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The Role of Government in the Implementation of Corporate Voluntary Climate Initiatives: The Case of Samsung's RE100 in Korea*

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Abstract

As the adverse effects of climate change extend beyond states to various non-state actors worldwide, multinational corporations have begun adopting voluntary initiatives to mitigate climate risks and align with global climate governance. Among these, RE100 represents a leading voluntary campaign that encourages companies to commit to 100% renewable electricity procurement. While existing research on RE100 has predominantly focused on corporate motivations for participating in the initiative, the role of governments in facilitating or constraining its implementation remains underexplored. This case study addresses this gap by examining Samsung's RE100 implementation within the policy and institutional context of South Korea. This study highlights how limited policy support and regulatory constraints from the Korean government have hindered the progress of Samsung's domestic RE100 implementation, especially in contrast to its achievements in overseas operations. The case study demonstrates that even market-driven, voluntary climate initiatives require enabling institutional conditions, particularly in developmental states like South Korea, where governmental influence remains decisive.

Keywords

climate change, Korea, RE100, Samsung, voluntary climate initiative

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Ⅰ. Introduction

Since the first international agreement on climate change was adopted at the Rio Earth Summit in 1992, governments around the world have established international regimes such as the Kyoto Protocol and the Paris Agreement, and have implemented various climate mitigation and adaptation strategies. Various non-state actors such as environmental non-governmental organizations and corporate entities have joined these governmental and intergovernmental efforts. Thus, the contemporary global climate governance is often described as multi-actor and multi-scale governance, consisting of diverse actors operating at multiple levels (Hale et al., 2020; Kuramochi et al., 2020).

Among the various non-state actors, this study focuses on corporate entities as they constitute a major source of global greenhouse gas (GHG) emissions (Dietz et al., 2018). Riley (2017) estimates that just 100 global companies account for approximately 71% of global emissions. One can also gauge the impact of global corporations on climate change from the market capitalization values of multinational corporations (MNCs). For instance, Apple's market value ranked as the world's 7th largest economy—after the US, China, Japan, Germany, the UK, India, and France—highlighting the potential magnitude of its impact on climate change.

Given such impact, MNCs have been considered one of the major culprits of environmental calamities, including climate change (Adeola, 2017; Ives, 2017). However, some global MNCs have begun to internalize climate responses at the firm level more recently. The RE100 campaign is one of the most prominent voluntary initiatives that MNCs have joined to reduce GHG emissions through the procurement of renewable electricity (Egli et al., 2023). Today, approximately 440 MNCs are participating in the initiative, aiming to expand their electricity consumption from renewable sources.

Many existing studies have examined corporate motivations for participation in RE100 as will be introduced in the literature review section. However, there has been relatively little in-depth examination of the role of governments in the implementation of voluntary corporate initiatives like RE100. This study seeks to address this gap by analyzing Samsung's RE100 implementation within the policy context of South Korea.

This study explores the idea that governments and their roles are critical for the orderly and effective implementation of voluntary corporate climate actions through the case of Samsung's RE100 implementation in Korea. Korea is an appropriate country case for examining the government's role as it has achieved its economic growth and development under the developmental state model, in which the central government has played a pivotal role as a facilitator of corporate competitiveness and national economic growth by creating a conducive policy environment (Fields, 2012; Chu, 2021). Under such a model, corporations such as Samsung have grown into global giants embedded in collaborative relationships with the government. Even in the environmental policy domain, the government has played a proactive role by nudging corporations to adopt ambitious and innovative environmental targets and green technology, as such actions are considered indicators of national competitiveness and future growth (Kim & Thurbon, 2015; Kalinowski, 2021). Given this tendency, one can expect Korean firms to benefit from cooperative relationships with the government in the execution of green energy initiatives, such as RE100. That is, Korea provides a useful case for observing government-corporate interactions in the context of RE100 implementation.

