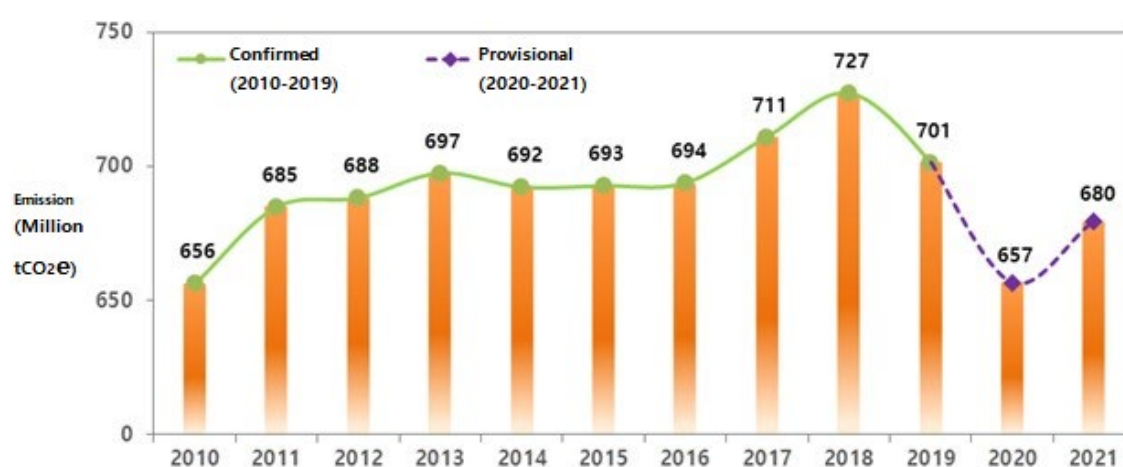


Figure 1. Trends in GHG Emissions in Korea

*Source: GHG Inventory and Research Center

1.3. Establishing Carbon Neutrality 2050 Scenarios

Korea was not an exception to the COVID-19 pandemic that broke out in early 2020 and spread worldwide, and the government faced the double task of fighting the pandemic and responding to climate crisis. President Moon Jae-in proposed a plan to take a leap from a carbon-dependent economy to a low-carbon economy and from an unequal society to an inclusive society by adding “green new deal” to the existing plans on “digital new deal” and reinforcing the social safety net. The Comprehensive Plan on Korean New Deal was announced with the goal of creating 1.9 million jobs by investing a total of 160 trillion Korean won in working expenses by 2025, with the budget for green new deal at 73 trillion won. Centerpieces of green new deal include expansion of green mobility, innovation of the green industry, expansion of new and renewable energy, and achieving zero energy consumption at public facilities.

Around the same time, the Korean government declared that it will join in the efforts to realize carbon neutrality goals to keep pace with the international society. On October 28, 2020, President Moon Jae-in declared “Carbon Neutrality 2050” at a National Assembly speech and finalized the Long-term Low Carbon Emission Development Strategies (LEDS) in a cabinet meeting at the end of the year.

The launch of the “Carbon Neutrality Commission” was an important move in Korea's recent GHG reduction policy. At the end of

May 2021, right before the “Partnering for Green Growth and the Global Goals 2030 (P4G) Summit,” the Korean government announced the establishment of the Presidential Commission on Carbon Neutrality and Green Growth (Carbon Neutrality Commission). In order to legally support carbon neutrality policies through the activities of the Commission, the National Assembly passed the Framework Act on Carbon Neutrality and Green Growth, and the Carbon Neutrality Commission finalized carbon neutrality scenarios in October 2021.

The Carbon Neutrality 2050 Scenario drafted by the Carbon Neutrality Commission was criticized for the fact that coal-fired power plants and nuclear power plants would remain until 2050 without a meaningful progress in cutting emissions. Eventually, the Commission adopted two scenarios to realize carbon neutrality by 2050 (See Table 1). They, however, do not resolve issues such as uncertainty in carbon sink technology, potential for hydrogen energy and economic feasibility. The industrial world strongly opposed the final scenarios for the burden to be imposed on them, and the civil society criticized their inadequate targets and means.

