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Master's Thesis of Huiyong Kim

**Examining South Korea's Climate Change
Governance during Lee Myung-bak, Park
Geun-hye, and Moon Jae-in Administration**

**이명박 정권, 박근혜 정권, 문재인 정권의
기후변화 거버넌스에 대한 고찰**

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Examining South Korea's Climate
Change Governance during Lee
Myung-bak, Park Geun-hye, and
Moon Jae-in Administration
- an analysis on legal and institutional basis
for climate change governance

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Abstract

Since the adoption of the Kyoto Protocol in 1997 and its implementation in 2005, the international community has mainstreamed global responses to tackle climate change issues and enforce coordinated action towards global climate change governance followed by the Paris Agreement adopted in 2015 (the Government of the Republic of Korea, 2020b, 6). The Intergovernmental Panel on Climate Change (IPCC) which was created by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP) in 1988 published a series of reports and assessments to provide governments with backgrounds and options for national adaptation and mitigation policies (IPCC, 2022).

In particular, the Special Report on Global Warming 1.5°C adopted by the Intergovernmental Panel on Climate Change (IPCC) in 2018 during its 48th Session proposes a pathway that can reduce the global net CO₂ emissions by 45 percent in 2030 compared to 2010 levels, achieve net-zero by 2050, and limit global warming by 1.5°C by 2100 (the Government of the Republic of Korea, 2020b, 6). The report presents scientific evidence for anthropogenic global warming and its correlation with the surge of devastating disasters and extreme weather conditions such as wildfires, heatwaves, floods, typhoons, and snowstorms (the Government of the Republic of Korea, 2020b, 6).

Likewise, the Republic of Korea (hereinafter, South Korea) is experiencing such phenomenon with an increased average temperature reaching 1.4°C over the past 30 years (the Government of the Republic of Korea, 2020b, 6). In South Korea, climate change governance was not prioritized due to its focus on economic development until when President Lee Myung-bak announced “Low Carbon Green

Growth” as a salient national agenda in 2008 which signaled South Korea’s shift towards climate change governance.

With this backdrop, this research paper aims to follow the development of South Korea’s climate change governance for the past three administrations - Lee Myung-bak (2008-2013), Park Geun-hye (2013-2017), and Moon Jae-in (2017-2022) to identify and describe how each administration implemented its own climate change governance and policies. The agenda-setting theory and the framework for conceptualizing the modes of governance as stipulated by John W. Kingdon and Driessen et al. (2012) respectively will be referred to describe how climate change governance emerged as a key national agenda. In particular, this research will look closely into development of South Korea’s legal and institutional basis for steering climate change governance and policies. Then, the conceptual framework for differentiating modes of governance elaborated by Driessen (2012) will be used to define the mode of climate change governance for each administration and identify any notable characteristics.

Keyword : Governance, Climate Change Governance, agenda-setting theory, modes of governance

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Chapter 1. Introduction

1.1. Background

According to the Synthesis Report of the Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report (AR6), climate change and global warming induced by human activities are inflicting detrimental impacts on human lifestyle, consumption and production, ecosystem, and economic growth with growing intensity and magnitude (IPCC, 2023, 10-11). As a result of rapid increase of anthropogenic Greenhouse Gas (GHG) emissions, global surface temperature increased by 1.1 degree Celsius from 2011 to 2020 which is a higher figure compared to that of from 1850 to 1900 (IPCC, 2023, 6). The amount of global net anthropogenic GHG emissions is estimated to be “ 59 ± 6.6 GtCO₂-eq in 2019, about 12% (6.5 GtCO₂-eq) higher than in 2010 and 54% (21 GtCO₂-eq) higher than in 1990” (IPCC, 2023, 8).

The increase of GHG emissions and global temperature has led to serious socioeconomic, environmental, and health issues such as climate change, economic recession, poverty, displacement, food insecurity, infectious diseases, disasters, loss of biodiversity, and other threats (IPCC, 2023, 15-17). According to the IPCC’s Special Report on the Impacts of Global Warming of 1.5°C, anthropogenic GHG emissions have already caused a rise of global warming from 0.8°C to 1.0°C above pre-industrial levels (IPCC, 2018, 4-5). According to the report, the global warming will reach 1.5°C between 2030 and 2052 at current rate (IPCC, 2018, 4). In addition, the report serves as a scientific assessment and projection which addresses the challenges that the humanity will face under global warming of 1.5°C above pre-industrial level with a comparison to global warming of 2.0°C (IPCC, 2018, 4-5). In

particular, the report warns about dire climate change issues that arise from global warming and GHG emissions such as sea-level rise, floods, droughts, heatwaves, loss of biodiversity, and food and water security (IPCC, 2018, 4-9).

Given such contexts, countries have taken rigorous climate mitigation and adaptation policies and strategies to tackle global warming and climate change issues. However, climate change, as Gupta (2016, 192) puts it, is a “complex, uncertain, and nonlinear, possibly a super-wicked” problem which requires a holistic and cross-sectoral approach supported by scientific and practical solutions. In addition, climate change necessitates a collaborative approach which engages various stakeholders from governments, international organizations, businesses, civil societies, and academia to find appropriate solutions for complex issues such as climate change (Knieling & Filho, 2013, 1-2).

With this backdrop, climate change governance emerged as an inevitable and imperative concept to enable governments “to take an active role in bringing about shifts in interest perceptions so that stable societal majorities in favour of deploying an active mitigation and adaptation policy regime can be maintained” (Knieling & Filho, 2013, 1-2). With an emergence of this new policy paradigm, the Republic of Korea (hereinafter ‘South Korea’) was also put in a position to take measures on climate change issues. However, South Korea did not immediately react to climate change issues as the country was undergoing rapid economic and industrial development with a basis on carbon-intensive industries such as heavy metals, shipbuilding, and manufacturing. South Korea’s disinterest to climate change issues continued even after the adoption of the Kyoto Protocol in December 1997 and its implementation in 2005 (Kalinowski, 2021, 50). South Korea’s climate change governance emerged as a national agenda in 2008 under the President Lee Myung-

bak when the government began to implement climate mitigation and adaptation policies with economy-driven means (Kalinowski, 2021, 50).

Despite the efforts, South Korea became the world's eleventh largest economy and the seventh largest carbon dioxide (CO₂) emitter in 2018 (Kalinowski, 2021, 50). Moreover, the World Resources Institute (WRI) ranked South Korea as the 12th largest GHG emitter in the world in 2019 (Friedrich et al., 2023). As a result, South Korea's annual CO₂ emission increased from 276 million tons in 1992 to 589 million tons in 2016, which is a biggest increase among the Organisation for Economic Co-operation and Development (OECD) countries (Kalinowski, 2021, 50). In the same period, the average CO₂ emission per capita increased from 6.3 tons to 11.5 which is well above the OECD average at 9 tons per capita (Kalinowski, 2021, 50). The Korea Meteorological Administration estimated that the projected increase of temperature of the Korean peninsula will be 4.7°C accompanied by more frequent extreme weather conditions (Government of the Republic of Korea, 2020b, 17).

In the face of these concerning projections, South Korea has taken various efforts to implement policies that aim to address the global climate change issues especially when President Lee Myung-bak (2008-2013) proclaimed 'Low Carbon Green Growth' as the key national agenda in 2008. Following the announcement, the government enacted the Framework Act on Low Carbon Green Growth in 2010 to establish legal and institutional framework in support of the agenda. Since then, South Korea's climate change governance underwent a series of transformation under the Park Geun-hye administration (2013-2017) and Moon Jae-in administration (2017-2022).

South Korea's pursuit of climate change governance following the pledge to achieve a low carbon and carbon neutral society is particularly notable given its

economic status as a ‘developing’ country compared to other developed countries which are formulating its climate change policies based on well-established economy and multilateral cooperation. For instance, South Korea was the first non-Annex 1 country categorized by the Kyoto Protocol to announce national voluntary GHG emissions reduction goals in 2008 even though it was not mandatory (Kalinowski, 2021, 50). With this backdrop, this research paper will unravel South Korea’s progress of climate change governance during the past three administrations (Lee Myung-bak, Park Geun-hye, and Moon Jae-in administration) from 2008 to 2022 by examining the agenda-setting process and identifying the modes of climate change governance with a scope on South Korea’s legal and institutional frameworks that provide a foundational basis for its climate change policies.

1.2. Research Question

This research paper is based on several research questions related to the development of South Korea’s climate change governance. Why did South Korea demonstrate strong political will on implementing policies on green growth and climate change in midst of its economic development which is based on carbon-intensive industries? What political and social factors influence the agenda-setting process? Are there any notable differences in climate change governance for each administration? How can the modes of climate change governance be defined? Most importantly, how did the legal and institutional frameworks that served as the foundation for South Korea’s climate change governance change over time? Based on these research questions, this research will analyze South Korea’s climate change governance in the past three administrations qualitatively using the agenda-setting

theory conceptualized by John W. Kingdon and the modes of governance described by Driessen et al. (2012).

1.3. Research Purpose and Expectations

The main purpose of this research is to explore how South Korea's climate change governance have progressed and transformed during the Lee Myung-bak (2008-2013), Park Geun-hye (2013-2017), and Moon Jae-in Administration (2017-2022). This research is expected to achieve largely three objectives. First, the research will provide a comprehensive qualitative literature review and analysis on South Korea's climate change governance and policies during the given period. Second, the research will describe how 'climate change' emerged as a national agenda and how the related policies and frameworks were governed during each administration. Lastly, the research will describe unique characteristics of South Korea's climate change governance. Consequently, the research will be able to enrich a qualitative literature on the development of South Korea's climate change governance and describe how each administration pursued its related policies.

The topic, scope, and timing of the research are particularly timely as South Korea, and the globe as well, is confronting extreme challenges resulting from climate crisis. Moreover, previous literature tends to focus on a specific timeframe or administration which does not fully capture the change in South Korea's climate change governance over time. Lastly, this research can capture a more comprehensive overview on South Korea's recent trends on climate change governance and suggest implications for current and future laws, institutions, and policies for coping with climate change issues.

Chapter 2. Research Scope, Methodology, and Model

2.1. Research Scope and Methodology

The main scope of this qualitative research is to describe how legal and institutional frameworks for South Korea's climate change governance have changed during Lee Myung-bak (2008-2013), Park Geun-hye (2013-2017), and Moon Jae-in (2017-2022) administration. Examination of legal and institutional frameworks is critical for understanding South Korea's climate change governance as they play a significant role in shaping the modality of climate change governance by serving as a powerful driver of change and enforcing mechanism in the policy arena (World Bank Group, 2017, 13). Hence, an observation on the laws and institutional frameworks will hint the characteristics of climate change governance for each administration. The major legal and institutional frameworks on climate change established during each administration is shown in Table 1.

Table 1. Legal and institutional frameworks on climate change

Administration	Legal Framework	Institutional Framework
Lee Myung-bak Administration	Framework Act on Low Carbon Green Growth (2010)	Presidential Commission on Green Growth
Park Geun-hye Administration	Framework Act on Low Carbon Green Growth (2013)	Prime Minister's Committee on Green Growth
Moon Jae-in Administration	Framework Act on Carbon Neutrality and Green Growth for Coping with Climate Crisis (2021)	2050 Carbon Neutrality and Green Growth Committee

Before scrutinizing the legal and institutional frameworks, the theoretical frameworks developed by John W. Kingdon and Driessen et al. (2012) will be visited to describe key concepts of governance, climate change governance, and modes of governance as means to provide conceptual background of the research topic. This includes an extensive literature review on previous qualitative research which describe the history of South Korea's climate change governance. As climate change governance incorporates a wide variety of actors and dimensions, there is no definite way of determining the climate change governance. The climate change governance can be assessed and evaluated by examining its government budget and expenditure, a number of rules and regulations, public-private-partnerships, monitoring and evaluation processes, transparency and accountability, and public awareness and participation. Nevertheless, this research will focus on legal and institutional aspect of climate change governance.

The importance of the correlation and interdependency between governance and law has already been stressed in various studies. Rahmani and Koohshahi (2013, 9-10) write that “well functioning legal institutions and governments bound by the rule of law are, in turn, vital to good governance”. They further elaborate that weak legal system can undermine the progress towards sustainable development and may even foster environmental degradation (Rahmani and Koohshahi (2013, 10). Henstra (n.d.) also emphasizes the importance of statute law as a powerful tool for policy coordination particularly on mainstreaming national climate mitigation and adaptation policies by expatiating its functions “to allocate policy responsibilities, redefine agency mandates, clarify legal liabilities, and create new mechanisms” (Henstra, n.d., 10). For instance, 2008 Climate Change Act enacted in the United Kingdom serves as a foundational legal basis for the government's climate change

policies and programs (Henstra, n.d., 11). Through the Act, the government established implementation tools, entrenched new institutions, and enhanced the capacity for long-term planning of climate change governance (Henstra, n.d., 11). Similarly, the government of Canada mainstreamed climate change governance and related National Adaptation Strategies after the enactment of the Canadian Net-Zero Emissions Accountability Act in 2021 (Henstra, n.d., 11).

With this background, the research will explain how climate change emerged as a key national agenda in South Korea, how it led to the enactment of affiliated laws and institutions, and which modes of climate change governance was utilized by analyzing the contents and enactment of the laws, interactions between the state, private sector (market), and civil society on a legal level, and how the laws influenced the operation, composition, functions, roles, and authority of climate change-related government institutions. Through these conceptual and theoretical frameworks, the research will be able to provide a comprehensive overview on the development of South Korea's climate change governance.

2.2. Research Model

For the research, Kingdon's multi-stream framework (MSF) for agenda-setting process will be applied to describe how climate change governance emerged and evolved as a national agenda during each administration. The model for MSF is shown in Figure 1. Then, the mode of governance for each administration will be assessed by referring to a conceptual framework developed by Driessen et al (2012) as shown in Figure 2. This research framework is designed to identify actor features, institutional features, and features concerning content by examining South Korea's

climate change-related legal and institutional bases. Through the mode, the dynamics of state (S), private sector (M), and civil society (CS) can be scrutinized by identifying the relationships between the actors into dominant, equivalent, and background role to determine the modes of governance. Consequently, this research will unravel how the climate change governance developed during Lee Myung-bak (2008-2013), Park Geun-hye (2013-2017), and Moon Jae-in (2017-2022) administration while identifying distinctive features of climate change governance.

Figure 1. Multiple Streams Framework (MSF) for agenda-setting

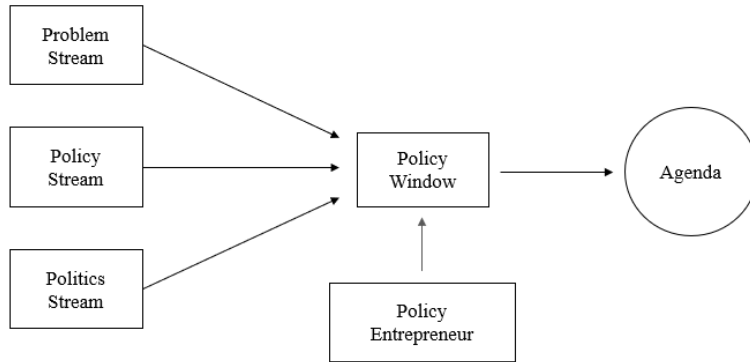
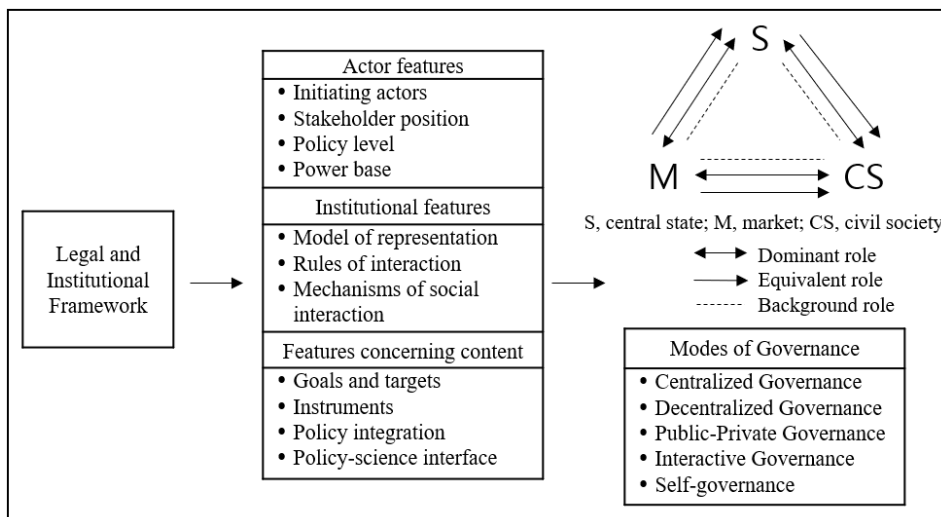


Figure 2. Research framework for differentiating modes of governance



Chapter 3. Literature Review

3.1. Conceptualization of Governance

The concept of ‘governance’ emerged as a pivotal concept in political science, international development, sustainability science, and other fields due to growing complexity of societal issues that cannot be solely managed by governments (Lange et al., 2013, 404). The concept of governance proposed a new paradigm and perspective on public administration and a whole-of-government approach during the 1980s to cope with various political, economic, and social issues facilitated by globalization that cannot be solely addressed by the government (Lee, Jung & Choe, 2018, 77).

The literature on governance asserts that addressing such complex issues has become a shared responsibility among governments, businesses, non-governmental organizations, and civil societies (Lange et al., 2013, 404), involving a wide range of stakeholders and institutions in the process of governing globalization (Lee, Jung & Choe, 2018, 77). According to Duit and Galaz (2008, 311), “climate change, technological innovation, the spread of pandemic diseases, and rapid fluctuations in world markets all challenge a linear, scale-free, and static worldview that has guided large parts of the scientific study of society and politics”. In addition, Duit and Galaz explain that current global trends and challenges are no longer predictable and static, and thus require much more holistic, sophisticated, and adaptive conceptual framework that can encompass all levels of society that can cope with increasing “speed of interactions and the multiplication of linkages” within the government (Duit and Galaz, 2008, 311-312).