The case of RE100 implementation by Samsung is particularly interesting as it accounts for almost 20% of Korea's GDP. As both a Korean company and global MNC, Samsung joined the RE100 initiative in 2022 to reduce its carbon footprint from energy consumption and demonstrate its global competitiveness not only in technology, but also in the sustainability arena. However, the RE100

execution of Samsung has not taken place in a policy vacuum, as it has been embedded in the policy environment established by the government. Thus, the case of Samsung's RE100 implementation in Korea will demonstrate the critical role of government in shaping the climate and green energy policy environment for RE100.

The remainder of this paper is structured as follows. The next section provides a brief overview of the RE100 campaign, followed by a review of the existing literature on corporate participation and the role of governments. The subsequent section examines Samsung's implementation of RE100 both domestically and internationally, with particular emphasis on how its sluggish progress in Korea reflects the broader energy policy environment shaped by the government. The final section summarizes the key findings and discusses their policy implications.

II. RE100: Concept and Literature Review

1. RE100

RE100 is based on the idea that corporations should engage in global green energy transition to tackle climate change. It was launched by the Climate Group (CG) and Carbon Disclosure Project (CDP), international nonprofit organizations, with the goal of accelerating change towards zero-carbon grids at scale by bringing together the world's most influential businesses committed to 100% renewable electricity (RE100 website). By joining RE100, firms make a public commitment to sourcing or having already sourced 100% renewable electricity throughout their operations and publicly declare a target year, with 2050 being the latest.

Eligible companies should be large, reputable brands or MNCs with annual

electricity demand of 100GWh or more. While only a few hundred MNCs meet the criteria to join the RE100 initiative, they can create ripple effects across global markets, facilitating the transition to green energy for downstream companies in the supply chains and in the market and industry. Apple, for instance, achieved its RE100 goal in 2018 and pledged to achieve carbon neutrality throughout its entire supply chain by 2030. Since Apple's supply chain partners account for more than 75% of its global GHG emissions (Park S., 2022a), they need to fulfill similar carbon neutrality goals (Park, 2021).

The year 2014 was the first year that companies such as H&M and Nestle joined the campaign. As of January 2025, there were 438 members participating in the initiative. According to the official website of RE100, RE100 membership grew from 12 in 2014 to 33 in 2015, with a sharp rise from 39 to 63 between 2018 and 2019. As globally prominent corporations began to join campaign, other MNCs followed suit, reinforcing the normative pressure to adopt and internalize RE100 as a voluntary climate-related norm.

Despite the concern that corporate climate actions are mere acts of greenwashing (Coen et al., 2022), companies participating in RE100 have been on track to achieve their renewable energy targets. The CDP advise firms to reach 60% renewable energy transition by 2030 and 100% by 2050, and most corporations have made steady progress towards achieving these ratios. The 2021 RE100 annual disclosure report shows how 61 of 315 companies have already achieved a 100% renewable energy transition. Corporate participants in the RE100 initiative are expected to procure 7.7% of the globally projected renewable energy by 2030 (Egli, 2023).

2. Literature Review

Existing studies suggest that various factors determine climate responses of corporations. First, there are exogenous factors, such as vulnerability to climate change, relationships with the government, and social relations and pressure. For

instance, trends such as Corporate Social Responsibility (CSR) and Environment, Society and Governance (ESG) management have been exerting social pressure on corporations to go green and reduce their environmental impacts (Stadelmann & Gangneux, 2022). In particular, the recent rise of ESG trends has increased pressure on firms from financial institutions and investors to reduce emissions and demonstrate sustainable management practices. More directly related to the industry, factors such as competition intensity and growth rate can induce firms to adopt climate-friendly policies. Companies are also motivated by reputation concerns, such as their reputation in carbon management (Kuo & Chang, 2021).