Type	Sector	2018	Final (2050)		Remarks
			Scenario A	Scenario B	
Emission Amount		686.3	0	0	
Emissions	Energy Transformation	269.6	0	20.7	<ul style="list-style-type: none"> • (Scenario A) Complete discontinuance of thermal power generation • (Scenario B) Partial generation of thermal power using liquefied natural gas (LNG)
	Industries	260.5	51.1	51.1	
	Buildings	52.1	6.2	6.2	
	Transportation	98.1	2.8	9.2	<ul style="list-style-type: none"> • (Scenario A) Complete transition into electric vehicles, hydrogen vehicles, etc. in the road sector • (Scenario B) Use of alternative fuels (e-fuel, etc.) for internal combustion engine vehicles in the road sector
	Agriculture, Livestock and Fisheries	24.7	15.4	15.4	
	Waste	17.1	4.4	4.4	
	Hydrogen	-	0	9	<ul style="list-style-type: none"> • (Scenario A) Use of electrolysis for all domestic hydrogen production (green hydrogen) • (Scenario B) Partial supply of domestically produced hydrogen using by-products/extracted hydrogen
	Omissions	5.6	0.5	1.3	

Type	Sector	2018	Final (2050)		Remarks
			Scenario A	Scenario B	
Absorption and Removal	Carbon Sinks	-41.3	-25.3	-25.3	
	Carbon Capture, Use and Storage (CCUS)	-	-55.1	-84.6	
	Direct Air Capture (DAC)	-	-	-7.4	<ul style="list-style-type: none"> Assumption that the captured carbon is utilized as an alternative fuel for vehicles

Table 1. Final Scenarios for Carbon Neutrality 2050 in Korea

*Source: Carbon Neutrality Commission website

2. The Yoon Suk-yeol Administration and Changes in Climate and Energy Policies

2.1. The 20th Presidential Election and Climate and Energy Policies

Nuclear phase-out and energy transition policies of Korea were promoted mainly through the personal will of President Moon Jae-in and exhibited structural weakness without collective support from political force or institutional framework. For this reason, there was no coherence between reduction of nuclear power, GHG emissions reduction, export of nuclear power plant, and nuclear waste disposal policies, and the opposition party took advantage of it. After the change of government, this led to a complete reversal in the nuclear power phase-out policy.

An aggressive climate policy was rarely to be seen among the pledges offered by major candidates in the 20th Presidential Election. While the Justice Party declared climate crisis as its primary agenda, the top 3 candidates in the polls didn't treat climate crisis as a serious issue at all. Even so, nuclear power phase-out was intensely debated. Yoon Suk-yeol of the People Power Party argued for more nuclear power plants, saying that achieving carbon neutrality through nuclear power phase-out was impossible from the beginning. Ahn Cheol-soo pledged to promote the development of innovative small modular reactor (SMR) technology as a national project and promised an energy mix roadmap of 35% nuclear energy, 35% renewable energy and 30% other energy by 2050. Furthermore, Ahn said that he would revise the ROK-US Agreement on Atomic Energy to promote pyro-processing for recycling spent nuclear fuel.

At the center of dispute was resuming the construction of new reactors of Shin Hanul 3 and 4 in Uljin after getting cancelled by the Moon Jae-in Administration. Yoon and Ahn argued that it is possible to reduce carbon emissions by 40% by 2030 if Shin Hanul 3 and 4 are completed and the 11 nuclear power plants that reached the end of their design life are operated for an extended period.

2.2. Abolition of Nuclear Power Phase-out and Weakening of the Renewable Energy Drive

The Yoon Suk-yeol Administration elected in March 2022 presented its 110 national priorities such as abandoning nuclear power

phase-out, creating and pioneering future markets by restoring the “nuclear power plant ecosystem,” and fostering core industries in the fields of zero emission vehicles, renewable energy, hydrogen industry, and carbon capture, utilization and storage (CCUS). As for nuclear power more specifically, key measures include resumption of the Shin Hanul 3 and 4 construction and continued operation of nuclear power plants with expired operation permit (10 plants by 2030). In addition, the Committee on the Promotion of Nuclear Power Plant Export Strategy plans to support winning contracts and devising penetration strategies tailored to potential markets.

As for coal-fired power plants, twenty aged power generators will be shut down by 2030 (fifty seven coal-fired power generators are in operation today), but, the seven power generators in construction will be completed on the grounds that they were already approved. Proposed investment policies include sophistication of the emissions trading system and activation of private investment through the finalization of the “K-Taxonomy.”