Traditionally, ‘governing’ was understood as a way of steering and managing

societal issues through state intervention and formal institutions (Lange et al., 2013, 406). On the contrary, the concept of ‘governance’ is an extended version of ‘governing’ which refers to multilateral, yet non-hierarchical processes characterized by multi-actor interactions between public and private entities to achieve collective goals (Lange et al., 2013, 406). However, Lange et al. (2013) articulates that such generalized description of the shift from government to governance “is too superficial and represents an oversimplification” of the concept (Lange et al., 2013, 407-408).

Rhodes (1996, 652-653) explains that governance “signifies a change in the meaning of government” indicating a new way of governing. According to Rhodes, governance has six distinctive usages as the minimal state, as corporate governance, as the new public management, as good governance, as a socio-cybernetic system, and as self-organizing networks (Rhodes, 1996, 653). Based on this new governing structure, Rhodes argues that the delivery of public services to the people is now based on a decentralized form of networks between government and other actors characterized by trust and mutual adjustment (Rhodes, 1996, 653).

To further enrich the conceptualization of governance, Lange et al. identifies three dimensions of governance – politics, polity, and policy – and illustrates the framework as shown in Figure 2 (Lange et al., 2013, 410-412). From this framework, Lange et al. stress that the mode governance can be defined by observing the key features of governance (actors, resources, institutions, norms, and policy objectives and instruments) and interactions among politics, polity, and policy realm (Lange et al., 2013, 412). Table 2 shows definitions of governance stipulated by different scholars in their studies.

Table 2. Definitions of governance by different scholars

Scholars	Definition of Governance
Lange et al. (2013)	Refers to multilateral, yet non-hierarchical processes characterized by multi-actor interactions between public and private entities to achieve collective goals.
Duit & Galaz (2008)	Defines it as a holistic, sophisticated, and adaptive conceptual framework which encompass all levels of society as a means to cope with increasing “speed of interactions and the multiplication of linkages” within the government
Rhodes (1996)	Asserts that governance is a decentralized form of networks between government and other actors determined by a level of trust and mutual adjustment
Mayntz (2004)	“Conceives governance as a rule that shapes the actions of social actors” (Treib, Bähr, & Falkner, 2007, 3).
Jordan and Schout (2006)	Describes governance as a process of co-ordination within networks (Treib, Bähr, & Falkner, 2007, 3).
Heritier (2002)	Defines governance as a ‘mode of political steering’ with a focus on the policy dimension (Treib, Bähr, & Falkner, 2007, 4).
Gross (2005)	Refers to the level of transparency of public administrations for ascertaining mode of governance (Treib, Bähr, & Falkner, 2007, 5).

3.2. Conceptualization of Climate Change Governance

The term ‘climate change governance’ is widely used in diverse contexts with different meanings depending on the sector. The World Bank defines ‘climate change governance’ as a system which “uses institutions to address governance failures, strengthen incentives, and build capability for climate action” (World Bank, 2022). In this context, institutions include not only legislation and policies on a local and national level, but also international agreements and commitments established by

international organizations.

From an academic perspective, Jörg Knieling and Walter L. Filho write that “climate change governance is an emerging area, and one which is closely related to state and public administrative systems and the behaviour of private actors, including the business sector, as well as the civil society and non-governmental organisations” and “takes into account principles of accountability, management and institutional strengthening, which are applied when tackling the various challenges posed by climate change” (Knieling & Leal Filho, 2013, 1). Knieling and Leal Filho add that climate change governance consists of steering mechanisms that encompass both informal cooperation between institutions and hierarchical forms of regulations among formal actors (Knieling & Leal Filho, 2013, 1). Hence, they conclude that climate change governance is an array of coordinating methods for advancing climate adaptation and mitigation measures. The methods include mobilization of public administration, private sector, and other stakeholders involved in formulating and implementing climate change policies (Knieling & Leal Filho, 2013, 1).

Lee et al. (2018) also accentuate the multi-sectoral nature of climate change governance and refer to it as “a wide array of relationships among actors regarding public policies on climate change adaptation and mitigation” (Lee et al., 2018, 77). In the analysis, Lee et al. (2018) describes two types of governance – multi-level and collaborative governance. The multi-level governance focuses on the interactions between different levels of government agencies particularly on the relocation and delegation of authority from central government to local government (Lee et al., 2018, 77-78). On the other hand, collaborative governance is characterized by a collaborative decision-making process in which public, private, and civil sector have relatively equal share in policymaking and coordination (Lee et al., 2018, 78). Such

democratic policymaking process can ensure a high level of trust, legitimacy, and transparency of its outcome (Lee et al., 2018, 78).

According to Fröhlich and Knieling (2013, 10), the magnitude and multitude of possible impacts of climate change require cooperation from various stakeholders and spheres to properly cope with the anticipated issues. Hence, climate change governance deliberates on the complex relationships between state, stakeholders (businesses and civil societies), and instruments of coordination (Fröhlich and Knieling, 2013, 10). Fröhlich and Knieling further explains that there are specific demands for climate change governance: i) boundary-, level- and sector-comprehensive requirements, ii) diversity of stakeholders, iii) longevity, and iv) uncertainty (Fröhlich and Knieling, 2013, 11-12).

First, climate change governance is not restricted to one specific area of expertise and requires a comprehensive and cross-sectoral approach that can integrate and coordinate proposals and solutions for climate change issues (Fröhlich and Knieling, 2013, 11). Second, given its cross-sectoral nature, climate change governance involves multistakeholder engagement. This implies that there is no single ideal form of governance, policy, and solution that can address the issue (Fröhlich and Knieling, 2013, 11). Therefore, climate change governance highlights the shared responsibilities and roles of government, private sector, NGOs, and civil societies (Fröhlich and Knieling, 2013, 11-12). Third, climate change issues are dynamic given its long-term nature. Hence, climate change governance can be altered by changing politics, public awareness, and intergenerational thinking which makes it much more susceptible to relatively short-term cycles of politics and policy arena (Fröhlich and Knieling, 2013, 12). Lastly, climate change governance is more difficult to handle due to its high degree of uncertainty deriving from sensitivity of

climate system, vagueness of climate projections, and insufficient decision-making processes (Fröhlich and Knieling, 2013, 12). Based on these characteristics, Fröhlich and Knieling (2013, 21) describe climate change governance as a “broad range of forms of coordination concerning climate change adaptation and mitigation” involving a wide spectrum of steering mechanisms.

The Oxford Policy Management proposes a model for assessing climate governance which consist of three themes and seven dimensions. Although this model is not unique to climate governance, the framework helps to grasp how the status of climate change governance is shaped in a country (Gogoi, 2018, 2). The three themes are foundations, stakeholders, and mainstreaming and seven dimensions are evidence base, policy framework, awareness and understanding, political commitment, participation and influence, institutional capacity, and finance and investment.

The private sector takes more economic approach in defining climate change governance. According to KPMG, “climate governance is the structure of rules and processes a company puts in place to manage its responses to the financial risks and opportunities of climate change” (KPMG, 2022). As apparent in the description, private sector emphasizes financial aspects of climate change and accentuates minimizing potential risks and negative impacts on a company’s revenue and investments. KPMG identifies two types of climate-related risks: physical and transitional risks (KPMG, 2022). The physical risks refer to actual effects or damages inflicted on company’s supply chains due to disasters facilitated by climate change such as flood, drought, and hurricanes (KPMG, 2022). On the other hand, transitional risks occur due to company’s inability to adapt to market transformations facilitated by global transitions towards more low-carbon and greener economy (KPMG, 2022).

Consequently, climate change governance, from a private sector, is inevitably economy- and market-based.

Given these contextual backgrounds, this research will adopt the definition used by public sector and academia as the approach taken by private sector is narrowly focused and prioritizes corporate risks and opportunities. Hence, *climate change governance* will be defined as a ‘way of governing and steering the process for developing climate change policies and initiatives through multi-level and cross-sectoral interactions between state and non-state actors’.

3.3. Agenda-setting Theory

According to Kingdon (2015, 196), the term ‘agenda’ refers to “a list of subjects to which officials are paying some serious attention at any given time”. This ‘agenda’ can be divided into general and specialized agenda depending on which interest groups are involved. Therefore, ‘agenda-setting’ can be defined as a process of narrowing the list of all conceivable subjects that the government intends to pay special attention to (Kingdon, 2015, 196). Thus, Kingdon proposes the ‘Multiple Stream Framework’ (MSF) consisting of *problem stream*, *policy stream*, and *politics stream* as a conceptual framework for explaining how these streams are ‘coupled’ into a certain agenda and thus receives special attention from the government among other existing subjects. Kingdon’s MSF is used widely particularly in the field of public administration and public policy to understand the complexity of agenda-setting process and define factors that facilitate the process. Kingdon’s framework is illustrated in Figure 2 (Kingdon, 2015, 197-201).

Kingdon asserts that each stream is developed independently according to their

own rules, timing, and flow. Then, the streams are coupled when a pressing problem, also known as ‘policy window’, demands a new policy direction and merges the streams into an agenda (Kingdon, 2015, 201). For instance, when there is an existing policy challenge or societal issue (problem stream), new administration or a ruling party (politics stream) can initiate a set of policies and proposals (policy stream) that are considered as appropriate solutions for the issue. From the model, Kingdon emphasizes the role of ‘policy entrepreneur’ who can facilitate the coupling process by taking “advantage of political receptivity at certain points in time to push the package of problem and solution” (Kingdon, 2015, 201-202).

Ultimately, Kingdon’s agenda-setting theory based on MSF is designed to provide logical and theoretical explanations for the following questions – why are some agendas are prioritized? Why are some neglected? How do different participants and stakeholders affect the agenda-setting? (Kingdon, 2015, 196). Kingdon also makes a distinction between agenda and alternatives but asserts that the line between agenda and alternatives cannot be drawn sharply as scholars have different ways of distinguishing and defining them (Kingdon, 2015, 4). Hence, this research will only refer to the MSF model for analyzing the agenda-setting process particularly on how climate change emerged as a national agenda in South Korea. Kingdon’s agenda-setting theory and MSF is widely used across the sectors including governmental and non-governmental as a framework for analyzing how an agenda is set and implemented.

Problem Stream

In the political arena, policy problems emerge mainly through systematic indicators monitored by governmental and non-governmental agencies from various

sectors such as “highway deaths, disease rates, immunization rates” etc. (Kingdon, 2015, 90). Other sources and instruments of monitoring include government expenditure and studies conducted by researchers and academics. However, these indicators are not necessarily the primary determinants of problems but are variables that can be interpreted or translated into issues by a ruling party or decisionmakers. Furthermore, these indicators can help the decisionmakers to assess the magnitude of the issues (Kingdon, 2015, 91). While monitoring the indicators, the government can identify and prioritize the list of problems that should be addressed. Once the decisionmakers recognize a problem, the government can exaggerate and construct the related indicators to receive public consensus and recognition on its urgency and seriousness (Kingdon, 2015, 93). Hence, the interpretations may be manipulated to highlight specific issues that the government aims to address though the indicators may be factual (Kingdon, 2015, 94).

The problem can receive more attention when a focusing event (policy window) emerges. The focusing event can be a national or international event, disaster or crisis which can serve as a powerful symbol for stimulating the problem (Kingdon, 2015, 95). Nevertheless, the symbol can be affected, though with insignificant amount of influence, from personal experiences of those who are closely associated to decision-making such as lobbyists and politicians (Kingdon, 2015, 95). Lastly, the problem can fade and lose its momentum when other problems emerge, people become indifferent to the problem, or the decisionmakers fail to resolve the problem (Kingdon, 2015, 103-104).

Policy Stream

In the policy realm, there are various stakeholders including researchers,

government officials, analysts, other interest groups. These groups, or ‘policy communities’ as Kingdon elaborates, express their policy interests and priorities by publishing articles, submitting legislative proposals, and organizing public hearing (Kingdon, 2015, 116-117). Kingdon argues that some of these policy communities are more fragmented than the others. For instance, he asserts that transportation community are far more fragmented than health communities as the sector is divided into modes each with different policy priorities and interests such as public transport, railroad, aviation, highways, and waterways (Kingdon, 2015, 117-118). Meanwhile, health community is an interdependent community in which different interest groups – health specialists, researchers, insurance advocates, lobbyists, and budget-makers – share common agenda. Such community is “tightly knit” and interacts with one another through seminars, conferences, forums, and other quasi-social meetings (Kingdon, 2015, 118).

According to Kingdon, fragmented policy communities have two severe flaws – policy fragmentation and policy disintegration (Kingdon, 2015, 118). First, when communities are fragmented, policies developed within the same policy community may severely affect each other without knowing the implications on other interest groups. As Kingdon writes, “the left hand knows not what the right hand is doing, with the result that the left hand sometimes does something that profoundly affects the right hand, without anyone ever seeing the implications” (Kingdon, 2015, 119). Second, fragmented policy communities are less likely to develop common values, paradigm, and priorities. In such cases, policies become disjointed, incoherent, and inconsistent (Kingdon, 2015, 119-120).

In the policy stream, various policies are proposed and advocated by different policy communities. Only few of these policy proposals are seriously considered

after undergoing a process of natural selection (Kingdon, 2015, 143). Although the policy communities do not easily accept new policy ideas and paradigms, policy entrepreneurs can ‘soften up’ the process and help specific policy initiatives to receive more attention than others (Kingdon, 2015, 143). In addition, Kingdon writes that the proposals and initiatives must be technically feasible and should consider a number of aspects such as proper role, size of government, equity, and efficiency. Meanwhile, the proposals can face constraints that can hinder its survival such as budget and public acceptance (Kingdon, 2015, 143).

Political Stream

The political stream consists of components such as national mood, pressure groups, election, partisanship, and changes of administration which plays a critical role in the agenda-setting process (Kingdon, 2015, 145). Kingdon uses the term ‘political’ in a narrowly focused parlance which is used to describe how politicians, voters, and partisans interact in the policymaking process (Kingdon, 2015, 145). According to Kingdon, there are three components for the political stream – national mood, organized political forces, and government (Kingdon, 2015, 146).

The term ‘national mood’ refers to the “notion that a rather large number of people out in the country are thinking along certain common lines” (Kingdon, 2015, 146). The national mood is determined by people in and out of government and changes periodically. Such changes in the national mood have significant on policy agendas and outcomes regardless of policy communities. Therefore, certain policy proposals may not become an actual agenda simply due to an inappropriate national mood (Kingdon, 2015, 146-148). However, national mood is not fully dependent on mass public because key social movements which determine the national mood

require organization and leadership to have a policy impact.

In some cases, successful social movements occur regionally and are led by a handful of activists and partisans (Kingdon, 2015, 148-149). Nevertheless, the social movements can have influence on mass public and their voting decision (Kingdon, 2015, 149). The decisionmakers and politicians can perceive national mood through various communication channels such as media, visits, and informal conversation. (Kingdon, 2015, 162-163). Ultimately, national mood affects policies and agendas by either advocating or impeding attention to certain agendas and items (Kingdon, 2015, 162-163).

The second component of political stream is ‘organized political forces’ consisting of interest group pressure, political mobilization, and the behavior of political elites (Kingdon, 2015, 150). When organized political forces and interest groups share common values and ideas, it can be a powerful impetus for policymaking and agenda setting (Kingdon, 2015, 150). However, if there is a disagreement, it may work against “the emergence of an item to agenda prominence”. Kingdon adds that the balance of organized forces often mitigates changes as current beneficiaries of policies and agendas are reluctant to concede policies that are favorable to them (Kingdon, 2015, 163). Therefore, the balance of organized political forces, either support or opposition, cannot fully guarantee policy outcomes (Kingdon, 2015, 152-3). The last component of the political stream is ‘government’ and its related events such as changes, or ‘turnover’ as Kingdon puts it, in administration, partisan distribution in Congress, and interest group pressure campaigns (Kingdon, 2015, 153). The changes within the government have powerful effects on agendas by shifting policy orientation and priorities.

Policy Window

“Policy window is an opportunity for advocates of proposals to push their pet solutions, or to push attention to their special problems” (Kingdon, 2015, 165). Kingdon explains that the advocates float in and around the government with their own policies and solutions until they recognize a window of opportunity to push forward their initiatives (Kingdon, 2015, 165). Policy windows can occur at problems (focusing event or disaster) stream and political (change in administration) stream which provide an acceptable or receptive climate for certain initiatives to be seriously considered (Kingdon, 2015, 195). The opening and closing of policy window can be both predictable and unpredictable and is often short-lasting and may pass by (Kingdon, 2015, 195).

Coupling of Streams

As mentioned earlier, various policy proposals and solutions ‘float around’ the government waiting to be adopted or elevated as an agenda through a focusing event such as a shift in national mood, change in administration, and a crisis (Kingdon, 2015, 172). Hence, an agenda emerges when a window of opportunity couples policy proposals and solutions (policy stream) with emerging pressing issues (problem stream) during the time of political exigencies (political stream) (Kingdon, 2015, 173). The policy entrepreneurs can facilitate the coupling process by advocating certain policy proposals to be coupled with the issues (Kingdon, 2015, 172).

Although coupling of two streams is sufficient to form a *governmental* agenda, the coupling of all three streams increases the probability of an emergence of a *decision* agenda drastically (Kingdon, 2015, 178). The key difference between governmental agenda and decision agenda is that governmental agenda refers to a

subset of agendas that receive attention while the decision agenda refers to a subset of agendas that are bound for active decision (Kingdon, 2015, 201-202).

Policy Entrepreneur

Policy entrepreneurs are defined as “advocates who are willing to invest their resources – time, energy, reputation, money – to promote a position in return for anticipated future gain in the form of material, purposive, or solidarity benefits (Kingdon, 2015, 179). The entrepreneurs play a critical role in coupling different streams into an agenda by introducing a new agenda or elevating the status of certain agenda (Kingdon, 2015, 195).