Endogenous factors, such as corporate culture, risk perception, and risk management capacity, technological innovation, and diversification history, also affect firms' climate responses and strategies (Cadez et al., 2019; Dahlmann et al., 2019). Some companies are motivated to achieve substantive emission reduction targets, whereas others aim to cultivate a positive perception from their shareholders by adopting climate-friendly actions (Littlewood et al., 2018; Dahlmann et al., 2019). Thus, not only external motivations but also the intrinsic goals of addressing climate change have driven corporations to adopt corporate climate goals and exert efforts to achieve carbon neutrality targets (Dietz et al., 2018; Egli et al., 2023).

Many studies have thus examined why firms participate in voluntary green and climate initiatives at the firm level (Littlewood et al., 2018; Cadez et al., 2019; Dahlmann et al., 2019; Kuo & Chang, 2021). However, not much research has discussed how the government and the national policy context shaped by government can influence the implementation of corporate climate initiatives. This study aims to address this gap by demonstrating how the corporate sector still needs to collaborate with governments and align corporate and governmental climate goals to achieve their goals in voluntary climate initiatives like RE100 (Krabbe et al., 2015).

Governments play critical roles in RE100 by setting up facilitatory regulatory

measures, such as those allowing power purchasing agreements (PPAs) that help RE100 participants to purchase electricity from producers of renewable energy. As of 2020, firms participating in RE100 procured renewable energy-sourced electricity mainly through the purchase of certificates, PPAs, and green tariffs, while only about 3% of RE was provided through self-generation (Park, S., 2022a). However, these measures do not emerge naturally. Governments need to create and reinforce relevant institutional, regulatory, and policy settings for such measures to be made available for corporations.

Various existing studies have discussed the roles that governments play in effective renewable energy procurement. Abdmouleh et al. (2015) argue that financial, fiscal, political, legislative, and technological support from the government influence renewable energy development and expansion. The authors argue that an encouraging legal and regulatory framework and continuous political support from the government are particularly critical. Bird et al. (2017) discuss how policy and regulatory factors can create an enabling environment for corporate sourcing of renewables. The study finds that policy certainty is essential for creating vibrant renewable energy markets. Kruger et al. (2024) argue that fossil lock-in, unsupportive policies, regulatory uncertainty, and a weak nexus between planning and procurement can serve as barriers to renewable energy procurement and undermine investor trust. Ayele et al. (2024) also discuss how procurement through private suppliers inevitably necessitates a competent governance arrangement aware of the suitability of the energy sector structure for transition.

While these studies highlight the critical role of governments in the successful implementation of voluntary corporate climate initiatives, there remains a lack of literature examining real-world cases that illustrate how governments can either hinder or facilitate corporate low-carbon transitions. Furthermore, there remains a need for research on how non-Western firms implement RE100 within non-Western policy and market environments, which would enrich the existing

literature. Thus, the following case study of Samsung's RE100 implementation in Korea will shed light on the critical roles that governments play in shaping the climate and green energy policy environment for RE100.

III. Samsung's RE100 Implementation

It was in 2020 that companies headquartered in Korea began joining the RE100 campaign. As of May 2025, 36 Korean companies are participating in the initiative. As the RE100 campaign gained global recognition and more Korean conglomerates joined, the Korean government launched the K-RE100 in 2021. This initiative introduced various mechanisms helping firms implement RE100: green premium (a system in which electricity consumers pay an additional fee for purchasing renewable energy through bidding), Renewable Energy Certificate (REC, providing proof that electricity comes from renewable sources), PPA (a contract allowing consumers to purchase power directly from Korea Electric Power Corporation, KEPCO, Korea's largest electric utility company, or from other renewable energy producers), and self-generation of renewable energy, among others. While global firms must meet stringent criteria to join the RE100 campaign, K-RE100 extends participation to small and medium-sized enterprises, public institutions, and local governments, integrating RE100 into Korea's domestic energy policy setting. As of March 2025, approximately 842 to 862 Korean companies had joined the program.

RE100 has gained even more prominence in Korea after Samsung became the 23rd Korean company to join the campaign. Given that Samsung's electricity consumption exceeded the combined consumption of the top three Korean companies already participating in RE100 (Park, S., 2022a), its involvement was expected to have a significant impact on Korea's renewable energy sector.

