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RESEARCH ARTICLE



# Reframing Growth: Elite Paradigms and Korea's Green Pivot

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## ABSTRACT

South Korea's energy transition accelerated in 2020–2021 despite entrenched dependence on fossil fuels and nuclear power. This article argues that Korea's green shift was not an inevitable response to structural constraints or international pressures, but the outcome of an elite-driven paradigm shift that reframed climate policy as a strategy for industrial competitiveness. External developments—including the Paris Agreement, regional peer competition, and diplomatic pressures—alongside domestic concerns over air pollution and nuclear safety, created openings for reinterpretation. Political entrepreneurship then actively channelled these shocks into a paradigmatic reframing and embedded this reorientation within the state through the Green New Deal, the 2021 Framework Act on Carbon Neutrality and Green Growth, and enhanced 2030 Nationally Determined Contributions. Although the transition was later contested under President Yoon Suk-yeol through renewed emphasis on nuclear energy and adjustments to renewable targets, key elements of the green-growth nexus persisted due to legal codification and international commitments. Comparative references to Japan and Taiwan highlight how differences in elite authority shape the timing and durability of green transitions.

## KEYWORDS

Green transition; elite politics; green paradigm shift; Korea's Green New Deal; 2050 carbon neutrality

## Introduction

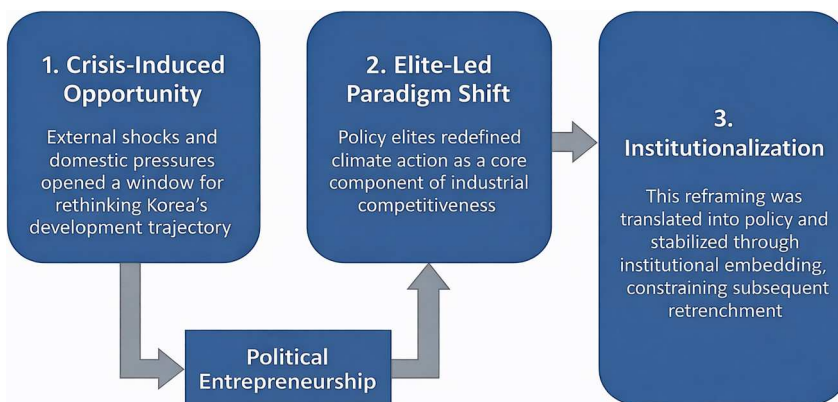
Why did South Korea, an economic powerhouse in Northeast Asia and the world's 12th-largest economy, pivot toward a green transition in 2020–2021, despite deep lock-in to fossil fuels and nuclear power? In 2024, more than 80 percent of the country's total energy supply still came from fossil fuels, and nuclear power accounted for about 31 percent of electricity generation (IEA 2025). Renewables contributed barely seven percent of electricity in 2023—the lowest share among International Energy Agency members—and coal dependence kept South Korea's carbon intensity near the global average (Ritchie and Rosado 2025). These fundamentals have long constrained rapid decarbonization. Yet, in the wake of COVID-19 and five years after the Paris Agreement, Seoul launched the Green New Deal and committed to carbon neutrality by 2050. Why then, and why in this form?

This article argues that South Korea's green turn was not an inevitable response to external pressures, but the outcome of an elite-led paradigm shift that reframed

climate action as a growth strategy and was activated through political entrepreneurship under crisis conditions. Classic developmental-state accounts explain Korea's growth-first orientation (Amsden 2001; Evans 1995; Woo-Cumings 1999), and structuralist approaches highlight path dependence and institutional inertia (Mahoney and Thelen 2010; Pierson 2000); but they struggle to account for the timing and direction of this turn. I emphasize the role of purposive actors—particularly policy elites—in reframing developmental goals under uncertainty.<sup>1</sup> My approach resonates with the notion of *developmental environmentalism* in highlighting the developmentalist dimension of East Asia's green transition (Thurbon et al. 2023). Conceptually, I treat elite paradigm shifts as the mediating mechanism linking exogenous shocks and domestic pressures to policy reorientation. Following Hall (1993) and Blyth (2002), paradigms are understood as shared interpretive frameworks that shape how elites define problems and select policy instruments.