The 10th Basic Plan on Electricity Demand and Supply (Electricity Plan) finalized in January 2023, incorporating the policy changes described above, aims for a mix of 32.4% nuclear, 19.7% coal, 22.9% LNG and 21.6% new and renewable energy by 2030. Residents of Busan and Ulsan, however, are strongly opposed to the service life extension process of the reactor Kori 2 already underway, as they are witnessing before their very eyes an undemocratic process without a proper safety evaluation. Furthermore, life extension and new construction of nuclear power plants would continue to increase the amount of radioactive waste when there is no way or place to dispose of high-level waste, and the future generations would inherit unbearable burden.

Meanwhile, the 10th Electricity Plan does not include an early shut-down of coal-fired power plants, which would provide the clearest signal for climate crisis response and GHG reduction. Instead, the plan keeps the construction of new coal-fired power plants now underway in Samcheok and other areas.

2.3. Launch of the 2nd Carbon Neutrality Commission

In October 2022, the Yoon Suk-yeol Administration launched the Presidential Commission on Carbon Neutrality and Green Growth with a new term, and plans to establish a “GHG Reduction Implementation Roadmap” that includes reduction targets by sector and year and specific policies by means of reduction as well as the “Basic Plan on National Carbon Neutrality and Green Growth” by March 2023. The Administration says that the decision-making system was reorganized to become more swift and efficient by reducing the number of private sector members from 76 to 32, prioritizing experts by field, and consolidating eight sub-committees into four.

The policy direction newly announced by the Commission aims for: a) harmonization between nuclear power plants and new and renewable energy, b) re-establishment of energy mix through introduction of carbon-free new power source, c) promotion of optimization of energy efficiency with ICT and advancement of systems based on market principles, d) establishment of a community-led carbon neutrality implementation system by establishing locally customized strategies and support centers, and e) resolving challenges quickly through a pan-government support system when they involve many different ministries, including official approval and permit.

While existing carbon neutrality strategies focused on providing the foundation for the implementation of carbon neutrality policies through the construction of public and private governance and enactment of laws, the new administration evaluates them as limited in feasibility because discussions were carried out over a short period of time, resulting in lack of communication with interested parties. What this actually means is that the current government thinks previous administrations’ strategies do not reflect the industry’s interests enough and were based on a government-led top-down approach.

In particular, the new administration announced that it would raise the possibility of policy realization through reasonable GHG reduction based on a balanced energy mix consisting of expansion of nuclear power plants and harmonization with renewable energy, construction of a transparent, systematic, and permanent implementation management system, and a pan-government support system. Here, expressions such as “balanced” energy mix and “possibility of realization” are also euphemistic phrases for nuclear power plant-centered energy policies.

3. Key Issues of Korean Climate and Energy Policies

3.1. Controversy over the K-Taxonomy

The K-Taxonomy, which defines the scope of environmentally sustainable economic activity, is the Korean version of green taxonomy presented by the European Union (EU). While nuclear power plants were excluded in the first draft, it was modified to include nuclear power after the inauguration of the Yoon Suk-yeol Administration with loosened standards on nuclear power plants compared to those of EU Taxonomy. The issue is the timeframe for introducing accident tolerant fuel. While the EU Taxonomy decided to adopt it in 2025, the K-Taxonomy decided to apply it to the plants in “continued operation” in 2031, as opposed to the “newly constructed nuclear power plants” subject to immediate application. Standards regarding radioactive waste disposal facilities are also an issue. The EU Taxonomy stipulates the preparation of a documented, detailed plan for the operation of high-level waste disposal facilities and the reservation of low- and intermediate-level radioactive waste disposal facility by 2050. Meanwhile, the K-Taxonomy only contains a vague expression such as “enactment of a law that can guarantee a swift procurement of high-level waste disposal facilities”. The current high-level waste disposal facility plan of the Korean government says that a facility shall be procured within 37 years of selecting the site, which means the disposal facility will be ready by 2060 even if the site is selected this year.

3.2. A Protest Letter from an RE100 Organization

As the Yoon Suk-yeol Administration made restoration of the nuclear power plant ecosystem its top priority and downgraded renewable energy targets, concerns and criticism were raised by domestic renewable energy industry and environmental organizations as well as from observers overseas. On November 28, 2022, the Climate Group, a non-profit organization for global RE100 campaigns, sent a protest letter signed by its head, Mike Pierce, to President Yoon Suk-yeol, denouncing the setbacks to renewable energy targets by the Korean government.

The letter stressed how the renewable energy targets contained in the draft by the Korean government was vastly insufficient for the purpose of procuring environment-friendly electricity for RE100 companies. It also pointed out that Korea is considered one of the countries in which renewable energy procurement is most difficult for businesses committed to RE100, that businesses are currently purchasing only around 2% of the needed renewable energy, and that there is more demand for renewable energy than expected because 52 foreign businesses that joined RE100 have subsidiaries in Korea.