As the largest electricity consumer in Korea, Samsung has seen its GHG

emissions rise continually (Table 1). Concerned about this growth, Samsung Electronics adopted a New Environmental Strategy in September 2022, pledging to achieve net-zero carbon emissions in both Scope 1 and Scope 2 by 2050. In the same year, the company officially joined the RE100 campaign.

〈Table 1〉 Samsung's Greenhouse Gas Emissions (Unit: 1000t CO_2 eq)

	2019	2020	2021
Scope 1 (direct emissions)	5,067	5,726	7,604
Scope 2 (indirect emissions)	8,733	9,079	9,796

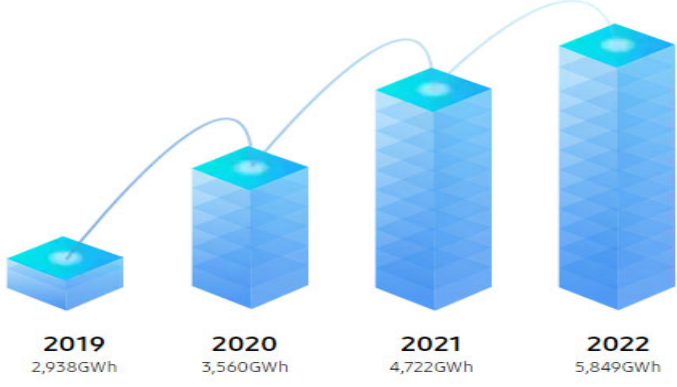
Source: Created by author based on Park, S (2022b)

Exact data on firms' electricity consumption is not publicly available in Korea as it is considered a business secret. However, according to a report submitted by KEPCO to the National Assembly in December 2022, Samsung Electronics consumed 19.6TWh, making it the largest corporate electricity consumer, followed by SK Hynix with 9.2TWh. In contrast, the total electricity consumption by the 27 companies participating in RE100 was 54TWh (Park, Y., 2022). In 2021, Samsung Electronics accounted for 59.9% of the total renewable energy generated in Korea (Park, S., 2022b) through its electricity consumption.

As a conglomerate with multiple business segments, Samsung's RE100 implementation varies across its subsidiaries. Insights into each subsidiary's RE100 performance can be found in the company's sustainability reports. For instance, according to the 2023 Sustainable Management Report, which outlines Samsung Electronics' achievements in sustainable management, its DX (Device eXperience) division was highlighted as a case that achieved RE100 not only across all domestic operations but also in overseas facilities in India, Vietnam, and Brazil (Samsung, 2023).

However, despite integrating RE100 goals into its domestic operations, Samsung's progress has lagged behind its achievements abroad. Samsung had already achieved RE100 in all semiconductor operations in the US and China by 2019, just a year after announcing its transition plan to renewable energy in 2018 (Samsung Semiconductors, n. a.). In 2023, Samsung Electronics consumed 28,100GWh globally, with 8,704GWh—approximately 31% of the total—procured from renewable sources. This transition was primarily in China and the US, which was made possible through the purchase of RECs. Samsung's record of renewable energy procurement for RE100 implementation in the domestic context remains weak, in stark contrast to its rapid progress in renewable energy adoption at the global level (Figure 1).

〈Figure 1〉 Renewable Energy Consumption of Samsung Semiconductor at the Global Level (2019~2022)



Source: Samsung Semiconductor (n. a.)

Since joining the RE100, Samsung has implemented various measures to expand the usage of renewable energy in Korea, such as installing solar panels, purchasing RECs, and signing PPAs. For instance, Samsung Semiconductor

installed 1.5MW of solar capacity in Giheung in 2019 and 0.4MW in Pyungtaek in 2020 to obtain electricity from renewable sources and reduce its carbon footprint. Moreover, it has signed agreements with renewable energy producers to meet its RE100 goals. Despite these firm-level efforts, Samsung still faces several challenges in achieving its RE100 goals. Given that the semiconductor industry requires a significant amount of electricity due to the addition of new production lines amid the ongoing digital transformation of society and economy, coupled with Samsung's core operations being primarily in Korea, it is understandable why achieving RE100 domestically remains a realistic challenge for the company.