According to Kingdon, there are three qualities of entrepreneur. First, an entrepreneur should have some level of credibility and claim to hearing by meeting one of the following qualifications: an expert, a leader of powerful interest group or a powerful decisionmaker (Kingdon, 2015, 180). Second, an entrepreneur should have well-established political connections and proven negotiating skills (Kingdon, 2015, 180). Lastly, a policy entrepreneur should be persistent and willing to dedicate its resources and time (Kingdon, 2015, 181).

Green (2017, 1478) further discusses that policy entrepreneurship is also applicable in climate change area by referring to how the Reducing Emissions from Deforestation and Degradation (REDD), an international framework created by the UNFCCC Conference of the Parties (COP) to facilitate activities in forest sector, became a central initiative and component in the international climate regime through the process of framing, coalition building, and softening by various NGOs and private regulators (Green, 2017, 1474, 1478-1479). As a result, forestry offsets, which was initially excluded from Clean Development Mechanism (CDM) became

a crucial policy instrument in GHG emissions through an active policy entrepreneurship by non-state actors (Green, 2017, 1478-1479).

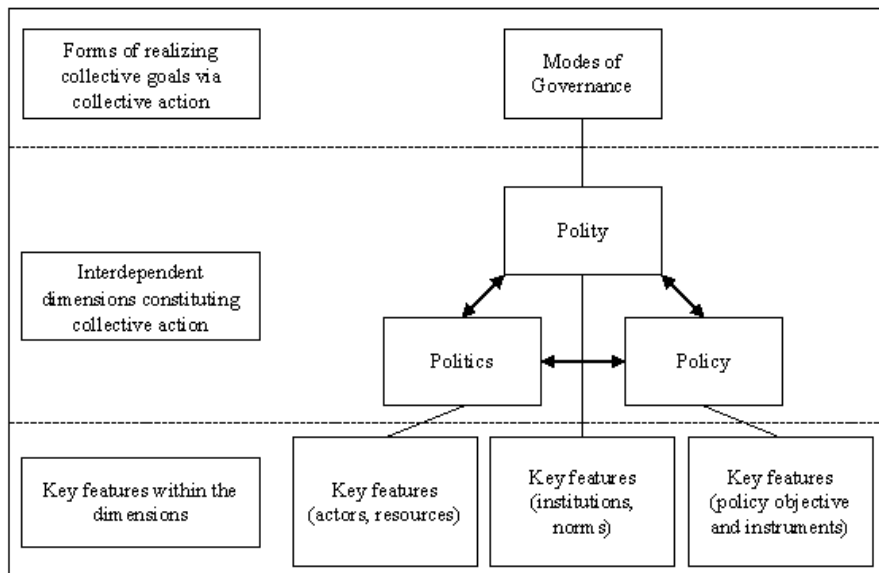
3.4. Frameworks for conceptualizing and differentiating modes of governance

Due to growing intensity and complexity of economic, social, and environmental issues posed to governments, ‘governance’ emerged as a key concept to understand the dynamics of managing non-hierarchical and cross-sectoral issues (Lange et al., 2013, 406). Lange et al. emphasizes that such ‘network arrangements’ can be defined as “complex multi-actor interactions across state, market and civil society and occur at multiple levels” in non-hierarchical forms which is different from a traditional way of addressing societal issues via government-centered approach (Lange et al., 2013, 406).

However, Lange et al., elaborates that the term ‘governance’ is now widely used and recognized even though there is no clear distinction of ‘modes of governance’ (Lange et al., 2013, 406). Some studies have generalized three general types of governance by differentiating them by hierarchy, market, and network. Nevertheless, Lange et al. explains that governance, in real-life, needs more sophisticated framework to fully grasp its dynamics (Lange et al., 2013, 406). Consequently, Lange et al. defines the modes of governance as “forms of realizing collective goals by means of collective action” and distinguishes key features and dimensions of governance by political processes, institutional structures, and policy content (Lange et al., 2013, 407). Other scholars also conceptualized the modes of governance by analyzing different stakeholders, dimensions and features of governance. Table 2

shows how the scholars differentiated the modes of governance. In particular, Lange et al. propose the ‘meta-framework for conceptualizing the modes of governance’ (hereinafter ‘meta-framework’) to explain how a mode of governance develops in the context of sustainable development in the Figure 3 (Lange et al., 2013, 407).

Figure 3. Meta-framework for conceptualizing governance modes (Lange et al., 2013, 412)



According to Lange et al., the meta-framework is composed of three dimensions: politics, polity, and policy (Lange et al., 2013, 409). The *politics dimension* refers to the actors and interaction process of governance (Lange et al., 2013, 409). This dimension incorporates relationships between state- and non-state actors in the process of governance including the power dynamics and dependence of resources (Lange et al., 2013, 410). The relative interactions between state- and non-state actors can be categorized into four distinctive systems of governance: statism, pluralism, corporatism, and network governance (Lange et al., 2013, 410). The

degree of interactions is determined by the process of how societal issues and interests are translated into policies and policy-making processes.

The *polity dimension* is associated with the institutional aspect of governance which shape interactions among the actors (Lange et al., 2013, 409). The dimension is composed of institutions, norms, and procedural settings which constructs the ‘institutional architecture’ of policymaking processes (Lange et al., 2013, 410). The architecture is mostly shaped by the interaction between formal and informal institutions. Formal institutional interactions are conducted vis-à-vis official channels of policymaking mainly through governments. On the other hand, informal institutions refer to social and cultural norms that are implemented without legal basis and channels (Lange et al., 2013, 410-411). Based on this distinction, the modes of interaction on polity can be characterized by “hierarchical direction, majority vote, negotiated agreement and unilateral action” involving public and private, and domestic and international actors (Lange et al., 2013, 411).

Lastly, *policy dimension* refers to “objectives and instruments of political steering towards outputs” (Lange et al., 2013, 409, 411). Also, it is associated with the formulation of policy issues, implementation strategies, policy instruments, policy knowledge, and learning (Lange et al., 2013, 411). The dimension denotes the process of policy implementation such as coercion, voluntarism, targeting, and framework regulation (Lange et al., 2013, 409, 411). This includes different typologies of instruments (regulative, economic, and communicative) and forms of regulations (coercion, voluntarism, targeting and framing).

The meta-framework was further scrutinized and developed in various studies as a means to delineate the modes of governance (Lange et al., 2013, 411). Lange et al. introduces three frameworks developed by Arnouts et al. (2012), Hysing (2009),

and Driessen et al. (2012) (Lange et al., 2013, 412-415). In addition to these frameworks, Table 3 summarizes various modes of governance developed by different scholars in their studies and literature. Each typology focuses on different areas such as state to non-state actor power dynamics, types of rules and regulations, governing instruments, and level of integration between public and private sector.

Table 3. Typology on differentiating the modes of governance

Scholars	Typology on differentiating the modes of governance
Driessen et al. (2012)	Provides more compartmentalized model by assessing three features: actor features (initiating actors, stakeholder position, policy level, power base), institutional features (model of representation, rules of interaction, mechanisms of social interaction), and features concerning content (goals & targets, instruments, policy integration, policy-science interface) (Lange et al., 2013).
Arnouts et al. (2012)	Categorizes four types of governance into: hierarchical governance, closed co-governance, open co-governance, and self-governance by analyzing the actors (state and non-state), power (key feature of the relative power of between the actors), and rules (access rules and responsibility rules) (Lange et al., 2013).
Hysing (2009)	Refers to the intensity of state involvement for defining the modes of governance from direct state intervention to societal autonomy. The modes can be further differentiated by three dimensions: public-private partnerships, policy levels, and governing instruments and styles (Treib, Bähr, & Falkner, 2007, 3).
Schneider and Kenis (1996)	Explains that different modes of governance are positioned along the spectrum of market and hierarchy. Depending on the relative position on a continuum, three ideal-types of governance can be identified: community, associations, and networks (Treib, Bähr, & Falkner, 2007, 3)

In particular, this research will focus on the framework proposed by Driessen

et al. (2012) which characterizes five ‘ideal-typical modes of governance’ based on state and non-state actor engagement (Lange et al., 2013, 413). The approach identifies five modes of governance namely centralized governance, decentralized governance, public-private governance, interactive governance, and self-governance depending on three key features - actor base, institutional features, and features concerning content (Lange et al., 2013, 413, 416) (Driessen et al, 2012, 146-147). By using this model, Driessen et al. (2012, 143) described the modes of two environmental policy sectors (urban environmental policy and sustainable production and consumption) in the Netherlands between 1990 to 2010.

According to Driessen et al. (2012, 145), governance is a way of addressing collective action dilemmas through government regulation, privatization, or self-governance. Hence, the framework developed by Driessen et al. (2012) is designed to build typology of modes of governance by assessing the roles of and relations between state, private sector (market), and civil society. Depending on the roles and relations, the framework differentiates five modes of governance. In *centralized and decentralized governance*, either the central or local governments act as a main actor while the private sector and civil society are the recipients of incentives (Driessen et al. 2012, 145). In *public-private governance* and *interactive governance*, government cooperative either with the private sector or private sector and civil society respectively on an equal basis. Lastly, *self-governance* is discerned by governance through private and voluntary efforts and investments with predetermined autonomy given to the private sector and civil society by the government (Driessen et al. 2012, 145, 148). In order to make the distinction, the framework refers to three components – *actor features*, *institutional features*, and *features concerning content* – which are used to characterize complex social

arrangements and interactions (Driessen et al. 2012, 148).

According to the model, the actor base considers who is the main initiating actor (central government, multiple actors, or private and/or civil society), the relative position of other stakeholders, and the ruling policy level (local, national, international or multiple level), and basis of power (coercion, competitiveness, legitimacy or autonomy) (Driessen et al., 2012, 148) (Lange et al., 2013, 413). The institutional feature is related to model of representation (pluralist, corporatist, or partnership), rules and mechanisms (formal, informal, or institutions), and mechanisms of social interaction (top down, sub-national, private actors, interactive, or bottom up) (Driessen et al., 2012, 148) (Lange et al., 2013, 413). Lastly, the content focuses on types of goals (uniform or tailor made), predominant policy instruments (legislation, public covenants, incentive-based, negotiated agreements, or voluntary), level of policy integration (sectorial or integrated), and type of knowledge (Lange et al., 2013, 413). The components of each feature are listed in Table 4 (Driessen et al., 2012, 148).

Table 4. Features of modes of governance (Driessen et al., 2012, 148)

Features	Components of features
Actor features	<ul style="list-style-type: none"> • Initiating actors: Central government agencies (supranational), Subsidiarity, Private sector with autonomy, Multiple actors (state, private sector, civil society), Private sector and/or civil society • Stakeholder position (autonomy): Principal agency, High likelihood of stakeholder involvement, Market autonomy, Equal roles (network of partners), and Self-governing • Policy level: National state, Lower levels of government, Multiple levels, and Local to international level • Power base: Coercion, Authority, Competitiveness, and Legitimacy

Institutional features	<ul style="list-style-type: none"> • Model of representation: Pluralist (election and lobbying) - indirect involvement by public and stakeholders, Corporatist (formalized), Partnership (participatory) • Rules of interaction: Formal Rules, Formal and informal exchange rules. Institutions, Informal rules (norms, culture) • Mechanisms of social interaction: Top down, sub-national, private actors, and interactive (social learning, deliberations, negotiations)
Features concerning content	<ul style="list-style-type: none"> • Goals and targets: Uniform goals and targets, Uniform goals and level-specific, and Tailor-made and integrated goals and targets • Instruments: Legislation, Public covenants, Performance contracts, Incentive-based (taxes & grants), Negotiated agreements, Trading mechanisms, Voluntary instruments, Private contracts, entitlements, Labelling and reporting • Policy integration: Sectorial (policy sectors and levels separated), Sectorial (policy sectors separated), Sectorial (branches and industries separated), Integrated (policy sectors and levels integrated), and Sectorial and integrated • Policy-Science interface: Primacy of generic, expert knowledge, Room for issue, Time-and-place specific knowledge, Expert and lay (producers, consumers, and citizens), Trans-disciplinarity

In sum, the framework developed Driessen et al. (2012) can be illustrated in Table 5 as the ideal-typical model for identifying the modes of governance as elaborated by Driessen et al. (Lange et al., 2013, 411-417). This research will utilize this model to identify the modes of governance for South Korea's climate change governance by analyzing how its legal and institutional frameworks have influenced the interactions between state (public sector), market (private sector), and civil societies (NGOs). The component on 'policy-science interface' which is included in the model developed by Driessen et al. (2012) is excluded from this research as it is irrelevant to the research model.

Table 5. Modes of (environmental) governance and key features (Driessen et al., 2012, 146-147)

	Centralized Governance	Decentralized Governance	Public-Private Governance	Interactive Governance	Self-Governance
<p>S = Central State; M = Market; CS = Civil Society</p> <p>↔ = equivalent role - - - = background role → = dominant role</p>					
Initiating actors	Central government agencies (or supranational bodies)	Government at its levels of aggregation (subsidiarity)	Central government agencies; private sector is granted a preconditioned role q	Multiple actors: government, private sector and civil society	Private sector and/or civil society
Stakeholder position	Stakeholder autonomy determined by principal agency	High likelihood of stakeholder involvement	Autonomy of market stakeholders within predetermined boundaries	Equal roles for all network partners	Self-governing entities determine the involvement of other stakeholders
Policy level	(Supra)national state	Lower levels of government	Local to international level	Multiple levels	Local to international level
Power base	Coercion; authority; legitimacy (democratic representation at the national level)	Coercion; authority; legitimacy (democratic representation at lower levels)	Competitiveness (prices); contracts and legal recourse; legitimacy	Legitimacy (agreement on roles, positions, procedures, and process); trust; knowledge	Autonomy; leadership; group size; social capital; legitimacy

Institutional features	Model of representation	Pluralist (popular (supra) national election and lobbying)	Pluralist (popular local election and lobbying)	Corporatist (formalized public-private governing arrangements)	Partnership (participatory public-private governing arrangements)	Partnership (participatory private-private governing arrangements)
	Rules of interaction	Formal rules (rule of law; fixed and clear procedures)	Formal rules (rule of law; fixed and clear procedures)	Formal and informal exchange rules	Institutions in its broadest form (formal and informal rules)	Informal rules (norms; culture); self-crafted (non-imposed) rules
	Mechanisms of social interaction	Top down; command and control	Sub-governments decide autonomously; determined boundaries	Private actors decide autonomously; determined boundaries	Interactive: social learning, deliberations, and negotiations	Bottom up: social learning, deliberations and negotiations
Features concerning content	Goals and targets	Uniform goals and targets	Uniform goals; level specific targets	Uniform goals; actor-specific	Tailor-made and integrated targets	Tailor-made goals and targets
	Instruments	Legislation, permits, norms, and standards	Public covenants and performance contracts	Incentive-based; instruments such as taxes and grants; performance contracts	Negotiated agreements; trading mechanisms; entitlements	Voluntary instruments; private contracts; labelling and reporting
	Policy integration	Sectoral (policy sectors and levels separated)	Sectorial (policy sectors separated)	Sectorial (branches and industries separated)	Integrated (policy sectors and policy levels integrated)	Sectorial to integrated (problem framing by interest groups)

Chapter 4. South Korea's Climate Change Policies and Governance

4.1. Pre-2008

Prior to 1997, South Korea, as a developing country, was indifferent to environmental and climate change issues as the government prioritized economic development. Hence, the government accentuated the concept of 'common, but differentiated responsibilities' and asserted that the developed countries should take more responsibilities in climate action (Lee, Jung & Choe, 2018, 87). As a result, industrial, business, and civil sectors in South Korea also became neglectful of climate change issues (Lee, Jung & Choe, 2018, 87). Hence, there has not been a noticeable policy change or engagement on climate change issues in South Korea before 1997 (Lee, Jung & Choe, 2018, 88).

After the adoption of the Kyoto Protocol in 1997, South Korea established the Pan-governmental Organization for Climate Change Conference (POCCC), otherwise known as the Inter-Ministerial Committee on the UNFCCC (IMC), in 1998 (Lee, Jung & Choe, 2018, 88). The POCCC consisted of prime minister, ministers, and vice-ministers from nine ministries, working groups, and task forces. Through intra-governmental cooperation and interactions, the POCCC established the First Comprehensive Plan on Countermeasures to Climate Change Convention which is identified as South Korea's first extensive national action plan on climate change (Lee, Jung & Choe, 2018, 88).

The national plan is comprised of three action plans. The first action plan (1998-2001) consisted of 27 measures focusing on renewable energy and voluntary agreements with major energy suppliers and producers (Loher, 2012, 82). During the

second action plan (2002-2004), industries were encouraged to develop low-emission technologies and implement GHG emission reduction measures (Loher, 2012, 82). Lastly, the third action plan (2005-2008) focused on cross-sectoral shift towards climate adaptation and mitigation measures (Loher, 2012, 82). Despite these action plans, the responses from industrial and private sector were minimal as the initiatives were mostly non-legal binding and voluntary. For instance, the First Comprehensive Plan only encouraged major State-owned Enterprises (SOEs) such as the Korea Electric Power Corporation and the Pohang Steel Company to reduce energy consumption and develop low-carbon technologies without any legal obligations (Lee, Jung & Choe, 2018, 88). After the third action plan, the Office of Government Policy Coordination conducted an evaluation which revealed that only 13 percent of industries contributed to GHG reduction due to absence of national targets and public support on climate change (Loher, 2012, 82).

In addition, the South Korean government began to implement policies and initiatives to address global crisis on environment and resources in 2000 when President Kim Dae-jung established the Presidential Commission on Sustainable Development (PCSD) under a presidential decree (Korean Law Information Center, 2008) (Son et al., 2013, 525). The PCSD served as an advisory committee to facilitate and deliberate national sustainable development policies and follow up with the Agenda 21 adopted during the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro, Brazil in 1992 (Korean Law Information Center, 2008) (Son et al., 2013, 525).

The Agenda 21 was adopted by 178 countries to reflect “a global consensus and political commitment at the highest level on development and environment cooperation” to urge government, international organizations, and other stakeholders

to facilitate national strategies, initiatives, and policies at domestic and international level (United Nations, 1992, 3). The Agenda 21 also aimed to strengthen international cooperation to accelerate the progress for sustainable development specifically in developing countries (United Nations, 1992, 4).