Figure 1 illustrates the elite-mediated causal pathway of Korea's green trajectory. External pressures—such as the 2015 Paris Agreement and the COVID-19 pandemic—created a permissive environment in which South Korean top-level policy elites could reinterpret environmental imperatives within new strategic narratives. Peer competition following China's and Japan's net-zero pledges in 2020 and President Biden's climate summit in April 2021 heightened reputational pressures, while severe fine-dust pollution and mounting nuclear safety concerns intensified domestic urgency. These pressures alone, however, did not determine policy direction. Rather, political entrepreneurship channelled structural shocks into ideational change by reframing climate action as a component of industrial competitiveness, overcoming bureaucratic resistance, and translating the new paradigm into policy.

Once crystallized under President Moon Jae-in (2017–2022), this reorientation was operationalized through instruments such as the Green New Deal and an upgraded 2030 Nationally Determined Contribution, and embedded in bureaucratic routines through the Presidential Commission on Carbon Neutrality and the 2021 Framework Act. These institutional arrangements raised the political cost of reversal and constrained subsequent retrenchment, allowing the core orientation of green governance to largely persist across leadership change.



**Figure 1.** Elite-mediated Causal Pathway of Korea's Green Transition.

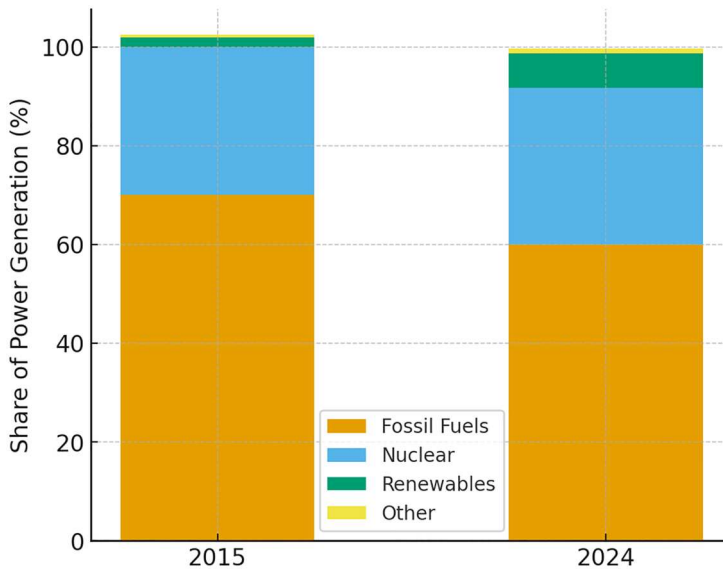
To trace this causal sequence empirically, the analysis spans 2015–2024 and centres on Moon Jae-in’s administration. The year 2015 marks a pivotal moment with the adopted Paris Agreement, setting the stage for intensified national decarbonization efforts. Methodologically, this study employs process-tracing to track ideational shifts through discursive changes (elite speeches and white papers), institutional development (laws, government plans, ministerial reports, and statutory targets), and budgetary commitments. This analysis is supplemented by 22 elite interviews conducted between September 2023 and December 2024 with officials, policy advisers, bureaucrats, academics, journalists and business leaders.<sup>2</sup> Although the narrative focuses on Moon’s term, I trace conceptual origins back to Lee Myung-bak’s Green Growth and assess continuity under Park Geun-hye and successor administration—Yoon Suk-yeol.

The article contributes in two ways. First, it identifies the mechanism linking ideas to institutionalization by showing how ideational change becomes embedded in governance structures, building on scholarship that emphasises agency in moments of institutional ambiguity (Bell and Feng 2021; Capoccia and Kelemen 2007; Thelen 2004). Empirically, it provides a longitudinal analysis of green narratives in Korea, from Lee Myung-bak’s Green Growth to Moon Jae-in’s Green New Deal, highlighting the contingent role of presidential leadership in policy continuity. Second, it challenges views of Korea as a monolithic developmental state by tracing how external pressures and domestic voices channelled into the elite sphere and reshaped perspectives.<sup>3</sup> Korea’s political-led pathway is set alongside Japan’s bureaucratic-led model and Taiwan’s civil-political hybrid, showing that similar external pressures and developmental-state legacies can yield different pathways depending on the configuration of elite authority.