This section examines the broader domestic policy context to identify some of the plausible reasons why Samsung's RE100 has not made significant progress in Korea. Specifically, it explores how policy-related factors external to the firm, particularly in terms of the government's renewable energy policies, have influenced Samsung's RE100 implementation.

As discussed earlier, governments enable corporations to procure renewable energy effectively by establishing a reliable and predictable regulatory environment, which in turn, generates positive market signals among private actors and provides appropriate institutional support. However, in the case of the RE100 execution in Korea, the government has not established a facilitating environment for firms, including Samsung.

One of the most relevant factors affecting firms' successful implementation of RE100 is the national renewable energy policy itself. When the government has a concrete plan to expand renewable energy and the political will to promote its growth through various supportive institutions and policies, private actors perceive this as a positive signal. This fosters expectations of a favorable policy environment and market conditions that will help them achieve their renewable energy-related targets.

In fact, renewable energy capacity has been growing steadily in Korea.

Between 2000 and 2022, the share of renewable energy in Korea's electricity generation increased by 429% (International Energy Agency, n. a.). However, renewable energy sources such as solar remain a small proportion of the total energy mix compared to fossil fuels and nuclear power. In 2022, renewables accounted for only 7.4% of Korea's total electricity generation.

Renewable energy sources, such as solar and wind, received increased policy attention under the Moon Jae-in administration (May 2017 ~ May 2022), which adopted an energy policy aimed at increasing the proportion of renewables in the electricity generation mix to 20% by 2030. This policy was intended to meet the country's nationally determined contribution (NDC) under the Paris Agreement and to facilitate the transition to a low-carbon, green economy and society. In October 2021, the Moon administration updated the NDC, setting a more ambitious target of a 40% reduction from 2018 levels. Under this revised NDC, Korea aimed to cut 291 million tons of CO_2eq from its total 2018 emissions of 727.6 million tons, with 42.5% (123.7 million tons) of the reduction expected to come from the energy transition sector. To facilitate this transition, the government revised its renewable energy target to 30.2% by 2030 and increased the Renewable Portfolio Standard (RPS) goal by 2026 from 10% to 25% in January 2022.

This renewable energy policy signaled to the energy market participants that renewable energy was becoming a central element in the country's energy transition, prompting many Korean conglomerates to join the RE100 campaign. In addition to mounting peer pressure from global competitors, the government's renewable energy policy appears to have influenced Korean firms to commit to RE100. Under the government's policy pursuing a gradual expansion of renewable energy, current and prospective RE100 participants in Korea could anticipate a supportive institutional and regulatory environment.

However, a shift in the government policy following the inauguration of the conservative Yoon Suk-yeol administration (May 2022 ~ April 2025) in May

2022 altered the course of Korea's energy transition. While the new administration could not easily change the country's NDC—since it represents Korea's international climate commitment—it significantly revised national energy policies as a means to achieve the NDC. Unlike the Moon administration, which sought to expand renewable energy while gradually phasing out coal and nuclear energy, the Yoon administration asserted the need to readjust national energy policy to reflect various domestic conditions. In the 10th Basic Plan for Long-Term Electricity Supply and Demand, officially introduced in January 2023, the Yoon administration lowered the renewable energy target from 30.2% to 21.6%. In April 2023, the administration further reduced the RPS target from 25% to 15%. Moreover, the Ministry of Trade, Industry and Energy (MoTIE) stated that the new government might consider abolishing the RPS system altogether, which was reaffirmed in May 2024 when the Yoon administration made an announcement that it would abolish the RPS system.