Following the PCSD, the Framework Act on Sustainable Development was enacted in 2007 to provide an institutional framework for preparing and strategizing national basic plans and strategies on sustainable development (Kwon, 2013, 1). Despite the establishment of institutional frameworks, the actual policies and implementation plans that followed did not fully meet its expectations (Kwon, 2013, 1). Moreover, ‘climate change’ and ‘sustainable development’ did not evolve as the key national agenda since South Korea’s economic development and growth relied heavily on crude oil, liquified natural gas, and coal (Reiterer, 2022, 54).

Table 6. Overview of South Korea’s climate change policies before 2008

Pre-2008 Climate Change Policies	
Priority Area	<ul style="list-style-type: none"> • Economic Development
Legal Basis	<ul style="list-style-type: none"> • Framework Act on Sustainable Development (2008)
Key framework act, national action plans, and policies,	<ul style="list-style-type: none"> • First Comprehensive Plan on Countermeasures to Climate Change Convention (1999) • First National Basic Plan for Sustainable Development (2006-2010) • Voluntary GHG emissions reduction • Voluntary development and implementation of low-carbon technologies
Key institutions	<ul style="list-style-type: none"> • Pan-governmental Organization for Climate Change Conference (POCCC) (1998) • Presidential Commission on Sustainable Development (PCSD) (2000)
International frameworks	<ul style="list-style-type: none"> • Kyoto Protocol (1997) • Agenda 21 (1992)

4.2. The Lee Myung-bak Administration (2008-2013)

Climate change, or green politics as Duchel Shin defines it, was first set as the top national agenda during the Lee Myung-bak Administration (Konrad Adenauer Stiftung, 2015, 30). On 15 August 2008, President Lee Myung-bak formally declared “Low Carbon Green Growth” (LCGG) as a national agenda to catalyze economic development while reducing Greenhouse Gas (GHG) emissions (Chung & Lee, 2022, 2). During this period, South Korea was one of the largest GHG emitters among the Organisation for Economic Co-operation and Development (OECD) countries due to its energy intensive industries such as steel, chemicals, and shipbuilding. Furthermore, South Korea lacked capacity to supply its own energy and had to rely mostly on imports to meet energy demands (Chung & Lee, 2022, 2).

Nevertheless, President Lee shifted towards developing low-carbon and green economy as a new engine for economic growth while taking a global leadership on tackling climate change (Chung & Lee, 2022, 2) despite its status as a developing country and was not obligated to develop a national GHG reduction plan under the Kyoto Protocol (Reiterer, 2022, 54). In addition, the Lee administration enacted the Framework Act on Low Carbon Green Growth in 2008 to provide a legal basis for LCGG initiative, national climate change and adaptation, and sustainable development policies (Kwon, 2013, 4-5). Upon the enactment of the Framework Act on Low Carbon Green Growth, the Framework Act on Sustainable Development has practically lost its status (Kwon, 2013, 4). As a result, institutionalization of the Agenda 21 and sustainable development was suspended in South Korea as two framework acts had opposing ideas and objectives (Kwon, 2013, 4).

LCGG is composed of three elements which aims to 1) minimize use of energy

and resources while ensuring economic growth, 2) minimize carbon emissions through greener energy, infrastructure, and market, and 3) develop new engines for economic growth (Seong, 2011, 18). During his administration, President Lee established Presidential Commission on Green Growth (PCGG) to steer national policies and strategies to achieve a low-carbon society (Lee, Jung & Choe, 2018, 89). The PCGG developed and implemented several key climate actions in South Korea such as the LCGG, the Korean Emissions Trading Scheme (K-ETS), and a voluntary GHG emissions mitigation plan (Chung & Lee, 2022, 2-3).

The K-ETS is one of the Lee administration's notable policy achievements on climate action. Although the K-ETS was officially launched in 2015, two years after his term, the Lee Administration took immediate actions to prepare and place institutional and legal measures to implement the scheme (Chung & Lee, 2022, 3). In 2010, the Greenhouse Gas Inventory and Research Center (GIR) was established to support the K-ETS by collecting, managing, and analyzing data on national GHG emissions through more measurable, reportable, and verifiable mechanisms (Chung & Lee, 2022, 3). In addition, the Act on Allocation and Trading of Greenhouse Gas Emissions Allowance was enacted in 2012 as a legal basis for the K-ETS (Chung & Lee, 2022, 3). The K-ETS is acknowledged as the "second largest carbon market following the European Union and the first national mandatory ETS in East Asia" (Chung & Lee, 2022, 3).

Alongside these efforts, the Lee administration announced a voluntary mitigation and reduction goal of 30 percent from a Business-as-Usual (BAU) baseline by 2020 at the 2009 Conference of the Parties (COP) of the United Nations Framework for Climate Change Conference (UNFCCC) (Chung & Lee, 2022, 3). Such target goal is one of the highest levels as recommended by the International

Panel on Climate Change (IPCC) for a non-Annex 1 country categorized by the Kyoto Protocol (Chung & Lee, 2022, 3). While adhering to global responses and reduction goals, the government took further measures to enhance its international institutional capacity and leadership on climate change governance through the Global Green Growth Institute (GGGI), the Green Climate Fund (GCF), and G20 (Chung & Lee, 2022, 3). The GGGI is a treaty-based international organization launched in 2010 to advance global green alliance and support developing countries to develop and implement policies and strategies for green growth especially the Nationally Determined Contributions (NDCs) (Chung & Lee, 2022, 4). As of December 2022, the GGGI consists of 45 signatories (GGGI, 2023) and contributes substantively to the global climate change governance (Chung & Lee, 2022, 4). Likewise, the Lee administration also succeeded to host the Green Climate Fund in Incheon which is a financial mechanism established by the UNFCCC in 2010. GCF is the largest climate fund that help developing countries to finance and fund in realizing their NDCs (Chung & Lee, 2022, 4). The GCF remains to play a pivotal role in financing mitigation and adaptation measures by engaging both public and private sector (Chung & Lee, 2022, 4).

Lastly, during the G20 Summit hosted by South Korea in 2010, the Lee administration proposed 'green growth' as the main agenda of the summit to the participating countries and urged the participating countries for a collective action. As a result, the G20 Seoul Summit Leaders' Declaration facilitated the members states to take collective action on green growth such as addressing climate change issues, phasing out fossil fuel subsidies, and building capacities among developing countries (Chung & Lee, 2022, 4).

These national and international efforts aimed to couple development and

environment emissions and facilitate inter-sectoral engagement and dialogues among different sectors (Chung & Lee, 2022, 2). Consequently, participation from private sector and civil society in the decision-making processes on climate change issues increased significantly as they were delegated more responsibilities and functions (Lee, Jung & Choe, 2018, 90). Moreover, climate change-related finance, grants, and loans from 2012 to 2015 increased remarkably which accounted for almost 20 percent of global figures on climate-related development (Lee, Jung & Choe, 2018, 89).

Hence, the Lee Administration's LCGG strategies can be summarized by 1) climate change adaptation and energy independence, 2) creation of new growth engine, and 3) improved quality of life and enhanced national standing sectors (Chung & Lee, 2022, 3). Such efforts were supported and outlined by the Framework Act on Green Growth ratified in April 2010 which laid out South Korea's long-term LCGG visions sectors (Chung & Lee, 2022, 3). As evident in LCGG visions and strategies, the Lee administration sought to facilitate economic growth based on green growth and low carbon industries to recover from adverse effects of the global financial crisis in 2008 and persuade domestic and international stakeholders to invest in green growth and industry (Kalinowski, 2021, 52).

From 2009 to 2013, the budget on green growth initiative was approximately US\$100 billion which is about 2% of GDP per year (Kalinowski, 2021, 52). Almost half of the budget was allocated for Green New Deal projects as a part of green growth initiative which mainly focused on recovering from the financial crisis and increasing research and development (R&D) in green industry and technology (Kalinowski, 2021, 52). Based on the agenda the Lee administration identified the following six engines for green growth: renewable energy, next-generation nuclear

plants, water treatment, LED lighting, green transport systems, and green cities (Kalinowski, 2021, 52).

Although the Lee administration received mixed assessments for its low carbon green growth initiatives particularly due to scandals related to the four-river project, the government still made significant progress in advancing low carbon and green technology (Kalinowski, 2021, 52). The number of applications of environmental patents increased by fivefold from 2000 to 2013, the share of the environment industry in the overall domestic industry increased by sevenfold from 0.38% in 2005 to 2.82% in 2015 (Kalinowski, 2021, 52-53).

In terms of GHG emission reduction, the Lee administration actively pursued the established reduction goals through its commitment to the international carbon credit market established under the Clean Development Mechanism of the Kyoto Protocol and the Korean Emissions Trading System (Kalinowski, 2021, 54). To vitalize K-ETS and enlarge its share in the global carbon market, the government established the Greenhouse Gas Inventory and Research Center (GIR) in 2010 under the Ministry of Environment to record, analyze, and utilize data and information on national GHG emissions to foster national GHG management, develop sectoral GHG reduction targets, and enhance international cooperation (GIR, n.d.).

Given this legal and institutional set-up followed by various national plans action strategies, the Climate Action Tracker rated South Korea's climate change policies and targets as 'sufficient' in 2011 (Kalinowski, 2021, 50). Nevertheless, Reiterer (2022, 57) points out that President Lee's intention is not solely based on climate change issues, but rather is based on its efforts to seek more innovative approach to overcome the global financial crisis.

Table 7. Lee Myung-bak Administration's Climate Change Policies

Lee Myung-bak Administration (2008-2013) Climate Change Policies	
Priority Area	<ul style="list-style-type: none"> • Low Carbon Green Growth • Green economy, infrastructure, industry, and technology
Legal Basis	<ul style="list-style-type: none"> • Framework Act on Low Carbon Green Growth (2010)
Key framework act, national action plans, and policies	<ul style="list-style-type: none"> • LCGG National Strategy for Green Growth (2009-2050) • First Five-Year Plan for Green Growth (2009-2013) • First National Basic Energy Plan (2008-2030) • Comprehensive Basic Plan for Coping with Climate Change (2008-2012) • Second National Basic Plan for Sustainable Development (2011-2015) • Korean Emissions Trading Scheme (K-ETS) • Act on Allocation and Trading of Greenhouse Gas Emissions Allowance (2012)
Key institutions	<ul style="list-style-type: none"> • The Presidential Commission on Green Growth (PCGG) (2008) • Green Climate Fund (2010) • Global Green Growth Institute (2010) • Greenhouse Gas Inventory and Research Center (GIR) (2010)
International framework	<ul style="list-style-type: none"> • The Kyoto Protocol (1997)

4.3. The Park Geun-hye Administration (2013-2017)

President Lee Myung-bak's focus on low carbon green growth and climate change did not continue during the Park Administration as the rhetoric of the government shifted towards 'creative economy' to foster job creation and economic development with science, technology, and innovation rather than on green growth and climate change (Chung & Lee, 2022, 4). During the Park administration, the PCGG was renamed as the Green Growth Committee and was transferred to the Prime Minister's office, losing the authority and status as delegated by the Lee

administration (Chung & Lee, 2022, 4).

Despite the organizational and policy change, the Park administration still pursued climate action though not as rigorous as the previous administration. In 2014, the government announced the Action Plan for Future Growth Engine comprised of nine strategic industries and four base industries. Among these industries, smart vehicles, disaster and safety management smart system, and renewable energy hybrid system are identified as the new industries related to climate mitigation and adaptation as these industries are based on innovative and low carbon technologies (Chung & Lee, 2022, 4). Furthermore, the Park administration elaborated on its national GHG emission reduction plans and renewable energy policies through the Second Five-Year Plan for Green Growth and the National Basic Energy Plan (Chung & Lee, 2022, 4-5). In 2015, the government prepared the Strategy on Expansion of New Industries in the Energy Sector which outlined the government's strategies to reduce GHG emissions and address climate change issues via energy sector (Chung & Lee, 2022, 5).

From an international context, the Park administration's most notable progress on climate change is the adoption of the Paris Agreement in 2015. During the 2015 United Nations Climate Change Conference (COP21), President Park Geun-hye delivered a keynote statement which announced Korea's three action plans in the future climate regime. First, President Park made a commitment to reduce GHG emissions by 37 percent from the business-as-usual (BAU) level by 2030 (Chung & Lee, 2022, 5). In the statement, President Park emphasized its willingness to reduce emissions by transforming its energy industries. From this new energy industry, the government expected to open a 100-billion-dollar market and create 500,000 jobs by 2030 while meeting its Intended Nationally Determined Contributions (INDCs)

(Kang, 2015).

Second, President Park expressed the government's dedication to share cross-cutting technologies and business models for green industry with developing countries through international organizations mainly the Green Climate Fund (GCF) (Kang, 2015). In 2014, the Korean government already pledged to make \$100 million to GCF which implies its continued and enhanced support for global financing mechanisms (Chung & Lee, 2022, 5). Third, President Park expressed its support for establishing a global carbon market and assured its contribution to the development of the global carbon market by building on Korea's previous experiences with the Emissions Trading Scheme (ETS) (UNFCCC, 2015).

Despite these national strategies and global commitments, the Park administration did not fully take advantage of the global trend for enhanced climate action and reduction goals established under the Paris Agreement in 2015 (Kalinowski, 2021, 50). In 2015, the administration amended the reduction goals by 37% compared to that of the BAU level by 2030 (Kalinowski, 2021, 51). This indicates "a 78% increase of emissions compared to 1990 and a reduction of 20% below 2010 levels but 10 years later" which is (Kalinowski, 2021, 51). However, this amendment is seen as a retreat because the previous reduction target aimed to reduce GHG emissions by 30% below BAU by 2020 which is "an increase of 80% over 1990 levels and a reduction of 19% compared to 2010" (Kalinowski, 2021, 50).

During the Park administration, climate change was less prioritized as a key national agenda. Although the government implemented national policies and plans related to climate change, the efforts were done based the government's pursuit of creative economy with a focus on science, technology, and innovation (Chung & Lee, 2022, 5-6). Consequently, the Climate Action Tracker downgraded South Korea's

climate and GHG reduction goals to ‘inadequate’ in 2015 and ‘highly insufficient’ in 2017 as the government did not enhance its targets after the ratification of the Paris Agreement in 2016 (Kalinowski, 2021, 51).

Table 8. Park Geun-hye Administration’s Climate Change Policies

Park Geun-hye Administration (2013-2017) Climate Change Policies	
Priority Area	<ul style="list-style-type: none"> • Creative Economy • Job creation and economic development • Information and Communication Technology (ICT)
Legal Basis	<ul style="list-style-type: none"> • Framework Act on Low Carbon Green Growth (2013)
Key framework act, national action plans, and policies	<ul style="list-style-type: none"> • The Action Plan for Future Growth Engine • Second Five-Year Plan for Green Growth (2014-2018) • Second National Basic Energy Plan (2014-2035) • Third National Basic Plan for Sustainable Development (2016-2035) • 2016 Voluntary National Review (VNR)
Key institutions	<ul style="list-style-type: none"> • Green Growth Committee • Green Climate Fund
International framework	<ul style="list-style-type: none"> • The Paris Agreement (2015)

4.4. The Moon Jae-in Administration (2017-2022)

During the initial period of the administration, President Moon Jae-in has set its national agenda on facilitating energy transition and changing the energy mix by vitalizing renewable energy industry (Chung & Lee, 2022, 6). In terms of climate-related agenda, the Moon administration prioritized issues on heavy pollution and fine dust by establishing the National Climate Environment Conference for the Resolution of Fine Dust (Reiterer, 2022, 55). There are four major reasons why the Moon administration emphasized energy transition: 1) the European countries were already making a transition from fossil fuel to renewable energy, 2) South Korea

sought to alleviate the impacts of particulate matter by reducing the use of fossil fuel, 3) the safety issues on nuclear power emerged among the public, and 4) renewable energy industry has high prospects for job creation and economic growth (Chung & Lee, 2022, 6). Consequently, the Moon administration announced its plans to reduce coal-fired power and phase out from nuclear power (Kalinowski, 2021, 51).

In 2017, the government announced the Renewable Energy 3020 Implementation Plan as an initiative for producing 20 percent of energy from renewable sources by 2030. In addition, the 8th Basic Plan for Electricity Supply and Demand and the 3rd Basic Plan for Energy illustrate the administration's long-term roadmap for energy transition and renewable energy (Chung & Lee, 2022, 6). As a part of its strategy, the Moon administration also actively engaged civil societies by enlarging their participation in policymaking and power generation processes (Chung & Lee, 2022, 6). For instance, the government widely publicized its renewable energy projects and incentivized businesses and citizens who participated in the projects to gain public support and acceptance (Chung & Lee, 2022, 6).

However, the Moon administration's early climate change policies were not successful as the policies focused on addressing fine dust issues and phasing out of coal and nuclear power without developing a specific roadmap to reduce GHG emissions (Kalinowski, 2021, 51). By 2018, South Korea's pledges and targets for GHG emission reduction remained unchanged compared to that of the previous administration. Hence, the Climate Action Tracker maintained the rating of South Korea's pledges at 'highly insufficient' in 2018 (Kalinowski, 2021, 51).

In 2020, the Moon administration's climate change policies and governance underwent a paradigm shift when the government announced the Korean New Deal and declared 2050 Carbon Neutrality (Chung & Lee, 2022, 6). The Korean New Deal:

National Strategy for a Great Transformation served to address various social, economic, and environmental issues posed by the COVID-19 pandemic such as social inequalities, economic stagflation, job insecurity (Chung & Lee, 2022, 6). Most importantly, the Korean New Deal was intended to prepare a comprehensive stimulus package to recover from a global economic recession due to the pandemic (Chung & Lee, 2022, 6). The Korean Green New Deal aimed to finance the transition to green infrastructure, decentralized energy, and green industry to induce job creation and commercialize carbon capture utilization and storage (CCUS) technology (Reiterer, 2022, 57).