The article proceeds as follows. Section 2 outlines Korea’s structural energy constraints and the external and domestic pressures that made ideational change possible. Section 3 explains the causal process narrative from pre-shift continuity to breakthrough, followed by Section 4 discusses institutional embedding as the mechanism through which this reorientation endured. Section 5 examines contestation and resilience under Yoon Suk-yeol. Section 6 situates Korea in comparative perspective alongside Japan and Taiwan, showing different pathways for the green transition in East Asia. Section 7 concludes with implications.

## **Pressures and Preconditions: Korea’s Energy and Policy Landscape**

South Korea’s energy landscape illustrates deep structural constraints. Fossil fuels—coal, oil and natural gas—still supplied more than two-thirds of power generation in 2024, while nuclear energy accounted for about 31.7 percent (Figure 2). Renewables remained marginal at around seven percent, while carbon-intensive industry consumes more than 60 percent of final energy, underscoring the dominance of incumbents (Sanöp t’ongsang chawönbu 2024). Weak social acceptance compounds this inertia. A 2014 survey measuring willingness to pay for renewable substitution found Korean households willing to pay about KRW 3,456 per month (USD 3) for cleaner power, only 20 percent of the level in Japan and 30 percent of that in the United States (Lee 2015). Such modest public support signals how fragile the mandate was for rapid renewable expansion.



**Figure 2.** Korea's Power Generation by Fuel, 2015 and 2024. Source: Energy Institute, *Statistical Review of World Energy 2024*; IEA 2024.

Historical legacies amplify this rigidity. Korea's developmental state subordinated energy policy to industrial strategy under a growth-first logic, maintaining low electricity prices to sustain export competitiveness (Ha and Byrne 2019). Residential electricity prices averaged about USD 0.107 per kilowatt-hour in 2022—well below levels in the United States (USD 0.151), Japan (USD 0.240), Germany (USD 0.349) and the United Kingdom (USD 0.379) (Kim 2022). With cheap power guaranteeing industrial advantages, carbon-intensive incumbents faced few incentives to decarbonize. Institutional arrangements reinforced this dynamic. The Ministry of Trade, Industry and Energy (MOTIE) sets energy policy, while the state-owned Korea Electric Power Corporation (KEPCO) and its six generation subsidiaries handle generation, transmission and distribution (IEA 2020). MOTIE's energy framework has consistently prioritized two goals: ensuring a stable supply and supporting economic growth, largely through cheap electricity pricing. Although President Lee Myung-bak's 2008 Green Growth represented a meaningful shift toward sustainability, his administration persisted developmentalist logic by freezing electricity prices in 2008 and 2012 for households and small businesses. This context explains why renewables were politically and economically less urgent within Korea's developmental energy regime.

A few external events and domestic crises, however, gradually opened a window of opportunity (Kingdon 2003). The first jolt came from Japan's Fukushima Daiichi nuclear disaster in March 2011. Within months a global survey showed three fifths of respondents opposed nuclear energy, with a quarter citing Fukushima as the decisive factor (IPSOS MORI 2011). In Korea, 66 percent of nuclear opponents said their views had been shaped by the accident. The government elevated the Nuclear Safety and Security Commission to a presidential agency in October 2011, signalling heightened attention to safety.<sup>4</sup> Although pro-nuclear elites continued to defend nuclear power as

safe and export-oriented, the accident exposed Korea's vulnerability and galvanized anti-nuclear NGOs and activists (Richardson and Gurtov 2017). These actors, long marginalized under growth-first energy policy, gained mainstream legitimacy and forged alliances with progressive politicians.

While nuclear safety dominated headlines, the global climate regime also tightened. The December 2015 Paris Agreement, unlike the Kyoto Protocol, required all 197 signatories to submit legally binding greenhouse gas reduction targets and upgrade them over time. Korea ratified the accord the following year as the United States and China jointly announced their ratifications in September 2016, signalling a new era of climate diplomacy. These moves elevated reputational risks for laggards and linked low-carbon policy to export markets. By 2021 the European Union's proposed CBAM threatened to impose tariffs on carbon-intensive imports, and the Biden administration's climate diplomacy underscored that green norms would shape future competitiveness. For Korea, a manufacturing exporter of steel, chemicals and vehicles, these external pressures raised the stakes for carbon-intensive exports and reframed climate policy as a component of industrial strategy rather than a compliance cost.