3.3. Just Transition

The Framework Act on Carbon Neutrality and Green Growth includes the phrase “just transition” and related clauses, and the Yoon Suk-yeol Administration also mentions it as a policy item. The content of the Act, however, is only about supporting smooth transition in industries and jobs through establishing an early warning system utilizing big data on employment and transfer by industry in order to provide job training and support starting businesses in the climate sector, which does not meet the conditions

and demands from the field. The plan focuses on expanding the training infrastructure by supporting job training programs and covering expenses for workers in the affected industries, and the only target explicitly stated is converting 1,200 internal combustion engine parts manufacturers to future car parts manufacturers by 2030.

3.4. Anticipated Future Issues

First, the appropriateness of GHG reduction targets will continue to stir up controversy. The NDC targets submitted by Korea are not yielding adequate outcome, and Korea has not submitted new targets based on the principle of “no retreat but only progress” at the COP27 either. The appropriateness of GHG reduction is expected to be a prolonged issue since a few lawsuits (youth climate suit, etc.) are underway in Korea regarding the NDC targets until 2030.

Second, there are also the problems regarding the appropriateness and practicality of nuclear power plant-centered energy mix. The Yoon Suk-yeol Administration has set the recovery of the nuclear power plant industry as a top priority and simplistically set the proportion of nuclear power over 30% and subordinated the composition of other energy sources to the nuclear power plant industry. Hardships are anticipated such as the approval process of the construction of Shin Hanul 3 and 4, the problem of standards, technologies and cost for extending the life of aged nuclear power plants, and opposition by local residents and local governments. Also, while the survival of the nuclear power plant ecosystem depends on the diversification of nuclear power plant export, the possibility of procuring a large overseas contract is not high. Meanwhile, other issues include opposition by related industries and RE100 organizations following the downgrading of renewable energy targets and problems occurring from the delay in grid (transmission and distribution networks and backup power supply) expansion.

Third, just transition is loaded with tasks in terms of policy direction, legal system, and stakeholder participation. The 2nd Carbon Neutrality Commission of the Yoon Suk-yeol Administration has no member participation from the trade unions. There is a great lack of representation from stakeholders and workers' organizations in regions where just transition is rising as an urgent issue (coal phase-out in Chungcheongnamdo Province, and regions dependent on internal combustion engine automobile industry, etc.). The government's related policies and laws remain at the level of business-centered support and job placement, while there is no mid- to long-term blueprint to recover the local communities and reinforce their capabilities.

Fourth, there are also issues related to energy rates and taxation. Energy rates rationalization and introduction of a new tax (carbon tax) are demanded for carbon neutrality and energy transition, and Korea Electric Power (KEPCO) is recording a large deficit. The government, however, is only raising electricity charges as a temporary measure in consideration of the War in Ukraine and global energy prices.

Fifth, there is a need to improve the governance on climate and the environment. With the Yoon Suk-yeol Administration, the composition of the Carbon Neutrality Commission was dominated by experts and the industry, which means a wide-range of interested parties associated with climate crisis as well as social sectors are not represented. Furthermore, the Chairperson of the Carbon Neutrality Commission and the Ministry of Trade, Industry and Energy have different stances regarding the establishment of the Basic Plan on Carbon Neutrality and Green Growth, so it is still uncertain whether the Carbon Neutrality Commission can secure its independence.

Sixth, the discussion on reorganizing government ministries to supervise both climate and energy policies and manage the transition (e.g. Ministry of Climate and Energy) is not making any progress, and securing policy coherence between carbon neutrality and energy transition remains a challenge.

4. Q&A on Korea's Climate and Energy Policies

4.1. What is the general process of policy-making on energy and the environment in Korea, and who are the main actors?

- Technically, the ministry mainly responsible for energy and the environment drafts policies. In practice, however, consistency is undermined because each ministry is in charge of certain policies (e.g. Energy policy by the Ministry of Trade, Industry and Energy, and GHG policy by the Ministry of Environment). In the case of important policies with many stakeholders, an integrated task force or a working group is created. In that case, relevant government ministries, the industry, and the civil society are involved, but, in reality, growth-centered government ministries and the industry often dominate policy direction.