The Korean New Deal is composed of three components: Digital New Deal, Green New Deal, and Social Safety Net (Chung & Lee, 2022, 6). In particular, the Green New Deal was designed to accelerate South Korea's transformation towards a low-carbon economy, facilitate green industry, and strengthen national capacity for climate change (Chung & Lee, 2022, 7). The objectives of the Korean New Deal are to create new jobs, facilitate digital and green transformation to bring the economy back on track, and take global leadership in the post COVID-19 era. (Government of the Republic of Korea, 2020a, 4). In July 2021, the Moon administration launched the Korean New Deal 2.0 to propose an enhanced Green New Deal prioritizing carbon neutrality and low carbon economy to meet reduction goals and targets set by international agreements and standards (Chung & Lee, 2022, 7).

In addition, the government formulated the 2050 Carbon Neutrality Promotion Strategy and the Long-term Greenhouse Gas Emission Development Strategy (LEDS) as mandated by the Paris Agreement (Chung & Lee, 2022, 7-8). The 2050 LEDS included five fundamental strategies: 1) expansion of clean electricity and hydrogen, 2) increase energy efficiency, 3) commercialize future carbon

technologies, 4) upscale industrial sustainability, and 5) improve carbon absorption measures (Chung & Lee, 2022, 7-8).

During the Moon administration, South Korea updated its Nationally Determined Contributions (NDCs) twice in 2020 (24.4 percent reduction compared to the 2017 level by 2030) and 2021 (40 percent reduction compared to the 2018 level by 2030) to demonstrate its commitment to achieve carbon neutrality despite its export- and manufacturing-oriented economy (Chung & Lee, 2022, 8). In May 2021, the Moon administration established the 2050 Carbon Neutrality and Green Growth Commission under Presidential Office to steer and implement strategies and policies to achieve carbon neutrality. Through the commission, the government prepared the 2050 Carbon Neutrality Scenario, updated the NDCs, and enacted the Framework Act on Carbon Neutrality and Green Growth for Climate Crisis Response (Chung & Lee, 2022, 8). The Framework Act on Carbon Neutrality and Green Growth for Climate Crisis Response was enacted in September 2021 to provide a legal framework for national policies related to GHG emissions reduction, mitigation and adaptation, and green industry (Korea Law Translation Center, 2021). The Article 1 of the Act states that the purpose of the Act is to:

“resolve economic, environmental, and social disparity that may arise in the course of transition to a carbon neutral society... thereby improving the quality of life of present and future generations, protecting the ecosystem and climate system, and contributing to the sustainable development of the international community” (Korea Law Translation Center, 2021).

The Act was the first to address climate crisis in the legislation and was designed to promote mutual and sustainable development of South Korea’s economy and environment by revitalizing green industry and technology (Korea Law Translation

Center, 2021).

On a global level, the Moon administration assured its commitment on climate action through multilateral summits and dialogues on global climate actions. South Korea created a \$5 million trust fund for Green New Deal within the GGGI and expanded Official Development Assistance (ODA) for developing countries on climate- and green-related projects (Chung & Lee, 2022, 8). Furthermore, the Moon administration joined global efforts on climate action in various international and multilateral summits. During the Leader's Summit on Climate in 2021, South Korea made a pledge to strengthen its NDC to achieve 2050 carbon neutrality and cease public funding for new overseas coal plants (Chung & Lee, 2022, 8).

In May 2021, South Korea hosted the 'Partnering for Green Growth and the Global Goals 2030 (P4G) Seoul Summit' and President Moon reemphasized South Korea's commitment to address climate change issues through multilateral partnership and dialogues (Chung & Lee, 2022, 8). The Seoul Declaration, which was developed during the P4G Summit, emphasized the importance of public-private-partnership in water, energy, food and agriculture, cities, and circular economy sector based on market-driven solutions that are aligned with international agreements on climate change and the Sustainable Development Goals (SDGs) (Reiterer, 2022, 57). During the G7 Summit, G20 Summit, and the United Nations Framework on Climate Change (UNFCCC) Conference of the Parties (COP), the Moon administration announced a series of national policies and initiatives to achieve 2050 carbon neutrality (Chung & Lee, 2022, 8).

Upon the declaration of the carbon neutrality and 'climate emergency', the Moon administration aspired to involve the stakeholders at all levels of society in South Korea's transition towards more sustainable society and establish the Korean

New Deal as an essential political agenda for realizing carbon neutrality and addressing climate change issues (Reiterer, 2022, 59-60). To reflect such political will, the Moon administration doubled its reduction commitment at the 26th UNFCCC Conference of the Parties held in Glasgow, United Kingdom (Reiterer, 2022, 60). However, the government faced criticism as the commitment did not lay out a corresponding action plan (Reiterer, 2022, 60). Moreover, South Korea remained as one of the largest emitters relying heavily on fossil fuel and carbon-intensive industries such as automobile, manufacturing, steel, and semiconductors (Reiterer, 2022, 60).

Table 9. Moon Jae-in Administration's Climate Change Policies

Moon Jae-in Administration (2017-2022) Climate Change Policies	
Key agenda	<ul style="list-style-type: none"> • Carbon Neutrality • Energy transition and efficiency (energy mix)
Legal Basis	<ul style="list-style-type: none"> • The Framework Act on Carbon Neutrality and Green Growth for Climate Crisis Response
Key framework act, national action plans, and policies	<ul style="list-style-type: none"> • The Korean New Deal 2.0 (Green New Deal and Digital New Deal) (2020) • Third Five-Year Plan for Green Growth (2019-2023) • Third National Basic Energy Plan (2019-2040) • First Basic Plan for Coping with Climate Change (2017-2036) • Second Basic Plan for Coping with Climate Change (2019-2040) • Long-term Greenhouse Gas Emission Development Strategy (LEDS) • 2050 Carbon Neutral Strategy of the Republic of Korea • 2050 Carbon Neutrality Scenario
Key institutions	<ul style="list-style-type: none"> • 2050 Carbon Neutrality and Green Growth Commission (2022)
International framework	<ul style="list-style-type: none"> • The Paris Agreement (2015)

4.5. Legal and Institutional Basis for Climate Change

Governance

President Lee Myung Bak – Framework Act on Low Carbon Green Growth & the Presidential Commission on Green Growth (PCGG)

On January 2009, President Lee Myung-bak proclaimed the Presidential decree on the establishment of the Presidential Commission on Green Growth (PCGG) (Green Growth Korea, n.d.b). After the decree, the PCGG was officially established under the Presidential decree (Seong, 2011, 18). Moreover, President Lee enacted the Framework Act on Low Carbon Green Growth in April 2010 to provide a legal framework for the PCGG's composition and operation. According to the Article 14 of the Framework Act, the PCGG "shall be instituted under the control of the President in order to have the Committee deliver on the State's major policies and plans related to low carbon, green growth and matters concerning the performance of such policies and plans" (Korean Law Information Center, 2010). The Framework Act is notable that it coupled energy policies, linked directly with domestic economic development, with sustainable development and climate change (Loher, 2012, 82). The main chapters of the Framework Act include National Strategy for Low Carbon, Green Growth (Chapter 2), Presidential Committee on Green Growth (Chapter 3), promotion of low carbon green growth (Chapter 4), realization of low carbon society (Chapter 5), and realization of green life and sustainable development (Korean Law Information Center, 2010).

The Article 15 also writes that the PCGG will serve as a deliberative body scrutinizing policies related to low carbon green growth as well as the development and enforcement of national strategies for green growth, national plans for

addressing issues related to climate change, energy, and sustainable development, legal system for low carbon green growth, and distribution of resources (Korean Law Information Center, 2010). The Article also articulates that the PCGG should perform functions to lead and promote international negotiations and cooperation, public education, and trainings for human resources (Korean Law Information Center, 2010). Moreover, the PCGG was the only legislative deliberation committee created under President Lee which required all laws and policies related to low carbon green growth to undergo the committee's deliberation and decision before being raised as an agenda at the Cabinet meeting (Jung, 2013). Therefore, the PCGG can be considered as the implementation body involved in the direction, planning, coordination, and enactment of laws and policies on green growth and climate change (Seong, 2011, 18).

In terms of its composition, the PCGG is co-chaired by the Prime Minister and the Civilian Head of the PCGG appointed by the president (Seong, 2011, 18). The PCGG also consists of 30 commissioners nominated by the president and 17 commissioners designated by law (Seong, 2011, 18). The PCGG has three subcommittees on Green Growth and Industry, Climate Change and Energy, and Green Life and Sustainable Development (Seong, 2011, 18). Figure 4 illustrates the organigramme of the PCGG. In addition, the Secretariat of the PCGG, otherwise known as the Green Growth Planning Taskforce, is co-chaired by the Secretary to the President for Future and Vision and performs inter-ministerial functions and behind-the-scenes support for the operation of the PCGG (Seong, 2011, 19). The Secretariat consists of 6 divisional teams with their own respective functions. The structure of the Secretariat is shown in Figure 5.

Figure 4. The structure of the Presidential Commission on Green Growth

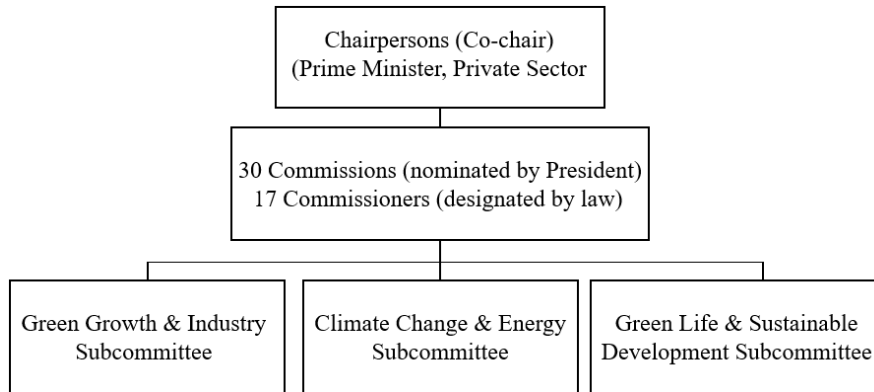
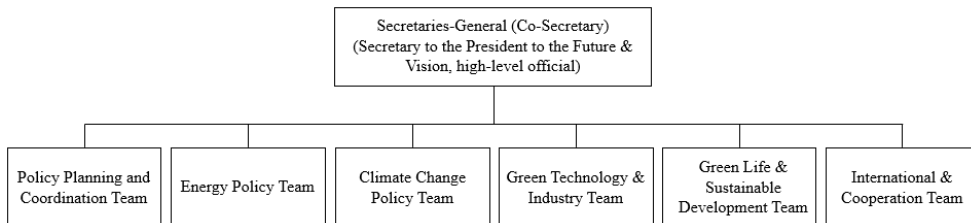


Figure 5. The structure of the Secretariat of the Presidential Commission on Green Growth



The PCGG is considered as one of the main governing bodies for President Lee’s LCGG initiative as the Framework Act which stipulated that the Act (Article 8) shall take “precedence over other Acts in application to low carbon, green growth” and “be brought into conformity with the purposes and basic principles of the Act” whenever there needs to be an enactment or amendment (Korean Law Information Center, 2010).

President Park Geun-hye – Framework Act on Low Carbon Green Growth (amended) & Green Growth Committee (GGC)

During the Park administration, Low Carbon Green Growth (LCGG) agenda initiated by President Lee was not actively pursued. After the amendment of the

Article 14 of the Framework Act on Low Carbon Green Growth on 23 March 2013, the Presidential Commission on Green Growth (PCGG) established by the Lee administration was renamed as the Green Growth Committee (GGC) and downgraded to the Prime Minister's office (Korean Law Information Center, 2013) (Chung & Lee, 2022, 4-5). In particular, the amendment of the Article 18 dissolved the Secretariat (used interchangeably with 'Task Force') of the Green Growth Committee acted as a backbone for supporting the operation and activities of the PCGG and its subcommittees during the Lee administration (Korean Law Information Center, 2013) (Jung, 2013).

Despite such changes, the GGC maintained its statute as a legislative deliberation body (Jung, 2013) and responsibility of reviewing the government's basic plan on climate change responses and energy which need to be prepared every five years as mandated by the Article 40 of the Framework Act on Low Carbon Green Growth (Korean Law Information Center, 2013). Consequently, LCGG has lost its momentum as a national agenda and was substituted by 'creative economy' under the Park administration (Cho et al., 2014, 332). For instance, the term 'green growth' was replaced with 'creative economy' in many of policy documents which implied the shift of policy priority and orientation (Cho et al., 2014, 332).

President Moon Jae-in – Framework Act on Carbon Neutrality and Green Growth for Coping with Climate Crisis & 2050 Carbon Neutrality and Green Growth Committee

Under the Moon administration, the Framework Act on Carbon Neutrality and Green Growth for Coping with Climate Crisis was enacted in September 2021. Under the Carbon Neutrality Act, the Framework Act on Low Carbon Green Growth

was officially abolished in March 2022 (enacted in September 2021). This led to a new paradigm for South Korea's climate change governance along with an emergence of carbon neutrality and climate crisis. Unlike the Low Carbon Green Growth Act which focused on "laying down the foundation necessary for low carbon, green growth and utilizing green technology and green industries as new engines for growth", the Carbon Neutrality Act aimed to "strengthen policy measures to reduce greenhouse gases and adapt to climate change for preventing serious impacts of climate crisis, to resolve economic, environmental, and social disparity" (Korean Law Information Center, 2010) (Korean Law Information Center, 2021). This demonstrates that the Moon administration's climate change governance oriented towards fostering a carbon-neutral, resilient, adaptive, and just society rather than focusing on economic growth or job creation.

The Framework Act legislates key features of realizing carbon neutrality such as national vision and GHG reduction targets (Chapter 2), formulation of national framework plan for carbon neutrality and green growth (Chapter 3), 2050 carbon neutrality and green growth committee (Chapter 4), GHG reduction policy measures (Chapter 5), climate crisis adaptation policy measures (Chapter 6), just transition (Chapter 7), policy measures for green growth (Chapter 8), and transition to carbon neutral society and spread of green growth (Chapter 9) (Korean Law Information Center, 2021). This demonstrates a contrast from the Framework Act on Low Carbon Green Growth indicating a shift in national agenda and policy priorities. The juxtaposition of two framework acts is shown below. As evident in the comparison, the chapters for the Framework Act on Carbon Neutrality are more elaborate and detailed and is less oriented on taking market-based approaches for addressing climate change issues.

Table 10. Chapters of the Framework Act on Low Carbon Green Growth and Framework Act on Carbon Neutrality & Green Growth for Coping with Climate Crisis

Chapters of the Framework Act on Low Carbon Green Growth	Chapters of the Framework Act on Carbon Neutrality and Green Growth for Coping with Climate Crisis
<ul style="list-style-type: none"> • National Strategy for Low Carbon, Green Growth (Chapter 2) • Presidential Committee on Green Growth (Chapter 3) • Promotion of low carbon green growth (Chapter 4) • Realization of low carbon society (Chapter 5) 	<ul style="list-style-type: none"> • National vision and GHG reduction targets (Chapter 2) • Formulation of national framework plan for carbon neutrality and green growth (Chapter 3) • 2050 carbon neutrality and green growth committee (Chapter 4) • GHG reduction policy measures (Chapter 5) • Climate crisis adaptation policy measures (Chapter 6), just transition (Chapter 7) • Policy measures for green growth (Chapter 8) • Transition to carbon neutral society and spread of green growth (Chapter 9)

In addition, the Carbon Neutrality Act aspired to facilitate South Korea’s transition to a carbon-neutral society while considering the values of sustainable development which emphasize ensuring the quality of life of present and future generations, protecting the environment, and integrating economy and environment through green industry and infrastructure (Korean Law Information Center, 2021). The Carbon Neutrality Act implemented key measures and funds such as the National Strategy for Carbon Neutrality and Green Growth (Article 7), the National Framework Plan for Carbon Neutrality and Green Growth (Article 10), the Climate Change Impact Assessment (Article 23), the National Climate Crisis Adaptation Measure (Article 38), and Climate Response Fund (Chapter 69) (Korean Law Information Center, 2021).

After South Korea’s declaration to achieve carbon neutrality by 2050 in

December 2020, the Moon administration established the 2050 Carbon Neutrality and Green Growth Committee (hereinafter ‘Carbon Neutrality Commission’) in May 2021 (Chung & Lee, 2022, 8). The functions and legal statute of the committee are elaborated in the Framework Act on Carbon Neutrality and Green Growth for Coping with Climate Crisis enacted in September 2021 (Korea Law Translation Center, 2021). According to the Article 15, the Carbon Neutrality Commission is established under the President’s jurisdiction to “deliberate and decide on the Government’s key policies, plans, and implementation thereof for the transition to carbon neutral society and promotion of green growth” (Korea Law Translation Center, 2021). The Carbon Neutrality Committee was organized by merging the Green Growth Committee and the National Climate Environment Conference for the Resolution of Fine Dust as the Moon administration considered that two organizations shared common functions and objectives (Carbon Neutrality Commission, 2022).

The legal setting of the Carbon Neutrality Committee demonstrated a drastic change from the green growth committees established by previous administration. Unlike previous committees, the Carbon Neutrality Committee was now given a decision-making authority on formulating and implementing national strategies and targets to achieve a carbon-neutral society. In addition, the establishment of commission council and civil policy participation group in the commission indicated a shift from centralized form of climate change governance to a decentralized form with more decision power given to private sector and civil society.

The most notable change from the previous committees is size and composition of the Carbon Neutrality Committee. While the Presidential Committee on Green Growth and the Green Growth Committee limited the number of the committee members not to be more than 50 as per Article 14 Section 2 of the Framework Act

on Low Carbon Green Growth (Korean Law Information Center, 2010), the Carbon Neutrality Commission required the number of the members to be at least 50 but no more than 100 as described in the Article 15 Section 2 of the Framework Act on Carbon Neutrality and Green Growth for Coping with Climate Crisis (Korea Law Translation Center, 2021). In particular, the Framework Act on Carbon Neutrality legislated the President to “receive recommendations for candidates from, and hear the opinion of, various social groups including youths, women, workers, farmers and fishermen, small and medium entrepreneurs, and civic groups” to ensure equal representation for different groups (Korea Law Translation Center, 2021).