Domestic crises added further impetus. In the mid-2010s fine dust pollution became one of Korea's most salient political and social issues. Seoul recorded an annual average of  $26 \mu\text{g}/\text{m}^3$  in 2018—twice the World Health Organization guideline of  $10 \mu\text{g}/\text{m}^3$  (WHO 2026). Public health concerns prompted widespread alarm, and although much of the pollution was attributed to transboundary flows from China, domestic coal-fired plants were increasingly blamed. Then-candidate Moon Jae-in made air-quality improvement one of his central campaign pledges. After taking office he launched the National Council on Climate and Air Quality under the Presidential Office in April 2019, which recommended measures such as regional co-operation with China and temporary shutdowns of coal plants when air quality worsened (Hwan'gyōngbu 2019). Initially framed as a health crisis, this linkage broadened the coalition for energy transition by embedding climate and energy debates within the language of public health and urban quality of life.

Nuclear safety concerns became more salient following the 2016 Gyeongju and 2017 Pohang earthquakes, but the political response remained contested rather than unified around a shift away from nuclear energy. Although the proximity of these quakes to nuclear facilities heightened public attention to seismic risk, political responses remained mixed, with some legislators emphasizing the continued safe operation of facilities such as Wolsong (Lim 2019). The permanent shutdown of Wolsong Unit 1 in late 2017 further illustrates this ambivalence; subsequent debates included vocal calls for its restart and legal challenges by political actors and industry unions (Koo 2023). Rather than serving as clear pressure points that decisively shifted policy, safety debates around both earthquakes and Wolsong contributed to a contested discursive environment in which nuclear energy's role was debated politically and rhetorically, with implications for how elites later framed energy priorities.

By the late 2010s external and domestic pressures had converged to create a permissive environment but had not yet produced a paradigmatic reorientation. Korea's energy mix remained carbon- and nuclear-heavy, cheap electricity prevailed and key ministries still prioritized supply stability over environmental ambition (Sanōp t'ongsang chawōnbu 2015). Anti-nuclear activism and air-pollution politics enlarged the coalition for

change, but elites continued to perceive climate policy as a cost, not a growth opportunity. Thus, the preconditions for a shift were in place, but the decisive impetus would come from ideational entrepreneurs who reframed climate action as part of a sustainable industrial strategy. The next section traces how this reframing occurred and how it translated into policy instruments and institutions.

## **How the Paradigm Shift Happened: Process Narrative**

### ***Pre-shift: Developmental Continuity (2008–2016)***

President Lee Myung-bak's administration (2008–2012) marked a pivotal moment in Korea's green transition, introducing "Green Growth" as a national development paradigm.<sup>5</sup> Many interviewees and experts viewed this period as a conceptual breakthrough; Lee's agenda reframed sustainability as compatible with economic growth rather than a trade-off (Ha and Byrne 2019; Kim 2021; Lim 2010; Young 2022). In his speech commemorating Korea's 60th anniversary on 15 August 2008, Lee declared that "low-carbon green growth is now a new vision ... not only about reducing GHG emissions and pollutants but also creating jobs and new growth engines by leveraging green technologies" (Yi 2008). Dr. Young Soogil, former chairman of the Presidential Committee on Green Growth (PCGG), later praised this move as an innovative paradigm shift, noting that Korea was among the first countries to adopt green growth as a national vision and positioned itself as a bridge between developed and developing countries in climate negotiations.<sup>6</sup>

Institutional developments followed this leapfrogging vision. The PCGG was established in February 2009 as a control tower, and the Framework Act on Low-Carbon Green Growth was enacted in January 2010 (Taehan min'guk chŏngbu 2010). That Act created the legal foundation for Korea's mid- and long-term emissions-reduction targets, introduced an emissions trading system and an energy-target management system, and set a goal of reducing greenhouse-gas emissions by 30 percent below the business-as-usual level by 2020.

Yet critics questioned whether Lee's agenda was truly green. Former Environment Minister Cho Myung-rae (2018–2021) dismissed it as a developmentalist programme that prioritized "growth over green."<sup>7</sup> Much of the green growth budget was diverted to the controversial Great Canal Project, and more coal-fired power plants were approved during this period.<sup>8</sup> Others pointed to structural constraints. A senior official at MOTIE recalled that electricity prices were deliberately frozen in 2008 and 2012, remarking: "Keeping electricity prices artificially low compared to fossil-fuel import prices is like signaling left but turning right. It makes meaningful green growth investment unlikely, reducing the policy to a political slogan without substantive commitment."<sup>9</sup>

During President Park Geun-hye's administration (2012–2016), green growth was largely eclipsed. Interviewees consistently noted that Park—despite coming from the same conservative party—showed little interest in sustaining her predecessor's flagship policy. The PCGG was downgraded from the presidential office to a body under the prime minister's office, and green considerations largely disappeared from ministerial roadmaps. This episode highlights how volatile Korea's policy trajectory has been under different presidential leadership.