Within this broader policy context, where renewable energy policy has undergone a dramatic shift between administrations, renewable energy generation in Korea has not increased much. In 2022, total renewable electricity generation in Korea stood at 43TWh—only slightly higher than the 48TWh consumed collectively by the top five energy-intensive firms (Samsung, SK Hynix, Hyundai Steel, Samsung Display, and LG Display). This comparison suggests that it would be nearly impossible for firms participating in RE100 to procure sufficient renewable energy. Indeed, among the 25 RE100 companies in Korea, 13 were unable to purchase any renewable energy in 2022 due to supply constraints (Goh, 2022).

Beyond the government's lukewarm stance on renewable energy, the Yoon administration has sent mixed signals by shifting its policy focus to non-renewable energy sources such as nuclear power. Lee and Morgan (2024) describe these abrupt policy changes as "policy swings." While the Moon administration had planned to phase out nuclear power gradually, starting with

older reactors, the Yoon administration reversed this policy, promoting nuclear energy as a carbon-free (CF) energy source and a driver of economic growth with strong export potential. Since taking office, the Yoon administration has sought to revitalize the nuclear energy industry, which it claims was undermined by the previous government. Unlike its predecessor, the Yoon administration has positioned nuclear power as a key pillar of Korea's energy future (Lee, K., 2022). In the 10th Basic Plan for Long-term Electricity Supply and Demand, released officially in January 2023, the government set a target to increase nuclear energy's share of the electricity mix from 27.4% in 2021 to 32.4% by 2030. The administration also decided to resume the construction of the Shin Hanul 3 and 4 nuclear reactors, which had been halted in October 2017 (Lee, S., 2023).

As the new administration announced the plan to revitalize the nuclear sector, relevant governmental agencies followed suit. For instance, the MoTIE under the Yoon administration and the Korea Chamber of Commerce and Industry jointly established the Carbon Free Energy (CFE) Forum to promote nuclear power and green hydrogen as carbon free energy (Kim, 2023). In this forum, MoTIE, whose administrative responsibilities also include collaborating with Korean MNCs in their implementation of RE100, stated that RE100 serves as a trade barrier for Korean firms and is not appropriate in the Korean energy context. It stated that the potential for renewable energy generation remains low and the isolated transmission systems make it even harder for renewable energy to scale up.

As the Yoon administration's energy policy has emphasized the importance of nuclear energy as one of the most cost efficient, globally competitive, and carbon free energy sources, its policy support for the renewable energy sector has dwindled. The government tried to distance itself from the renewable energy sector by questioning the integrity of renewable energy projects. For instance, the Board of Audit and Inspection (BAI) under the Yoon administration released

a report on November 14, 2023, listing some of the allegedly illicit practices involving solar panel distribution. The BAI argued that the MoTIE executed the renewable energy policy recklessly under the Moon administration. It maintained that there had been numerous cases demonstrating moral hazard on the part of public employees within the MoTIE through permits and contracts (BAI, 2023). This allegation related to small-scale solar panel installation and distribution was made while the government promoted nuclear energy as the most appropriate energy source. Moreover, the administration slashed the budget for renewable energy financing. In 2023, the government cut 229.2 billion won from the total budget allocated for RE financing and distribution in the power industry infrastructure (Park, G., 2023).

This broad energy policy environment has generated mixed signals regarding the future of renewable energy procurement. These firms have found themselves in a limbo when it comes to renewable energy. On one hand, there has been a growing international pressure—both normative and market-driven—to adopt voluntary initiatives like RE100 to address climate change and join the global green energy transition. On the other, the government at home has been reorienting renewable energy, prioritizing nuclear energy as the central element of the national energy plan. This context has created confusing and inconsistent policy landscape for companies.