Moreover, the Carbon Neutrality Commission newly added the Minister of the Office for Government Policy Coordination as a member of the commission. The organizational change denotes that the Moon administration’s willingness to enhance inter-ministerial coordination and promote integrated approach for planning and implementing policies on climate change and carbon neutrality. Figure 6 illustrates the organization of the Carbon Neutrality Committee which is much more compartmentalized than that of the previous administrations. Consequently, the functions of the secretariat increased substantially as shown in Figure 7.

Figure 6. Organization of the Carbon Neutrality Commission

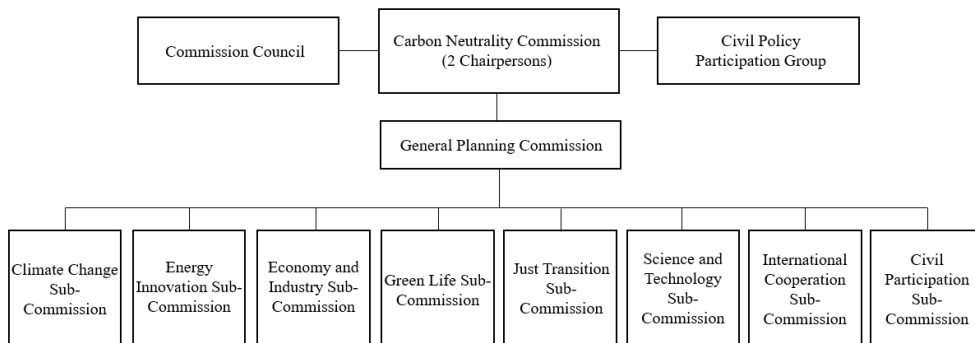
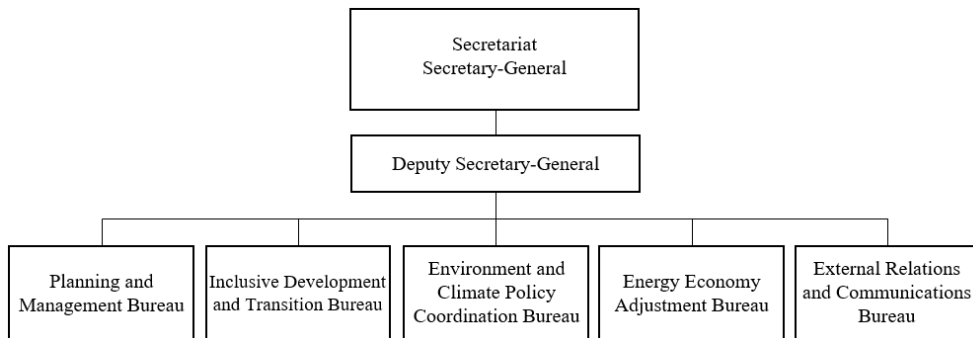


Figure 7. Organization of the Secretariat for Carbon Neutrality Commission



As evident from its structure and organization, the Carbon Neutrality Commission has become much more compartmentalized and sophisticated. In particular, the Commission Council and Civil Policy Participation Group were newly organized to foster cross-sectoral policy consensus among industry, labor, civil society, youth, and local government and reach a social agreement on carbon neutrality-related policies among the citizens through social learning, deliberation, and discussion (Lee & Ryu, 2021, 6). Through the Carbon Neutrality Commission, the Moon administration developed the 2050 Carbon Neutrality Scenario which is a long-term national strategy which lays out cross-sectoral emissions reduction goals and plans to achieve carbon neutrality by 2050 (Lee & Ryu, 2021, 2-3). Table 11 compiles the characteristics of legal and institutional framework for the three administrations.

Table 11. Characteristics of South Korea’s legal and institutional frameworks on climate change
(Lee & Ryu, 2021, 7), (Korean Law Information Center, 2013)

	Presidential Commission on Green Growth	Prime Minister’s Committee on Green Growth	2050 Carbon Neutrality and Green Growth Committee
Administration	Lee Myung-bak	Park Geun-hye	Moon Jae-in
Focus Area	Low Carbon Green Growth	Creative Economy	Carbon Neutrality
Type of Committee	Presidential	Prime Minister’s office	Presidential
Function	Advisory & deliberation	Advisory & deliberation	Administrative & legislative
Obligations	To deliberate the national strategy for green growth, basic plan on coping with change, basic plan for energy, and for basic plan sustainable development and other matters related to LCGG	To deliberate the national strategy for green growth, basic plan on coping with change, basic plan for energy, and for basic plan sustainable development and other matters related to LCGG	To deliberate and decide national strategy on carbon neutrality, long-term reduction targets, adaptative measures for climate crisis, implementation progress, and national framework plan on climate crisis, just transition, and green growth
Legal Basis	Framework Act on Low Carbon Green Growth (2010)	Framework Act on Low Carbon Green Growth (2013)	Framework Act on Carbon Neutrality and Green Growth for Coping with Climate Crisis (2021)

Number of committee members	No more than 50 (18 ex-officio members, 29 commissioned members)	No more than 50 (18 ex-officio members, 29 commissioned members)	More than 50 and less than 100 (2 chairpersons, 18 ex-officio members, 77 commissioned members)
Sub-committees	Green Growth & Industry, Climate Change & Energy, and Green life & Sustainable Development	Green Growth & Industry, Climate Change & Energy, and Green life & Sustainable Development	Climate Change, Energy Innovation, Economy & Industry, Green Life, Just Transition, Science & Technology, International Cooperation, and Civil Participation
Committee members (Public officials)	Minister of Strategy and Finance, of Education, Science and Technology, of Knowledge and Economy, of Environment, of Land, Transport, and Maritime Affairs	Minister of Strategy and Finance, of Science, ICT and Future Planning, of Trade, Industry and Energy, of Environment, of Land, Infrastructure and Transport	Minister of Economy and Finance, Science and ICT, of Trade, Industry and Energy, of Environment, of Land, Infrastructure and Transport, of the Office for Government Coordination
Committee members (non-public officials)	Experts on climate change, energy and resources, green technology and industry, and sustainable development	Experts on climate change, energy and resources, green technology and industry, and sustainable development	Experts on climate science, GHG emissions reduction, climate crisis prevention and adaptation, energy and resources, green technology and industry, and just transition
Secretariat and sub-divisions	Secretariat with 6 subdivisions	Secretariat dissolved	Secretariat with 5 bureaus and 14 divisions

Chapter 5. Analysis and Results

5.1. Agenda-setting process of climate change governance

Lee Myung-bak Administration (2008-2013)

On 15 August 2008, President Lee Myung-bak officially announced ‘Low Carbon Green Growth’ (LCGG) as the core national vision and agenda (Green Growth Korea, n.d.a). The LCGG specifically aimed to serve as the ‘new engine’ for addressing climate change and energy crisis (Green Growth Korea, n.d.a). In particular, President Lee aimed to improve the quality of citizen’s life, promote mutual environmental and economic growth, and enhance international cooperation on global climate change action via ‘market-driven green growth’ through green industry and technology (Green Growth Korea, n.d.c).

Son et al. (2015, 523) writes that green growth emerged as a national agenda due to growing concerns for environmental sustainability and financial crisis and economic instability deriving from global climate change along with its environmental and economic implications. The government acknowledged that economy and environment can no longer be decoupled and should be integrated as one which would require a substantial structural transformation (Son et al., 2015, 523). Hence, green growth is implemented as a national strategy that can foster transformation that encompass environment, society, economy, and industrial structure (Son et al., 2015, 523).

During the Lee administration, the scene for the *Problem Stream* has already been well established due to various reports, assessments, and projections on climate change, global warming, and anthropogenic GHG emissions published by international organizations and research bodies such as the International Panel on

Climate Change (IPCC). In particular, the IPCC's comprehensive assessments and special reports provided profound scientific evidence for concerning impacts of global climate change. Based on these reports, international organizations, NGOs, and civil societies called for coordinated climate action to reduce GHG emissions and inhibit global warming. This led to the adoption of the Kyoto Protocol in 2008 and its driving mechanisms such as the global emissions trading system, Clean Development Mechanism, and enhanced monitoring and evaluation processes (UNFCCC, n.d.).

In terms of *politics stream*, President Lee Myung-bak proclaimed the Low Carbon Green Growth in 2008 shortly after coming into the office as a key national agenda to quickly adapt to the global trend towards enhanced climate action. This was a drastic shift from its previous administrations which focused mainly on industrial and economic development. Instead, The LCGG prioritized achieving 'green growth' through green industry, technology, and infrastructure as the government considered the green growth as a new engine for future economic growth and an opportunity to take a leadership in climate action within the global community. Following the announcement, the Lee administration prepared and enacted the Framework Act on Low Carbon Green Growth as well as subsequent initiatives and policies. The Framework Act legislated the responsibilities of the state, local governments, businesses, and citizens and thus formalizing the principles of Low Carbon Green Growth (Korean Law Information Center, 2010). Moreover, the Lee administration established the Presidential Commission on Green Growth under the Framework Act as a control tower for governing issues surrounding LCGG initiatives. Through these efforts, the Lee administration consolidated a strong national mood for the Low Carbon Green Growth.

The *policy stream* was constructed along with the politics stream leading to the formulation of various national plans. In particular, the Article 40, 41, and 50 of the Framework Act required mandate the state to establish and implement basic plan for coping with climate change, basic plan for energy, and basic plan for sustainable development every five years for the planning period of twenty years (Korean Law Information Center, 2010). Based on the Framework Act and national basic plans, central administrative agencies and local governments established local and regional action plans. The Presidential Commission on Green Growth acted as the main political and interest group with substantial authority allotted as an advisory and deliberative body for Low Carbon Green Growth initiative. Therefore, the policy stream was formed through a centralized and top-down process in which the president and its associated administrative agencies mainstreamed the national agenda through a strong political will.

The 2007-2008 Global Financial Crisis also contributed to the emergence of Low Carbon Green Growth in South Korea serving as a focusing event which coupled different streams into a single agenda. The financial crisis had severe impacts on the Korean economy which decreased the economic growth rate from 5.8% in 2007 to 3% and 0.8% in 2008 and 2009 respectively (Kindicator, 2023). In addition, with the enforcement of the Kyoto Protocol in 2005, market-based mechanisms for addressing climate change such as the emissions trading system became an important aspect for future economic growth and sustainability. Hence, the Lee administration declared the Low Carbon Green Growth as a new engine for fostering economic growth, a driving resolution for tackling challenges related to climate change, energy, and resources, and as an instrument for advancing its international commitment on global climate action.

Park Geun-hye Administration (2013-2017)

After coming into the office in 2013, President Park Geun-hye announced, “a national vision of citizen happiness and new age of hope” and proposed five national targets to realize the vision (Chung & Lee, 2022, 4). The targets included “1) creative economy centered on job creation, 2) customized employment and welfare, 3) lifestyle with creative education and culture, 4) safe and integrated society, and 5) establishing the base for the age of happy reunification” (Chung & Lee, 2022, 4). The notable change from the previous administration is that the national agenda shifted away from climate change and emphasized ‘creative economy’. Consequently, Low Carbon Green Growth lost much of its momentum under the Park administration. This was largely due to political reasons in which President Park purposefully distanced herself from President Lee who lost his popularity and public support at the end of his term (Mundy, 2014).

According to the Action Plan for 13 Future Growth Engines announced in 2014, the government aimed to increase South Korea’s GDP per capita to 40,000 USD (Jin, 2014, 1). From this action plan, the government proposed 13 future growth engines composed of 9 strategic industries and 4 base industries as listed on Table 12 (Jin, 2014, 1). As these economy-focused industries exemplify, the Park administration’s policies were more focused on the economic aspects rather than environmental aspects. Although some of the listed industries such as smart vehicle, disaster and safety management smart system, new and renewable hybrid system, Internet of Things (IoT), and big data are related to climate mitigation and adaptation, the Park administration considered the industries as a means for promoting creative economy and job creation rather than pursuing low carbon green growth.

Table 12. The Park administration's future growth engines
(Chung & Lee, 2022, 5)

Park Geun-hye Administration's 13 Future Growth Engines	
9 Strategic Industries	Smart vehicles, 5G mobile communications, deep seabed offshore plant, smart robot, wearable smart device, immersive contents, customized wellness and care, disaster & safety management smart system, new & renewable hybrid system
4 Base Industries	Intelligent semiconductor, composite materials, artificial Internet of Things (IoT), big data

In terms of long-term policy planning, the Park administration did not prepare the Second Basic Plan for Coping with Climate Change which should have been implemented in 2013 as prescribed by the Article 40 of the Framework Act on Low Carbon Green Growth following the First Basic Plan (2008-2012) reaffirming its political will against Low Carbon Green Growth. The second basic plan was implemented later in 2019 under the Moon administration.

Nevertheless, the Park administration took minimal efforts to pursue climate mitigation and adaptation measures by implementing the Second Five-Year Plan for Green Growth and the National Basic Energy Plan to facilitate GHG emissions reduction and renewable energy (Chung & Lee, 2022, 4-5). In 2012, South Korea enacted the Act on the Allocation and Trading of Greenhouse Gas Emission Permits which provided the legal basis for K-ETS which was first introduced by President Lee Myung-bak. After going through a pilot stage, the first phase of the K-ETS (2015-2017) was delivered with 252 enterprises participating in the scheme (Government of the Republic of Korea, 2020b, 37). However, the enactment is seen as a way to drive economic outcomes rather than the environmental ones.

Due to the Park administration's inactive climate change policies and plans, Chung & Lee (2021, 4) writes that South Korea's efforts on climate change were under-performed and even regressed during the administration. Instead of maintaining and expanding climate change policies and Low Carbon Green Growth (LCGG) initiated by President Lee, the Park administration discontinued the LCGG initiatives and renamed the Presidential Committee on Green Growth (PCGG) created by President Lee as the Green Growth Committee steered by the Prime Minister's office (Chung & Lee, 2022, 4-5). Moreover, South Korea's share of renewable energy was only at 7% of the total energy sector with nearly 50% of the sector deriving from "biomass and waste burning with a mixture of coals" (Park & Koo, 2018, 66).

According to Chung and Lee (2021, 6), climate change was never considered as a primary concern under the Park administration. Consequently, the loss of interest in climate change weakened climate change governance (Chung & Lee, 2022, 6). Lee, Jung & Choe (2018, 89) also asserts that policy decisions made under President Park is a substantial retreat from her predecessor as evident in its energy policies to build new coal-fired power plants. They also explain that the administration change from President Lee to President Park dissipated the policy momentum and impetus for climate action as the Park administration advocated another way of vitalizing economy and job market (Lee, Jung & Choe, 2017, 90). This implies that the state has altered *politics* and *policy stream* away from climate change though the *problem stream* remained constant.

Moon Jae-in Administration (2017-2022)

Despite a series of IPCC reports and international agreements, the Moon

administration did not prioritize climate change as a national agenda and maintained the same level of reduction goals and policies as that of the Park Geun-hye administration. The noticeable climate change policies emerged after 2019 when the COVID-19. Before 2019, as mentioned earlier, President Moon “focused mainly on changing the energy mix without considering the implications for GHG emissions reductions” (Chung & Lee, 2022, 6).

During the Moon administration, the COVID-19 pandemic was a critical focusing event which affected the government’s agenda-setting process as the pandemic substantially changed the world’s economy and social values as well as individual’s behaviors and perceptions (Government of the Republic of Korea, 2020a, 5). In particular, the ‘untact’ economy demanded more refined digital, green, and market economy to address emerging issues such as access to digital technologies, ‘corona trash’ and labor polarization (Government of the Republic of Korea, 2020a, 5). For instance, the proportion of online consumption compared to retail sales in Korea increased from 16.6% in 2017 to 26.9% in May 2020 (Government of the Republic of Korea, 2020a, 5).

This increase entails that small and medium-sized enterprises (SMEs) in the manufacturing sector lacking appropriate digital technologies had to make additional investments and spending to adapt to the pandemic era (Government of the Republic of Korea, 2020a, 5). Although South Korea is relatively less affected by this sudden digital transition due to its already advanced digital infrastructure, the adverse effects were mainly inflicted to self-employed businesses. According to the research conducted by Kim (2022), the number of self-employed with employees in South Korea decreased sharply while the number of self-employed without employees increased after 2018 (Kim, 2022, 66). Although Kim (2022) explains that such

change was facilitated by the rapid increase of minimum wage in 2018, such figures can also be interpreted that the self-employed with employees could no longer pay their employees when the economy fell after the COVID-19 outbreak, thus increasing the number of self-employed without employees.

In fact, according to the research conducted by the Statistics Korea and the Ministry of Small and Medium-sized Enterprises (SMEs) and Startups in 2021, the operating profit for self-employed businesses dropped by 40% in 2020 compared to that of 2019 (Lee, 2021). In addition, the proportion of self-employed businesses with debt increased by 8.1% while the total amount of debt increased by 19.3% during the same period (Lee, 2021).

These figures demonstrate how the COVID-19 pandemic has jeopardized South Korea's domestic economy with a severe economic recession and a pressure for digital transformation. According to the research, local and global economic downfall caused by the pandemic has been the greatest economic downturn since the Great Depression (Government of the Republic of Korea, 2020a, 3). Although the South Korean government announced the Korean New Deal package to address various challenges caused by the pandemic, the initiative was less focused on environmental issues and prioritized socioeconomic aspects such as employment, digital economy and green industry, and social security (Government of the Republic of Korea, 2020a, 3-4). In particular, South Korea's national plan and initiatives for low carbon industry and net-zero targets were developed to meet the recommendations made by the Paris Agreement adopted 2015 which urged the signatories and parties to prepare and submit the Long-term low greenhouse gas Emission Development Strategies (LEDS) by 2020 to combat climate change (The Government of the Republic of Korea, 2020b, 6-7).