Still, international pressures forced crucial movement.<sup>10</sup> After the Paris Agreement was adopted at COP 21 in December 2015, climate commitments became unavoidable. In May 2015, Korea retreated from Lee's 2009 target of cutting GHG emissions by 30 percent by 2020. Weeks later, then-US President Obama personally urged Park to commit to ambitious targets ahead of Paris (Kim and Pak 2015). On June 15, President Park pledged to reduce emissions by 37 percent by 2030, which later became Korea's first Nationally Determined Contribution (Kim 2015).

In sum, Korea's pre-shift period laid conceptual and institutional foundations for green transition but remained anchored in developmentalist logic. Lee's Green Growth was undercut by coal expansion and frozen electricity prices, and Park's disengagement and externally driven NDC pledge show that domestic support for a genuine paradigm change was still thin.

### **Problematization (2017–2019)**

Under President Moon Jae-in (2017–2022), green policy began to be reconceptualized not just as climate response but as a vehicle for industrial competitiveness, though the momentum was initially limited. During his first three years, Moon's priorities were relatively inward, focusing on worsening air quality and initiating a nuclear exit. Renewables were framed less as part of an industrial strategy and more as substitutes for nuclear and coal power to maintain a stable supply. Several interviewees noted that his early policies—dominated by denuclearization—reflected philosophical convictions rather than strategic industrial policy (Young 2022).<sup>11</sup> Despite the efforts of a few political entrepreneurs, who later helped elevate “green” to a top-tier priority, climate and renewables remained peripheral.

Moon's nuclear phase-out, which sparked heated public debate, nonetheless laid the groundwork for the government's later turn to renewables.<sup>12</sup> Motivated by the 2011 Fukushima accident, heightened nuclear-safety concerns were brought onto the national agenda and culminated in the permanent closure of the Kori No. 1 reactor. At the ceremony marking this closure in June 2017, Moon declared that “the permanent shutdown of Kori No. 1 is the first step on the path toward a nuclear-free country ... the Fukushima nuclear accident vividly illustrated that nuclear power plants are neither safe, affordable, nor environmentally friendly” (Jung and Lee 2017).

Policy elites' responses to heightened nuclear-safety concerns after the 2016 and 2017 earthquakes quickly moved from debate to institutionalization. The government's Energy Transformation (Denuclearization) Roadmap, announced in October 2017, cancelled six planned reactors, prohibited lifetime extensions for fourteen older units, and scheduled the early closure of a fifteenth reactor that had been operating on extended service (Sanöp t'ongsang chawönbu 2017a, 2017b). Nuclear capacity was projected to decline from twenty-eight reactors in 2022 to eighteen in 2031 and ultimately fourteen in 2038 (Sanöp t'ongsang chawönbu 2017b). Since nuclear power provided roughly thirty percent of the energy mix, solar energy emerged as the primary alternative to ensure a stable supply.

At the same time, the evolving global climate regime began reshaping top-level policy elite perceptions. At the 2017 G20 Summit in Hamburg—his first major international appearance—Moon was pressed by global counterparts to clarify Korea's climate

commitments. Kim Hye-ae, then Secretary of Climate and Environment, recalled that this exposure initiated Moon's shift toward a greener policy vision.<sup>13</sup> The Intergovernmental Panel on Climate Change's Special Report on Global Warming of 1.5°C, released in Incheon in October 2018, further reinforced the urgency. Former environment minister Cho Myung-rae recounted that Moon took the report personally as Korea hosted the launch, viewing climate action as a national responsibility.<sup>14</sup> In 2019, the United Kingdom became the first country to legislate a 2050 net-zero target, helping to set a global benchmark for low-carbon transitions. Together, these experiences contributed to Moon's gradual internalization of climate change as a necessity rather than an option. A more conceptual breakthrough, however, would not occur until 2020–2021.