The Yoon administration has promoted a new initiative called CF100 as an alternative to RE100. However, this new initiative has not been received very well by the businesses. In a survey commissioned by the Federation of Korean Industries in May 2023, 82.4% of the 102 responding corporations out of 500 companies expressed that they have no intention to participate in the CF100 initiative. 68.6% said they are not aware of such an initiative, which contrasts with a 53.9% positive response rate regarding awareness of RE100 (Federation of Korean Industries, 2023).

Various surveys suggest that Korean firms are aware of the necessity of

transitioning to green energy in the current global economy. Moreover, companies participating in renewable energy procurement programs like RE100 know what challenges and obstacles they face. In an interview with the media, a senior manager from Samsung said, "in places like the US, Europe, and China where Samsung was able to achieve its RE100 goals by 100%, renewable energy was cheap and affordable. However, renewable energy procurement in the Korean context remains poor." (Cha, 2022). In the same report, a deputy CEO of SK Hynix stated that one of many obstacles firms face in RE100 execution is the inadequate provision of renewable energy despite the growth of RE100 participants. He said renewable energy price variation should be addressed along with other factors including institutional support and consistency. Moreover, he stated that the near monopoly system of electricity sales and operation under KEPCO should be reformed so that renewable energy contracts among diverse entities can be facilitated (Cha, 2022).

According to a similar survey conducted by the Korea Chamber of Commerce and Industry (2022) in August 2022 regarding Korean manufacturers' participation in RE100, approximately 15% of 300 responding companies (out of the 1,000 surveyed) said that they felt pressure from their global partner firms to use more renewable energy. The firms responding to the survey identified cost burden (35%), institution and infrastructure (24%), lack of information (23%), and lack of human resources (17.4%) as the major challenges impeding the effective implementation of RE100. Regarding the kinds of assistance they expect from the government, the following were identified: economic incentives (25.1%), accounting for renewable energy purchases towards emissions reduction (23.2%), expansion of renewable energy infrastructure (19.8%), provision of information and consulting services (16.5%), and reduction of various service charges such as grid usage charges (14.9%). In terms of the consultation, firms expected the government to match them with renewable energy producers.

Yet another survey titled "Corporate Perception Regarding Renewable Energy

Procurement Status and Institutions" examined the factors that businesses identify as the most relevant obstacles to be addressed in projects like RE100. 61 responding firms listed the government's financial and institutional assistance (38%), reform of the renewable energy price system (24%), expanded supply of renewable energy (21%), and changes in management perception (16%) as the obstacles to be addressed. 98% of the firms responded positively regarding the necessity of the renewable energy transition (CoREi, 2022).

One can argue that the policy inconsistency between the Moon and Yoon administrations has generated confusion and frustration among firms participating in the RE100 campaign. RE100 participants in Korea have not benefited from the institutional support or infrastructure development facilitating the rapid expansion of renewable energy. The lack of such serves as obstacles hindering firms' implementation of voluntary climate actions such as RE100.

Given that renewable energy price fluctuations have made it particularly difficult for firms to enter contracts for renewable electricity procurement, there needs to be a policy that can help control and stabilize the price fluctuations within a predictable range. Moreover, the government needs to facilitate renewable energy capacity expansion and distribution. It needs to provide relevant institutional and policy support to enhance renewable energy-related infrastructure, such as power grids and energy storage systems. The PPA system needs to be reformed to assist RE100 companies in achieving their goals by utilizing a mechanism to obtain renewable energy more flexibly. The Electricity Enterprises Act was amended in June 2021 to allow PPAs between companies in need of renewable energy and electricity producers, raising anticipation that this law would assist firms in making progress towards their RE100 goals. But as of today, the number of actual contracts remains small, so the government should provide reassurance and stability for renewable energy market participants for policy uptake.

IV. Conclusion

The accelerating pace of climate change has driven governmental and non-governmental actors to collaborate in tacking this global challenge. States under the Paris Agreement have been facing the urgency of updating their NDCs with more ambitious GHG emission reduction targets. In the private sector, an increasing number of global corporations have been adopting voluntary climate initiatives.