The cost and benefit of climate change also played a significant role in shaping the Moon administration's climate change governance. According to the International Monetary Fund's working paper on "Long-term Macroeconomic Effects of Climate Change: A Cross-country Analysis" published in October 2019, a continuous rise of average global temperature by 0.04°C will reduce the world's Gross Domestic Product (GDP) per capita by more than 7% by 2100 without proper mitigation and adaptation policies (Government of the Republic of Korea, 2020b, 22). Moreover, as developed countries accelerate the energy transition towards renewable energy, failure to implement appropriate and timely climate change policies can lead to stranded assets that worth 12 trillion USD policies (Government of the Republic of Korea, 2020b, 22).

The achievement of energy transition and efficiency is critical particularly for South Korea due its growing dependency on manufacturing, exports, and energy imports. The Statistics Korea reported that South Korea's export and manufacturing dependency increased from 23.3% and 23.5% in 1990 to 35.3% and 32.1% in 2017 policies (Government of the Republic of Korea, 2020b, 33-34). Hence, South Korea will not be able to meet its reduction GHG reduction goals and face irrevocable economic loss if energy transition and efficiency issues are not properly managed. Consequently, the Moon administration prioritized carbon neutrality and climate change as its national agenda to vitalize its "energy intensive industries such as steel, petrochemical, automobile, and semiconductor" (Government of the Republic of Korea, 2020b, 34).

From an international context, the Moon administration mainstreamed carbon neutrality and climate change governance to not only take global leadership on climate action based on greener economy, industry, and infrastructure but also to

protect its exported goods and products from international regulations such as the Carbon Border Adjustment Mechanism (CBAM) and the European Union (EU) Emissions Trading System (ETS) (European Commission, 2023). CBAM was agreed by the Council and the European Parliament in December 2022 and will enter its transitional phase on 1 October 2023 to impose carbon tariff on carbon-intensive goods and products that are imported from non-EU countries to encourage greener and cleaner industries especially for sectors with heavy carbon leakages (European Commission, 2023). Likewise, the United States also announced that its Fiscal Year 2022 budget reconciliation instructions will include a carbon border adjustment in July 2021 to join EU's efforts to exert pressure on heavy emitting and polluting industries and countries (C2ES, 2023).

As countries began to standardize and regularize carbon tariffs and tax into their industries and markets, the value of carbon market increased substantially from 186, 240, and 288 billion euros in 2018, 2019, and 2020 respectively to 760 billion euros in 2021. (Tiseo, 2023). As one of the countries to first initiate ETS, the Moon administration incorporated K-ETS into its 2050 Carbon Neutral Strategy to meet the reductions goals and maximize its economic interests in the emerging carbon market (Government of the Republic of Korea, 2020b, 37-38). For the third phase of K-ETS (2021-2025), the Moon administration aligned the total emissions target with the 2030 national emissions targets as mentioned in its Nationally Determined Contributions (NDC) and prepared a workplan which aims to enhance the synergies between K-ETS and international agreements such as the Paris Agreement (Government of the Republic of Korea, 2020b, 38-39).

Hence, the problem, policy, and politics stream for the Moon administration were siloed before the COVID-19 pandemic as the government did not prioritize

climate change as its national agenda. In early stage of the administration, President Moon continued to implement climate change policies by enhancing national NDC, fostering energy transition policies, carrying out phase 2 and 3 of K-ETS, and increasing the production of renewable energies. However, the climate change policies were not effective as the measures were intended to mitigate domestic fine dust and phase out from coal and nuclear power rather than to reduce GHG emissions (Kalinowski, 2021, 51).

In fact, climate change and carbon neutrality were elevated as national agendas when South Korea's economy was put under the pressure by the adverse effects of the COVID-19 outbreak which accelerated the process for transition to renewable energy, growth of carbon market and development of a LEDES as mandated by the Paris Agreement. The transition was further expedited by the publication of IPCC's Special Report on Global Warming of 1.5°C in 2018 which called for an immediate action to be taken by the international community to address climate crisis. Consequently, the COVID-19 and IPCC's special report provided a policy window for problem, policy, and politics stream for South Korea's climate change governance to merge into more holistic and comprehensive national action plans such as the Korean New Deal, the Long-term Greenhouse Gas Emission Development Strategy (LEDES), the 2050 Carbon Neutral Strategy of the Republic of Korea, and the Framework Act on Carbon Neutrality and Green Growth for Climate Crisis Response.

5.2. Modes of climate change governance

Lee Myung-bak Administration (2008-2013)

Although President Lee led South Korea's environmental and economic paradigm shift towards Low Carbon Green Growth, his administration relegated the Framework Act on Sustainable Development enacted in 2007 as the Sustainable Development Act after the enactment of the Framework Act on Low Carbon Green Growth (Bae, 2022, 4). As a result, President Lee was able to initiate South Korea's low carbon green growth based on industry- and market-oriented model rather than an environment-focused model (Kim J. H., 2022).

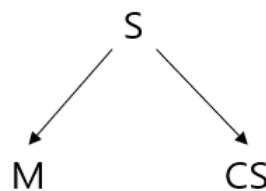
Under the Lee administration, the state and central government agencies took a leading role in shaping climate change governance. The roles and responsibilities of subsidiary agencies, stakeholders, and sectors were largely determined by the government to support national policies towards low carbon green growth. Hence, the decision-making processes, goal setting, and authority was made at the government level which was then delegated to local government, private sector, and civil society based on the Article 5, 6, 7 of the Framework Act which mandates each stakeholder to actively participate in the state's measures in realizing the low carbon green growth. For instance, Article 6 and Article 20 legislate local governments to enforce local low carbon green growth policies considering local contexts and operate a local committee on green growth governed by a mayor or governor.

In terms of the state's relationships with private sector (M) and civil society (CS), the Lee administration coordinated more closely with private sector as low carbon green growth was driven by market-based mechanisms which necessitated active participation and consensus from industrial and business sector. Such market-

based interaction between state and private sector led to a centralized form of governance with low carbon green growth policies implemented by the government through pluralistic means with various interest groups, mostly enterprises and companies, acting as policy entrepreneurs. In particular, energy and industry-related sectors had substantial role in climate change governance as the Lee administration mainstreamed market-based tools and mechanisms such as K-ETS to foster GHG emissions reduction. Moreover, a majority of non-public members of the Green Growth Committee had expertise in industry, business management, energy, and economics (Son et al., 2015, 526-527).

The Lee administration also organized a civil consultative group consisting of experts from civil society, industry, science, and local governments. Despite its intended role to further advance low carbon green growth agenda, the consultative group only conducted 6~7 meetings after its launch in 2009 with no other official activity or meeting in 2010 and after 2012 (Son et al., 2015, 528). Consequently, the central government led the climate change governance of South Korea by implementing market-based measures and coordinating closely with the private sector. The key features of the Lee administration’s mode of climate change governance are shown in Table 13.

Table 13. Model and features for centralized governance
(Driessen et al., 2012, 146-147)



S = Central State, M = Market, CS = Civil Society; —▶ = dominant role

Actor features	
Initiating actors	Central government agencies (or supranational bodies)
Stakeholder position	Stakeholder autonomy determined by principal agency
Policy level	(Supra)national state
Power base	Coercion; authority; legitimacy (democratic representation at the national level)
Institutional features	
Model of representation	Pluralist (popular (supra) national election and lobbying)
Rules of interaction	Formal rules (rule of law; fixed and clear procedures)
Mechanisms of social interaction	Top down; command and control
Features concerning content	
Goals and targets	Uniform goals and targets
Instruments	Legislation, permits, norms, and standards
Policy integration	Sectoral (policy sectors and levels separated)

Park Geun-hye Administration (2013-2017)

Under the Park administration, South Korea's climate change governance was weakened as exemplified by the relegation of the Green Growth Committee, dissolution of the Secretariat for the commission, and emergence of creative economy as the prime national agenda. Subsequently, the ministries on environment, finance, industry, and territorial policies removed the word 'green' from their

bureaus and divisions and downsized their workforce (Shin, 2013). As ‘creative economy’ emerged as the prime national agenda, South Korea’s climate change institutions, plans, policies and governance lost its momentum unlike its previous administration. In 2016, the Climate Action Tracker selected South Korea as one of the four ‘biggest climate villains’ in the world due to an increase in GHG emissions per capita, subsidies for overseas coal-fired power plants, and unambitious and ineffective GHG reduction plans (Kim J. H., 2022).

To begin with, the Park administration relegated the Presidential Commission on Green Growth to the Committee on Green Growth under the Prime Minister’s office and prioritized other domestic and foreign policies. In addition, the secretariat (also known as the task force) of the committee, which performed key administrative and operational functions, was abolished after the repeal of the Article 18 (Operationalization of Green Growth Task Force) of the Framework Act on Low Carbon Green Growth (Korean Law Information Center, 2010). Coincidentally, Ministry of Environment, Ministry of Trade, Industry & Energy, Ministry of Foreign Affairs, and Ministry of Strategy and Finance substantively reduced its functions and initiatives related to green growth (Kim, 2015, 6). Despite the Park administration’s indifference to green growth and climate change, President Park reassured South Korea’s commitment on its climate regime at the 21st UNFCCC Conference of the Parties (COP21) held in Paris in 2015 by announcing an enhanced GHG emissions reduction goal, an enlarged the role of international organizations especially the Green Climate Fund hosted by South Korea, and an active participation to global carbon market (UNFCCC, 2015).

Although the Park administration maintained centralized form of climate change governance with a decision-making power allotted mainly to the state

(government), the governance itself was ineffective and feeble as the government prioritized ‘creative economy’ as the national agenda rather than ‘low carbon green growth’ from its predecessor. Moreover, the government degraded the status and authority of associated legal and institutional frameworks which further weakened South Korea’s climate change governance and initiatives. Therefore, the structure and mode of climate change governance under President Park was similar to that of President Lee’s but with much less pressure, authority, and coercion from the central government.

Given the state’s reduced involvement and engagement in climate change governance, private sector and civil societies took a leading role (Lee, Jung & Choe, 2018, 90). For instance, the Korea Chamber of Commerce and Industry established the Business Institute of Sustainable Development. In addition, a group of Korean private businesses formed the Korea Business Council for Sustainable Development to continue the coalition for climate change governance (Lee, Jung & Choe, 2018, 90). Nevertheless, such trend was largely motivated by available market opportunities set by national mitigation and adaptation plans and international agreements under the Lee administration (Lee, Jung & Choe, 2018, 90). In particular, South Korea’s private sector was mainly driven by the Kyoto Protocol, the Framework Act on Low Carbon Green Growth, and its affiliated green growth policies to maximize its profit and incentives even though the Park administration did not express much interest in such policies (Lee, Jung & Choe, 2018, 90).

In addition, civil society including NGOs, research institutes, and academia played an active role in climate change governance despite the government’s indifference on the agenda. For instance, the Korea Federation for Environmental Movements (KFEM), an association of environmental groups in Korea, consisted of

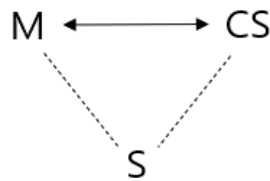
more than 85,000 members and launched various environmental campaigns especially against the construction of new nuclear power plants (Kalinowski, 2021, 58). These environmental groups contributed to the agenda-setting process by participating in policy and political dialogues. On an international level, the civil society increased the number of observers at the UNFCCC COP meetings to follow up with most recent global climate trends (Lee, Jung & Choe, 2018, 90-91).

Although environmental groups continued to be involved in the decision-making processes, their influence was still limited given the government's disinterest in climate change governance (Lee, Jung & Choe, 2018, 90-91). According to Kalinowski (2021, 58-59), there are three main reasons for civil society's insignificant contribution to Korea's climate change governance. First, the political and policy agenda in South Korea was still dominated and predetermined by the government. Second, environmental groups lacked sufficient political power to facilitate policy changes within the government (Kalinowski, 2021, 58-59). Lastly, civil societies in Korea were mostly involved in advocating and promoting democracy and social welfare rather than on environmental protection. Consequently, environmental groups lacked substantive political power and pressure to drive critical policy change and social awareness (Kalinowski, 2021, 58-59). Hence, environmental groups mainly focused on launching social movements to raise public awareness for issues related to climate change.

In sum, the Park administration demonstrated weak political will on further pursuing low carbon green growth as a national agenda while private sector and civil society enlarged its role in advancing Korea's climate change governance. Although South Korea's climate change policies and targets were largely predetermined by the government under formal rules and regulations, private sector and civil society

organized coalitions to establish its own informal rules and targets through voluntary commitments. In sum, the mode of climate change governance during the Park administration can be delineated as ‘self-governance’ with private sector (market) and civil society as initiating actors.

Table 14. Model and features for self-governance (Driessen et al., 2012, 146-147)



S = Central State, M = Market, CS = Civil Society
 ←→ = equivalent role; - - - - = background role

Actor features	
Initiating actors	Private sector and/or civil society
Stakeholder position	Self-governing entities determine the involvement of other stakeholders
Policy level	Local to international level
Power base	Autonomy; leadership; group size; social capital; legitimacy (agreement on relations and procedures)
Institutional features	
Model of representation	Partnership (participatory private-private governing arrangements)
Rules of interaction	Informal rules (norms; culture); self-crafted (non-imposed) formal rules
Mechanisms of social interaction	Bottom up: social learning, deliberations and negotiations

Features concerning content	
Goals and targets	Tailor-made goals and targets
Instruments	Voluntary instruments; private contracts; entitlements; labelling and reporting
Policy integration	Sectorial to integrated (depends on problem framing by communities of interest)

Moon Jae-in Administration (2017-2022)

When President Moon was elected in 2017, he strongly advocated and pledged for phase-out of nuclear power and increase of renewable energy (Kim, 2020, 14). For the process, the Moon administration involved civic groups and citizens into decision-making process by using a ‘deliberative polling method’ (Kim, 2020, 14). For the poll, 471 non-expert citizens were selected randomly yet scientifically to deliberate on the issue for thirty-three days before voting for or against the construction of two nuclear power points at Shin-Kori (Kim, 2020, 14). As a result, 60% of the voters advocated the construction and 53.2% voted to reduce the share of nuclear energy (Kim, 2020, 14). Based on this poll, the Moon administration decided to continue the construction of two new nuclear power plants but cancel the construction of additional nuclear power plants that would follow (Kim, 2020, 14). This was the very first occasion in which non-expert citizens were involved in the critical decision-making process for a “highly technical and complex” national energy agenda (Kim, 2020, 14).

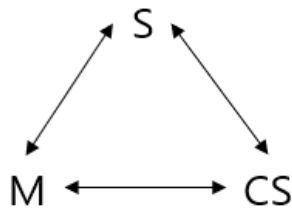
To further increase civic engagement in climate change policies and carbon neutrality, the Moon administration launched the 2050 Carbon Neutrality and Green Growth Committee which included the civil policy participation group consisting of civilians selected randomly while considering their gender, age, and region (Lee &

Ryu, 2021, 2). The committee also organized a separate civilian commission composed of 11 committee members from industry, labor group, civil society, youth, and local government (Lee & Ryu, 2021, 4).

While the civilian commission is responsible for public education, campaign, and communications to maximize participation from different regions and future generation, the civil policy participation group was created to increase civic engagement in policymaking process through deliberation, dialogues, and discussions (Lee & Ryu, 2021, 4, 6). Through these efforts, the Moon administration tried to earn public consensus and support for its carbon neutrality initiatives as a means to foster more consistent, sustainable and transparent policy implementation and engaging the youth to share the long-term visions for 2050 carbon neutrality targets (Lee & Ryu, 2021, 5). Ultimately, the Moon administration aimed to gain support for its nation-wide initiatives such as the Green New Deal.

From these observations, the Moon administration's governance type can be defined as 'Interactive Governance' described by Driessen et al. (2012, 146-147). According to the framework for interactive governance, the relationship between central state (government), market, and civil society can be shown below. The interactive governance proposes that the decision-making and policymaking processes are mostly driven by close dialogues, negotiations, and agreement among the stakeholders to promote integrated, transdisciplinary, and cross-sectoral solutions for addressing climate change challenges. The interactive governance also encourages public-private partnership based on networks to maximize intranational multilateralism. However, formal rules still exert substantive amount of power by laying out fundamental rules for interactions and guaranteeing equal representation from multiple actors.

Table 15. Model and features for interactive governance
(Driessen et al., 2012, 146-147)



S = Central State, M = Market, CS = Civil Society; \longleftrightarrow = equivalent role

Actor features	
Initiating actors	Multiple actors: government, private sector and civil society
Stakeholder position	Equal roles for all network partners
Policy level	Multiple levels
Power base	Legitimacy (agreement on roles, positions, procedures, and process); trust; knowledge
Institutional features	
Model of representation	Partnership (participatory public-private governing arrangements)
Rules of interaction	Institutions in its broadest form (formal and informal rules)
Mechanisms of social interaction	Interactive: social learning, deliberations, and negotiations
Features concerning content	
Goals and targets	Tailor-made and integrated goals and targets
Instruments	Negotiated agreements; trading mechanisms; covenants; entitlements
Policy integration	Integrated (policy sectors and policy levels integrated)

Based on the observation and analysis, the changes in ‘actor’, ‘institutional’, and ‘content’ features for the three administrations can be summarized as shown in Table 16, 17, and 18. During the Lee administration, the climate change governance was mainly carried out by the central government in which the functions and roles of relevant state- and non-state actors were determined by the state. For instance, the government took a leading role in developing and implementing the K-ETS and engaging industrial and private sector to participate in the mechanism through legitimacy and legislation.

During the Park administration, the climate change governance was led by private sector and civil society due to the central government’s focus on other national agendas. Consequently, the private sector and civil society began its own coalition to set up voluntary commitments to continue national climate initiatives and abide to international agreements. Meanwhile, the government became indifferent to climate change issues by relegating the Committee to a prime-ministerial level and dissolving the secretariat of the committee. Hence, the climate change governance was led by non-governmental coalitions which exerted economic and social influence in a society.

During the Moon administration, the government mainstreamed carbon neutrality as its national agenda and expanded the role of the Carbon Neutrality Commission by engaging private sector and civil society into decision-making processes. Therefore, the stakeholder position was relatively more equal compared to that of previous administrations. The initiatives and policies became more participatory and multi-level with more stakeholders involved. Hence, the size of the Commission and its secretariat increased substantively with a greater number of committee members, sub-committees, and divisions.