There are many government-funded and private research institutions that professionally deal with policies on energy and environment, and the government would sometimes request them to provide policy drafts or reference materials. Even in this case, however, policy directions and their details are determined in advance by the government, and researchers are only asked to write conclusions accordingly. In fact, it is likely that the carbon neutrality scenarios and strategies of the Presidential Commission on Carbon Neutrality and Green Growth were drafted based on the stance of the major corporations (e.g. Samsung, POSCO, Hyundai, Doosan, etc.), which was unofficially communicated and negotiated with the Ministry of Trade, Industry and Energy and the Ministry of Economy and Finance

4.2. How do lobby groups or related interest groups engage in and impact the process of policy-making?

- Powerful companies and interest groups exercise influence without going through an official governance body. In the Yoon Suk-yeol Administration, the nuclear industry's lobbying or pressuring activity is not very visible, either because those who represent their interests are already working in the major energy institutions and ministries, or because the current administration's policy details already reflect their perspectives and demands. Small and medium-sized occupation groups and associations lobby lawmakers, or send official letters in an attempt to communicate their demands and how much they are affected. Though a small number of lawmakers and heads of research institutions are from the civil society, it is difficult to have an independent voice and action in such a political structure dominated by the President's authority.

4.3. What is the role of the civil society and the trade unions in the policy-making process?

- The civil society struggles to prevent further deterioration, let alone demand essential and large changes (e.g. legislation for the early shut-down of coal-fired power plant, and opposition to a special act to promote new airport construction). The civil society is focusing on mobilizing citizens and providing climate education for the public through popular alliances such as the Climate Crisis Emergency Action.

Trade unions agree on carbon neutrality and just transition in general. However, demands for climate action vary significantly between national confederations (the Korean Confederation of Trade Unions, and the Federation of Korean Trade Unions) and industrial unions (manufacturing, energy, public transportation, government employee, private service, health and medical sector, etc.), due to the differences in their interests and political impact on policies. Since 2019, national confederations and industrial unions have worked on mainstreaming climate crisis as a core policy challenge, and relevant activities have increased for improving the legal and institutional framework (e.g. the Democratic and Just Industrial Transition Committee established by the Korean Metal Workers' Union), collective negotiation (demand for an agreement on climate crisis by the Korean Health and Medical Workers' Union), and internal membership training.

4.4. What is the role or significance of "just transition" in the policy-making on energy and environment in Korea?

- It has been less than three years since the Ministry of Employment and Labor started to consider climate crisis as a relevant issue, and the Ministry of Trade, Industry and Energy has also just started to pay attention to connect employment with carbon neutrality. In terms of carbon neutrality promotion strategy, there is a huge room for improvement in the government's research and data on employment and anticipated local damage in connection with climate crisis. Not only will it take time, but it also needs a momentum to change the traditional "income-led" growth policy paradigm of the Korean government that has mainly supported the capital and businesses.

It is not a small change, however, that just transition was stipulated in the national law and related policy items were created. Since a forum on just transition was created under the United Nations Framework Convention on Climate Change, the Korean government, albeit a bit passively, now has the grounds to work for just transition with a potential for success, depending on how much it utilizes the pressure from the trade unions and the civil society. In order to achieve this, there needs to be demands from regions and sectors in Korea for just transition policies and programs. It will also help to learn from many reference cases of other countries, such as Germany.

5. Public and Corporate Attitudes

In February 2022, Gallup Korea released the results of a survey conducted in 40 countries, including Korea, on "Public Perception on Climate Change and Sustainability." When asked if global warming poses a serious threat on humankind, 93% of respondents in Korea agreed, while only 86% did in the other 39 countries. Also, 84% of Korean respondents agreed that global warming has caused more natural disasters, while only 81% of respondents in the other countries did.

According to Segye Ilbo's survey on climate change released in July 2019, however, Koreans tend to prefer taking climate actions later, while believing climate change is serious. Eight to nine out of ten respondents said that climate change is a serious issue, but it should be treated as a long-term challenge, while economic growth and unemployment issue should be dealt with immediately. When Koreans were asked to pick "the top priority to be addressed within one year" among eight options such as unemployment, economic growth, and climate change, economic growth overwhelmingly took the first place. Unemployment came in second, followed by low birth rate and an aging population, the rich-poor gap, and inter-Korean relations. Climate change was given the lowest priority, along with gender/generational conflict. Meanwhile, when Koreans were asked to pick "the top priority to be addressed within 10 years," climate change climbed up to the third place. When asked on a 30-year timeframe, Koreans picked climate change as the second most important issue, following low birth rate and an aging population by only 0.4% margin.