### ***Conceptual Breakthrough: Net-zero and Renewables as Growth Engine (2020–2021)***

Building on the structural constraints and early signals discussed above, 2020–2021 saw Korea's green agenda take root as a fully-fledged reorientation of the national development strategy. Discursive, legislative, and budgetary indicators prove that green policy ceased to be an auxiliary tool and became integral to growth. This shift was initially articulated by a small set of political entrepreneurs and subsequently consolidated at the presidential level, as these actors internalized and advanced the new paradigm despite sustained scepticism from development-oriented ministries.

Signs of the cognitive shift loomed in late 2019. Moon grew increasingly concerned about Korea's reputation as a "climate villain" and sought to boost the country's standing.<sup>15</sup> Hosting the Partnering for Green Growth and the Global Goals 2030 (P4G) summit in Seoul was framed as a springboard for boosting Korea's global standing and toward a future COP bid.<sup>16</sup> As a part of that effort, Moon committed to doubling Korea's contribution to the Green Climate Fund at the UN Climate Action Summit in September 2019 (Haengjōng anjōnbu 2019). Unusually long meeting with Climate Secretary Kim in December 2019 about the European Green Deal also signalled his growing receptivity to a green-industrial vision.

As late as early 2020, advocacy for "going green" was still confined to a small minority within the administration, with Environment Minister Cho Myung-rae among its few vocal proponents.<sup>17</sup> That persistence surfaced when "green" was added to the Korean New Deal 1.0 just weeks before its launch.<sup>18</sup> Initially designed around digital infrastructure and jobs, the KND gained a green pillar only after sustained lobbying by Cho's ministry through forums such as the 2050 Low-Carbon Society Vision and repeated interventions at ministerial and cabinet meetings. The addition was made possible after President Moon personally urged the Cabinet in May 2020 to "positively consider" the Green New Deal as a central pillar of the initiative (Haengjōng anjōnbu 2020).<sup>19</sup> This inclusion marked the beginning of a decisive shift, reframing environmental measures from marginal add-ons to engines of industrial growth.

September and October 2020 proved pivotal. Nearly all of South Korea's roughly 245 basic local governments saw their mayors or county heads publicly commit to pursuing carbon neutrality. Furthermore, the National Assembly declared a climate emergency and called for a special committee on the climate crisis. Soon after, China and Japan

announced long- term carbon- neutrality pledges. Within days, Moon committed Korea to achieving net-zero emissions by 2050, on October 28, 2020, recasting climate policy as a “development strategy for growth and jobs” (Mun 2020a). Cho later recalled that Moon regarded parliamentary and peer-country signals as “unequivocal mandates” and explained that “carbon neutrality was an inevitable path that Korea should lead.” The 2050 net-zero announcement marked the apex of presidentially driven momentum in Korea’s green transition and caught many relevant ministers and experts off guard, particularly those who had expressed scepticism about the anticipated burden such a pledge would place on the country’s manufacturing-oriented economy.<sup>20</sup>

After the pledge, Moon’s statements consistently framed environmental policy as an industrial strategy, intertwining domestic growth, diplomatic ambition and trade considerations.<sup>21</sup> In April 2021, just before President Biden’s virtual Leaders’ Summit on Climate, Moon urged an industry-wide shift to view carbon neutrality as the new normal. At the summit, he further pledged to revise Korea’s 2030 NDC by year’s end (Yonhap 2021). Additionally, the Korea-US Summit in May 2021 cemented cooperation on renewable-energy technologies. By this time, Moon officially spoke of carbon neutrality as an “opportunity to transform Korea’s economic structure, spur technological innovation and create jobs through renewable-energy industries” (Haengjŏng anjŏnbu 2021).

Even MOTIE, long aligned with carbon-intensive industries, signalled change when its new minister, Moon Seung-wook, described carbon neutrality as “a tool to foster new industries and economic recovery” at a May 2021 cabinet meeting. Trade concerns, particularly the European Union’s CBAM, further reinforced this nexus; Moon noted that environmental standards could become de facto trade barriers and called for swift alignment with evolving norms.<sup>22</sup>

Corporate responses soon followed. Firms increasingly view Environment, Social, and Governance (ESG) management not just as risk control but as a source of market competitiveness and partner relationships. In 2021, among Korea’s 500 largest firms, 66.3 percent of CEOs reported high interest in ESG (Chŏn’guk Kyŏngjein Yŏnhaphoe 2021). Major conglomerates such as Samsung, SK, Hyundai and LG committed to the RE100 initiative, pledging to source 100 percent of their electricity from renewables (Pak 2022). International pressures, including the EU’s CBAM and stricter ESG requirements imposed by global investors such as Goldman Sachs, reinforced this shift and encouraged Korean conglomerates to adopt ambitious net-zero and expand clean-tech investments. These corporate strategies generated demand for clear policy frameworks and stable renewable procurement mechanisms, thereby creating new constituencies aligned with the government’s green agenda.