Table 16. Changes in ‘actor features’

Actor features	Initiating actors	Stakeholder position	Policy level	Power base
Lee Myung-bak Administration (2008-2013)	Central government agencies (or supranational bodies)	Stakeholder autonomy determined by principal agency	(Supra)national state	Coercion; authority; legitimacy
Park Geun-hye Administration (2013-2017)	Private sector and/or civil society	Autonomy determined by self-governing entities	Local to international level	Autonomy; leadership; group size; social capital; legitimacy
Moon Jae-in Administration (2017-2022)	Government, private sector and civil society	Equal roles for all network partners	Multiple levels	Legitimacy; trust; knowledge

Likewise, each administration revealed different institutional features in terms of model of representation, rules of interaction, and mechanisms of social interaction. Under the Lee administration, South Korea’s climate change governance was predominantly led by the government under the Framework Act on Low Carbon Green Growth through deliberate policy coordination between the state, the Presidential Commission on Green Growth, and the private sector to derive low carbon green growth policies based on market mechanisms. Hence, the Framework Act laid out clear roles and responsibilities for each sector to manage climate change governance with a more centralized and top-down approach.

During the Park administration, climate change governance was carried out at a lower level through a bottom-up approach as the Green Growth Committee became dysfunctional after the dissolution of the secretariat. Hence, non-governmental

actors from private sector and civil society organized their own coalition to continue climate change initiatives and action through informal rules and voluntary commitments. Nevertheless, the Framework Act itself was not abolished, so the actors still followed legal frameworks established by the government.

The Moon administration advocated more participatory and interactive governance in which non-state actors and groups were actively involved in decision-making processes. In addition, the government endorsed social learning for civic groups so that the public can have more accessible information and data on the policies on carbon neutrality through public hearings and civic participation group within the Carbon Neutrality Commission. Consequently, the Framework Act and the Commission became more sophisticated to reflect the government’s will to establish more inclusive climate change governance.

Table 17. Changes in ‘institutional features’

Institutional features	Model of representation	Rules of interaction	Mechanisms of social interaction
Lee Myung-bak Administration (2008-2013)	Pluralist (popular (supra) national election and lobbying)	Formal rules (rule of law; fixed and clear procedures)	Top down; command and control
Park Geun-hye Administration (2013-2017)	Partnership (participatory private-private)	Informal rules (norms; culture); self-crafted (non-imposed) formal rules	Bottom up: social learning, deliberations and negotiations
Moon Jae-in Administration (2017-2022)	Partnership (participatory public-private)	Formal and informal rules	Interactive: social learning, deliberations, and negotiations

In terms of ‘content’ features, the Lee administration implemented government-led GHG emissions reduction goals and related policies such as the Greenhouse Gas Energy Target Management System, K-ETS, and Measurement, Reporting, and Verification (MRV) system (Yun & Won, 2012, 8-9). The management system was a coercive regulatory measure which legislated all industries to follow regardless of their will. Despite the opposition from industries, the Lee administration carried out these measures to consolidate low carbon green growth as the new economic engine for South Korea (Yun & Won, 2012, 9). However, the policy sectors and levels were siloed and did not promote a high degree of policy integration which reflects voices from private sector and civil society.

During the Park administration, the goals and targets were mainly established by each sector without significant government intervention. As described, the Lee administration’s low carbon green growth initiatives regressed during the Park administration as the government deferred a carbon tax deliberated by President Lee. This was largely due to the Park administration’s apparent efforts to distance itself from the Lee administration as the public and civil society opposed President Lee’s policies on nuclear energy and the Four-River Project (Downer et al., 2022, 55).

The Moon administration took a more integrated approach for establishing goals, policies, and implementation instruments as evident in the Korean New Deal and the 2050 Carbon Neutrality Strategy which are comprehensive cross-sectoral initiatives that aim to cover all sectors and levels of society (Downer et al., 2022, 57-58). The national plans were designed to address various issues related to economy, environment, social security, science and technology, and public health. Therefore, the government strongly advocated energy mix policies and smart grids to promote green economy, infrastructure, businesses, and technologies.

Table 18. Changes in ‘features concerning content’

Features concerning content	Goals	Instruments	Policy integration
Lee Myung-bak Administration (2008-2013)	Uniform goals and targets	Legislation, permits, norms, and standards	Sectoral (policy sectors and levels separated)
Park Geun-hye Administration (2013-2017)	Tailor-made goals and targets	Voluntary instruments; private contracts; entitlements; labelling and reporting	Sectorial to integrated (depends on problem framing by communities of interest)
Moon Jae-in Administration (2017-2022)	Tailor-made and integrated goals and targets	Negotiated agreements; trading mechanisms; covenants; entitlements	Integrated (policy sectors and policy levels integrated)

5.3. Theoretical and policy implications

As mentioned earlier, South Korea was the first non-Annex 1 country to submit a national GHG emissions reduction goal voluntarily under the Lee administration in 2008. This may seem rather peculiar as South Korea’s economy was mainly based on carbon-intensive industries such as heavy metals, shipbuilding, and manufacturing. Through Kingdon’s multi-stream framework, this research described how Low Carbon Green Growth was elevated as the prime national agenda through the Lee administration’s strong political will for changing the economic engine and taking a global leadership on low carbon and green industry and economy in midst of the 2007-2008 Financial Crisis when the world economy plunged. As a result, South Korea’s climate change governance was strengthened substantially which led

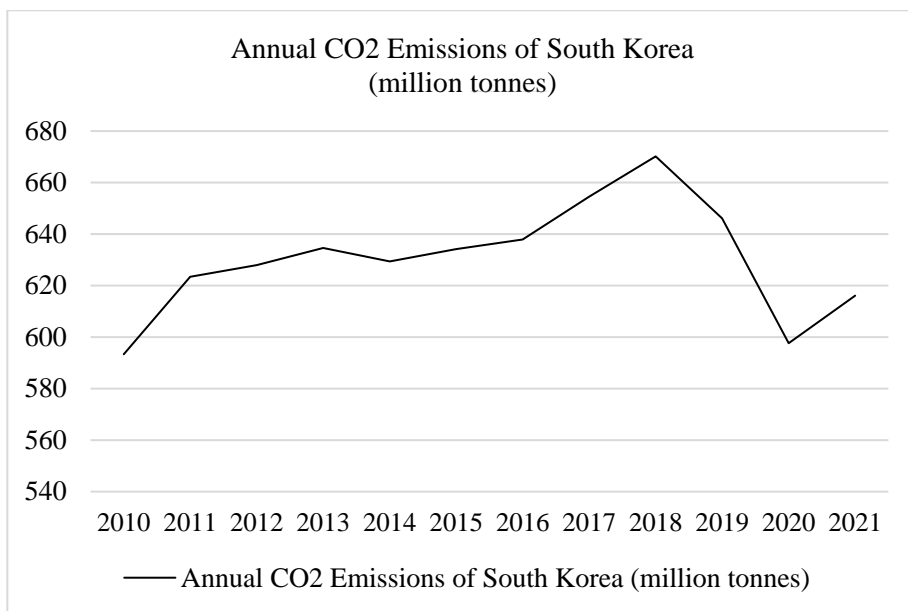
to formulation of climate-related policies. During the Park administration, creative economy emerged as the new paradigm for economic driver to facilitate more innovative economic development and strategies while deviating from its predecessor's initiative on low carbon green growth. Such transition led to weakening of climate change governance on a national and international level. During the Moon administration, carbon neutrality emerged as the core national agenda to build more carbon neutral society and sustainable economy based on multistakeholder participation in decision-making processes. Each administration pursued different approaches for governing climate change issues and policies – centralized, self, and interactive governance.

Nevertheless, this research revealed that the *political stream*, especially the change in administration, plays a significant role in shaping the mode of climate change governance by altering legal and institutional frameworks. Every time when the administration changed, the climate change governance was affected accordingly which made the governance to become inconsistent and incoherent. In addition, 'economic development' remained as an important national agenda which affected the implementation of climate change policies in all three administrations – the Lee administration considered low carbon green growth as a new growth engine for economic development, the Park administration pursued 'creative economy' which involved industries that combined low carbon technology with other scientific innovations such as information and communication technology, and the Moon administration aspired to achieve more sustainable economy and resilient society through carbon neutrality (Chung & Lee, 2022, 2-8). Hence, this entails that the mode of climate change governance can be characterized by closely observing how legal and institutional frameworks for governing climate change issues are

established in each administration and political implications that may influence the agenda-setting and decision-making processes.

Despite the efforts by three administrations, the amount of annual CO₂ emissions from 2010 to 2021 in South Korea increased gradually. The temporary reduction from 2018 to 2020 was largely due to impacts of the COVID-19 which led to substantive global economic and industrial downfall and stagnation as a result of quarantine and border control. When the COVID-19 began to fade away, the CO₂ emissions immediately increased by 18.44 million tonnes (Ritchie & Roser, 2022). Therefore, this entails that climate change governance during three administrations were not successful despite different approaches and measures taken to reduce national CO₂ emissions.

Table 19. South Korea's Annual CO₂ emission from 2010 to 2021
(Ritchie & Roser, 2022)



5.4. Recommendations

Following the Moon administration, President Yoon Suk Yeol started his term on 10 May 2022. Similar to previous administrations, the change of administration and shift of political power from democratic party to conservative party are expected to influence South Korea's climate change policies. As a part of his presidential campaign, President Yoon pledged to develop a data-based Nationally Determined Contributions (NDCs) through scientific innovation and technology such as Carbon Capture, Utilization, and Storage (CCUS). In particular, President Yoon accentuated investments in nuclear and clean energy technology to achieve net-zero (Chung & Lee, 2022, 9). As a result, the concept of 'green growth' returned as one of the key agenda. This is yet another sharp policy diversion from the Moon administration which opposed the expansion of nuclear energy. In addition, the Yoon administration kept a NDC goal from the Moon administration to reduce carbon dioxide emissions by 40 percent (436.6 million tons) by 2030 to that of in 2018 (727.6 million tons) and lowered the reduction target for industrial emission from 14.5 percent in 2021 to 11.4 percent (Shin, 2023).

As mentioned earlier, climate change is a complex issue which needs to be addressed by both state and non-state actors. Hence, the central government should engage private sector and civil society and construct a cross-sectoral system for ensuring strong policy coordination and transparency. Furthermore, the government should prioritize policy coherence to prevent climate-related agenda and policies from shifting every time the administration changes. Most importantly, the 2050 Carbon Neutrality and Green Growth Commission should enlarge participation from private sector and civil society and ensure continuity of the Commission's roles and

responsibilities by increasing the ratio of non-state committee members comprised of experts from different sectors while reducing the number of ex-officio committee members. The current size of the Commission may actually impede and hinder its function having too many committee members that is constantly changing. Ideally, the central government should guarantee the Commission with legal-binding functions while delegating authorities beyond just deliberation and minimizing state intervention. Therefore, the Commission should be small-sized and independent from political realm to avoid being affected by a ruling political party and maximize its efficiency.

Moreover, the goal-setting and decision-making processes should not be made unilaterally but should be established through agreements and negotiations among the stakeholders for South Korea's climate change governance to be successful. In terms of its functions, the Commission should establish long-term and cross-sectoral plans to reduce GHG emissions. In addition, the Commission should be given responsibilities to perform evaluation and assessment on monitoring the implementation progress, continuity, feasibility, accountability, and appropriateness of climate change initiatives and policies. Lastly, the Commission should strengthen international cooperation to join global climate action disseminate South Korea's progress on GHG emission reduction and accelerate global progress on achieving carbon neutral society.

Chapter 6. Conclusion

6.1. Summary

This qualitative research described South Korea's legal and institutional

frameworks on climate change and identified the mode of climate change governance for three administrations: Lee Myung-bak (2008-2013), Park Geun-hye (2013-2017), and Moon Jae-in (2017-2022) by using the multi-stream framework for agenda-setting process and the modes of governance stipulated by Kingdon and Driessen et al. (2012) respectively. For the research scope, the paper focused on analyzing how legal frameworks (Framework Act on Low Carbon Green Growth and Framework Act on Carbon Neutrality and Green Growth for Coping with Climate Crisis) had impacts on shaping institutional frameworks (Presidential Commission on Low Carbon Green Growth, Commission on Green Growth, and 2050 Carbon Neutrality and Green Growth Committee).

The analysis identified that the Lee administration mainstreamed Low Carbon Green Growth to revitalize the economy at the time of global financial crisis and take global leadership on climate action. Hence, the commission was given a deliberative function to review national strategies and plans on green growth. Based on the legal frameworks, the commission contributed to the implementation of green growth and climate change initiatives through a centralized form of climate change governance. As a result, the government strengthened its relationship with business sector to implement the K-ETS and devoted itself in advancing low carbon technology to realize green economy and infrastructure. Under the Lee administration, South Korea climate change governance was centralized in which the government had a dominant role on private sector and civil society.

However, the climate change governance was significantly weakened during the Park administration as the government prioritized creative economy and job creation rather than green growth or climate change. The Committee on Green Growth was relegated to the Prime Minister's office and the government

implemented policies that were against that of the previous administration. Consequently, the private sector and civil society (NGOs, research institutes, and academia) took the leadership in climate change governance to adapt to market-based global climate action recommended by the Kyoto Protocol and the Paris Agreement while increasing civic participation and awareness on climate change issues. Therefore, the climate change governance under the Park administration demonstrated characteristics of ‘self-governance’.

In the beginning of the administration, President Moon was indifferent to climate change issues and focused on fine dust issues and phasing out of nuclear power. However, after the release of IPCC Special Report on Global Warming of 1.5°C and the COVID-19 outbreak, the government took a drastic turn. Along with other countries, South Korea announced to achieve carbon neutrality by 2050 and implemented the Korean New Deal. Hence, the government abolished the Framework Act on Low Carbon Green Growth and enacted the Framework Act on Carbon Neutrality and Green Growth for Coping with Climate Crisis and launched the 2050 Carbon Neutrality Commission. Under the new legal and institutional framework, South Korea’s climate change governance was redefined and aimed to promote carbon neutrality, climate mitigation and adaptation, climate resilience, and just transition by strengthening the role of the commission as a deliberative body with substantive decision-making power. The size and composition of the commission became larger and more sophisticated with a greater number of committee members and diversified subcommittees and secretariat. The framework act also improved the participation of private sector and civil society by establishing the civil policy participation group and commission council to facilitate ‘interactive governance’ based on social learning and cross-sectoral coordination.

6.2. Limitations

This research aimed to analyze South Korea's climate change governance during Lee Myung-bak, Park Geun-hye, and Moon Jae-in administration (2008-2022) with a focus on legal and institutional frameworks. However, the research cannot generalize the entirety of South Korea's climate change governance as the components of determining climate change governance is much more diverse and sophisticated. Furthermore, the study is limited only to South Korea, so it may not be applicable for a comparative analysis within or between other countries.

In addition, this research did not consider other factors such as finance, budget, investment, government expenditure, public awareness, and a level of multilateral cooperation. Hence, future studies can further enrich the literature by taking either a quantitative approach to assess how changes in climate change related budget, finance, and investment can determine the mode of governance. In addition, a qualitative research and survey on measuring how changes in public awareness or a level of multilateral cooperation have impacts on climate change governance could further enhance the literature.

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요약(국문초록)

교토의정서가 1997년에 채택된 이후 국제사회는 본격적으로 기후변화문제에 대한 해결을 위해 기후변화 거버넌스 체계를 확립하고자 하는 노력을 기울이고 있다. 특히, 기후변화에 관한 정부 간 협의체(IPCC)에서 발표한 평가 및 특별보고서는 2015년 파리협정을 포함한 여러 기후변화 관련 국제협약과 국가계획의 도입과 제도화 과정에 결정적인 과학적인 근거를 제시하였다. 특히, IPCC에서 2018년에 발표한 지구온난화 1.5°C 특별보고서는 인위적으로 발생하는 온실가스가 지구온난화에 미치는 영향에 대해서 기술하고 국제사회가 지구온난화를 2100년까지 1.5°C내로 억제하지 못할 경우 발생하는 이상 기후 및 자연재해에 대해서 경고하고 있다.

대한민국 또한 지난 30년간 평균온도가 1.4°C이상 상승하면서 지구온난화로 인한 기후변화를 겪고 있다. 기후변화 거버넌스가 국제사회에서 주요 의제로 부상하면서 대한민국 또한 2008년 이명박 정부에서 ‘저탄소 녹색성장’을 핵심의제로 설정한 것을 기점으로 기후변화 거버넌스를 본격화하였다. 2008년 이전의 대한민국 정부는 경제 및 산업발전을 핵심의제로 수립해왔기 때문에 대한민국의 기후변화 관련 의제설정과정과 거버넌스 유형이 수립되는 과정을 기술하는 연구가 필요하다.

이와 같은 배경으로 본 연구에서는 저탄소 녹색성장을 앞세운 이명박 정부(2008-2013), 창조경제를 강조한 박근혜 정부(2013-2017),

그리고 탄소중립을 의제화 한 문재인 정부(2017-2022)를 중심으로 대한민국의 기후변화 거버넌스의 설정과정과 유형을 각 정권의 기후변화 관련 법과 이를 근거로 설치된 정부위원회를 연구범위로 설정하였고 Kingdon의 의제설정이론, Lange et al.의 거버넌스 유형에 대한 프레임워크, 그리고 Driessen et al.의 거버넌스 모델을 통해 분석하였다.

거버넌스는 정부를 포함한 다양한 정책행위자의 참여와 조정과정을 걸쳐 체계화되고 확립되지만 이에 대한 법적근거와 정부위원회가 부재하다면 그에 대한 실효성과 적법성을 보장하기 어렵다. 이 연구에서는 각 정권이 제정 및 개정한 기후변화 관련 법을 분석하고 그에 따라 설립된 정부위원회의 역할, 성격 및 구성을 토대로 각 정권의 기후변화 거버넌스 유형을 확인하였다.

주요어 : 거버넌스, 기후변화 거버넌스, 의제설정이론, 거버넌스 유형

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