The Korean public is almost evenly divided on the issue of building more nuclear power plants to curb climate change. However, they are absolutely opposed to an idea of building nuclear power plants or radioactive waste disposal facility near their community. In a similar vein, although the majority is willing to pay more for energy use to support energy transition and climate actions, they strongly oppose any unjustified increase in their electric bills.

Meanwhile, Korean companies have an ambivalent attitude toward the climate and environment issues. Majority of big companies are actively promoting their commitment to "carbon neutrality" through TV advertisements. Although some of them are genuinely serious about cutting emissions with their technologies and products, most of them are essentially running "greenwashing" ad campaigns as if they have adopted the technologies that are still in a development phase or yet to be commercialized. In other words, the majority of Korean companies are well aware of the changes and challenges posed by climate crisis and the carbon neutrality initiative, but, at the same time, they want to stay competitive by consuming cheap fossil fuel and nuclear power as

long as possible, at least for now.

Despite the government's lackluster climate policy, major carbon emitters have taken the initiative to prioritize emission reduction in their strategies voluntarily. For example, Hyundai Motor Company has already shifted its core business to electric vehicles and batteries as a part of its strategy to aggressively target the US market. As of September 2022, a total of 137 Korean businesses, including Hyundai Motor Company, Samsung Electronics, Amorepacific, KB, Mirae Asset Securities, and Lotte affiliates, are committed to the RE100 initiative.

In addition, many big companies are developing and expanding businesses and items related to energy transition and energy efficiency, while maintaining businesses related to fossil fuel and carbon intense items that have been lucrative for many years. A prime example is Doosan Enerbility, a company traditionally known for manufacturing key components for coal-fired power plants and nuclear power plants. However, they are now actively diversifying their portfolio by increasing their involvement in wind turbine production and high-efficiency energy infrastructure using their own technology.

Ultimately, Korean companies' commitment to carbon neutrality and environmental protection may vary based on domestic and international market conditions, as well as the government's policy direction. Consequently, Korea requires a robust energy policy and clear guidelines regarding energy rates and taxes, which can effectively signal the desired direction for the companies.

6. A Brief Comparison with Germany

Although Korea and Germany have taken substantially different paths historically, they have a lot in common, such as the experience of national division, export- and manufacturing-driven economy, population size, and limited resources. Therefore, Germany's lead in energy transition and climate actions can have critical implications for the future of Korea.

First, the energy policy in Germany is integrated and consistent. Germany has conducted a wide range of research and discussion on moving away from fossil fuel and nuclear power since the oil crises in the 1970s. Also, the consensus on nuclear phase-out usually remains intact after the change of government. Despite the recent challenges to energy transition posed by the War in Ukraine, not much has been changed in Germany's energy policy, except for keeping a small number of coal-fired and nuclear power plants in reserve. South Korean government needs to pay attention to the differences in legal and institutional frameworks that enable the consistent energy policy in Germany integrated with the climate policy.

Second, there is the "governance" issue. The "Coal Commission" of Germany involved a wide range of core stakeholders and carried out an in-depth review of diverse issues with a goal of completing coal phase-out by 2038. Of course, Germany has the experience of reaching a consensus on nuclear phase-out and the Ethics Commission on energy use, as well as the tradition of co-determination on key issues in industrial relations. In contrast, the climate and energy governance in Korea is predominantly formal and fragile, and poorly represents stakeholders and affected communities.

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About the Author:

Hyun-woo Kim worked at the Korea Labour & Society Society Institute, the former Democratic Labor Party, and the former New Progressive Party. He also conducted researches on just transition of the energy system and energy democracy, working for 10 years at the Climate and Energy Policy Institute. Mr. Kim currently helps the publication of *No Nukes News* as the Chair of the Steering Committee, while also focusing on education that raises awareness on climate crisis and research on degrowth.

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5F, 49, Donhwamun-ro, Jongno-gu, Seoul, South Korea

Responsible:

Henning Effner

Resident Representative of Friedrich-Ebert-Stiftung, Korea Office

t: +82 (0) 2-745-2648

f: +82 (0) 2-745-6684

w: korea.fes.de

e: info.korea@fes.de

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FES has established its office in Korea in the late 1960s. The work of FES in Korea aims at sharing the experiences of German unification, initiating dialogues between Germany/Europe and Korea on the socio-economic justice, and strengthening participatory democracy as well as civil liberties.