These developments show how elite-driven paradigmatic shift translated external pressures into a redefinition of Korea’s growth model. The next section turns to institutional evidence, demonstrating how these ideas were codified into laws, committees, and corporate practices that made the paradigm shift resilient over time.

## **Institutional Evidence of Paradigm Consolidation**

This section treats institutionalization as an indicator of how the paradigmatic shift was consolidated. Drawing on historical institutional insights (Thelen 1999; Streeck and

Thelen 2005; Mahoney and Thelen 2010; Hall 1993), new low-carbon instruments—such as legislation, renewable mandates, and governance reforms—were selectively grafted onto Korea’s existing industrial-state frameworks. These changes redirected established institutions toward greener objectives without dismantling the developmental legacy, stabilizing the policy reorientation once it had occurred.

A key element was the establishment of the Presidential Committee on Carbon Neutrality (PCCN) in May 2021. Designed as a “coordinator” for transition governance, the committee brought together ministers, business leaders, academics, and civil-society representatives to coordinate climate policy.<sup>23</sup> It spearheaded the drafting of the 2050 Carbon Neutrality Scenario in October 2021, which envisaged a phased closure of coal-fired power plants and prioritized renewable energy including green hydrogen as the engine of the future economy (T’anso chungnip wiwŏnhoe 2021). The PCCN’s inclusive composition and formal mandate signalled that carbon neutrality was no longer a discretionary policy but a central organizing principle of national planning.

A series of legislative reforms and policy instruments deepened the institutionalization of the green paradigm. Amendments to the *Renewable Energy Act* in September 2020 mandated higher renewable use in public buildings (40 per cent), while the *2050 Carbon Neutrality Implementation Strategy* (December 2020) laid out sectoral roadmaps for energy, industry and transport, including a target to source 80 percent of hydrogen from green hydrogen by 2050 (Sanŏp t’ongsang chawŏnbu 2019; Taehan min’guk chŏngbu 2020). The KND 1.0 was upgraded to KND 2.0 in July 2021, expanding subsidies, feed-in tariffs, and industrial incentives for renewables and clean technologies (Kihhoek chaejŏngbu 2021). These measures signalled the fusion of climate, economic, and competitiveness goals, and they mobilized public and private investment on a scale commensurate with Korea’s ambitions.

Furthermore, the *Framework Act on Carbon Neutrality and Green Growth* was enacted in September 2021, making Korea the first Asian country to enshrine net-zero emissions in law (Taehan min’guk chŏngbu 2021). Article 2 defined green growth as “economic growth in harmony with the environment ... achieved by fostering clean energy and green technologies to secure new growth engines and job opportunities,” codifying the idea that environmental goals and industrial policy are mutually reinforcing. This legislation required successive administrations to submit carbon-budget plans and established legal grounds for climate governance, thereby reducing the scope for reversal. Anchoring net-zero into bureaucratic routines expanded the policy’s legitimacy and created institutional commitments that transcend individual administrations.

Momentum accelerated in October 2021 when the PCCN recommended, and the government adopted, an upgraded nationally determined contribution (NDC): Korea pledged to reduce greenhouse-gas emissions by 40 percent from 2018 levels by 2030, up from a previous 26.3 percent target. The revised NDC was submitted to the UN Framework Convention on Climate Change (UNFCCC) ahead of COP 26 in Glasgow and incorporated into the *Third Basic Plan for Climate Change Response*. Subsequent amendments to the *Renewable Energy Act* in January 2022 raised mandatory renewable-energy usage to 12.5 percent for 2022 and 14.5 percent for 2023, with a trajectory exceeding 25 percent after 2026. By binding Korea’s climate obligations to international reporting and verification, these steps heightened reputational costs for backsliding and reinforced the credibility of the paradigm shift.