RE100 is one example of such voluntary climate initiatives led by corporations to usher in the era of renewable energy. Although some might argue that RE100 is merely a corporate image improvement project or an example of corporate greenwashing, firms in Korea have been facing growing pressure to expand their energy procurement from renewable sources. Such pressure has been coming from their partners in global value chains. For instance, Korean firms supplying intermediary goods to global auto companies such as Volvo and BMW have been asked to submit their RE100 plans and to produce parts using only renewable energy (Lee, J., 2023). Volvo, in fact, ended a contract with a Korean parts supplier due to the latter's failure to implement RE100. According to a study titled "The Impact of RE100 on the Major Korean Export Industry" conducted by KDI and others in 2021, Korean companies in the semiconductor sector could potentially lose up to 31% of their export revenues by 2040 if they do not join RE100 (Lee & Park, 2023). Sam Kimmins, Director of the Energy at the Climate Group, argued that Korea might lose 3.8% of its GDP in 2040 if it misses the opportunity to join RE100 (Cha, 2022).

Korean conglomerates including Samsung have thus faced a challenge to reduce their carbon footprints or have their competitiveness and growth undermined. They have joined RE100 not merely as a "feel-good" initiative, but

as a strategic commitment to reducing their carbon footprints and demonstrating global competitiveness and climate leadership.

Through the case study of Samsung's implementation of RE100, this study demonstrates that firms' successful adoption of campaigns like RE100 still requires support from the government in terms of infrastructure, institutions, and incentives. There should be clear and consistent signals and incentives that create the expectation that renewable energy will generate additional benefits not only for consumers but also for producers even in the foreseeable future. Moreover, infrastructure and institutions, including grid systems, ESS, and PPAs, are critical for the expansion of renewable energy and effective implementation of RE100.

The proportion of renewable energy in the total electricity generation remains slightly below 8% in Korea, which is far below the Asia-Pacific region's ratio of 27% and the OECD average of approximately 30% (IEA). Meanwhile, countries in Northeast Asia plan to rapidly expand renewable energy. Japan aims to expand its share in the power mix to 50% by 2040. China will be expanding it to 35% by 2030. However, Korea, whose MNCs compete with the firms from these neighboring countries in the global economy, has been lagging behind in terms of renewable energy development. This low level of renewable energy production and distribution can be partially explained by the government's lack of consistent renewable energy policy and relevant policy support. In the case of Korean firms' implementation of RE100, the traditional role of the Korean government as a green developmental state has been largely missing. Thus, for the successful implementation of RE100 by Korean corporations, the government needs to establish a more facilitative renewable energy policy and implement it consistently, reinforcing firms' climate actions through the transition to renewable energy sources.

In this context, meaningful progress in the implementation of RE100 by Korean firms can be anticipated under the Lee Jae-myung administration, which

was inaugurated in June 2025. The new administration has positioned the transition to renewable energy and the realization of RE100 targets as central pillars of its environmental and industrial policy agenda. Notably, the concept of renewable energy highways—transmission lines linking offshore wind farms and solar clusters to industrial zones—exemplifies the government's commitment to facilitating corporate access to RE-100 compliant electricity (Jeong, 2025). Moreover, the administration has announced plans to establish RE100 industrial complexes and to introduce tax incentives and support packages for strategic suppliers and local industries in order to scale up renewable energy procurement.

This study acknowledges several limitations that may affect the generalizability and depth of its findings. First, the absence of a clearly articulated theoretical framework may constrain the universal applicability of the findings, as the analysis was conducted without anchoring the discussion in an established conceptual model. Future research would benefit from embedding the analysis within a more explicit theoretical model to enhance analytical rigor and comparability across cases. Second, the reliance on secondary data sources limits the empirical richness of the study; future research could benefit from incorporating fieldwork and interviews with key stakeholders to offer more nuanced insights. Finally, comparative analyses involving multiple cases or cross-national studies may yield broader implications, especially when combined with a more rigorous theoretical approach and systematic empirical investigation.

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