These institutional innovations created sunk costs and reputational commitments that raise the political cost of reversal. The PCCN, the 2021 Framework Act, renewable mandates, and the 2030 NDC ratchet collectively embed green priorities into policy routines and corporate expectations. By embedding new instruments within existing industrial-state structures, Korea's political and bureaucratic elites constrained subsequent efforts at retrenchment, allowing the paradigmatic reorientation identified in Section 3 to persist despite later contestation and to continue shaping policy trajectories.

### Contestation and Resilience (2022–2024)

Korea's green trajectory entered a new phase of contestation with the election of President Yoon Suk-yeol of the People Power Party in May 2022.<sup>24</sup> This period revealed both ideational contestation and policy discontinuity, yet it also underscored the durability of the green paradigm. While the incorporation of “green” into the developmental formula persisted, Yoon redirected priorities around two themes: reviving nuclear energy and securitizing energy policy.

Yoon's July 2022 Energy Policy Direction reversed Moon's phase-out plans by resuming construction of the Shinhanwool nuclear power plant No. 3 and 4 reactors and targeting nuclear to supply more than 30 percent of electricity by 2030 (Sanöp t'ongsang chawönbu 2022). He tied nuclear expansion to export strategy, promoting small modular reactors as part of Korea's technological edge and casting himself as the country's “top salesman” (Cho 2022; Minegishi 2023). During a January 2023 visit to the United Arab Emirates, he secured investment deals worth approximately USD 30 billion, a substantial share of which was earmarked for nuclear projects. In international fora he defended this pivot: at the World Economic Forum in Davos in January 2023 he declared that Korea's nuclear ecosystem had been “stifled” by phase-out policies but would now expand (Oegyobu 2023). Nuclear thus served not only as an energy source but also as a symbol of departure from Moon's approach and an instrument for industrial and diplomatic outreach.

Energy security narratives were elevated, a framing largely absent under Moon. The Russian invasion of Ukraine in February 2022 doubled global LNG prices, exposing Korea's vulnerability as a resource-poor importer. Simultaneously, concerns over China's near-monopoly on the solar-photovoltaic supply chain fuelled anxiety about strategic dependence, compounded by memories of Beijing's urea export restrictions in 2021 that caused domestic shortages. These developments reinforced calls to diversify energy sources and emphasized security alongside sustainability.

Yoon's shift further showed ideological contestation over the country's energy trajectory. The *Basic Plan for National Carbon Neutrality and Green Growth (2023–2042)* maintained the overall commitment to reduce emissions by 40 percent from 2018 levels but loosened sectoral targets, lowering industry's reduction goal from 14.5 percent to 11.4 percent (Taehan min'guk chöngbu 2023). Renewables targets were revised down to 21.6 percent by 2030 and 30 percent by 2036, compared with Moon's goal of 40 percent by 2034. An April 2023 amendment to the *Renewable Energy Act* reduced the mandatory supply ratio for generators, cutting the 2023 requirement from 14.5 percent to 13 percent and the 2024 requirement from 17 percent to 13.5 percent. Environmental groups criticized these changes as favouring carbon-intensive industries.

Despite recalibrations, Korea's green transition was not dismantled. Its persistence owed less to shifts in executive priorities than to the institutional architecture consolidated earlier. The 2021 *Framework Act on Carbon Neutrality and Green Growth* anchored net-zero into law, the 2030 NDC bound Korea to international commitments, and business coalitions aligned with RE100 created domestic constituencies invested in continuity. Although the reconstituted Presidential Committee on Carbon Neutrality and Green Growth under Yoon played a more limited role, its continued existence signalled that climate governance could not be abandoned without political cost. International reputational risks, trade pressures such as prospective carbon border adjustments, and corporate strategies already geared toward decarbonization further narrowed the space for wholesale reversal. In this sense, resilience stemmed from the prior institutionalization of the paradigm shift, which raised the cost of retrenchment and preserved the green-growth nexus as a baseline in Korea's energy strategy.

### Comparative Implications

This article has shown that Korea's green transition was an elite-driven reframing that repositioned renewable energy from a marginal supplement into a central pillar of industrial competitiveness. This elite-driven pathway was further reinforced by domestic social pressures—alongside the external shocks discussed above—including anti-nuclear mobilization, environmental NGO activity, and air-pollution campaigns, which together contributed to a permissive environment for elite cognitive change. Yet the decisive reorientation occurred when these pressures were channelled to the presidential office, where political leaders converted them into a growth narrative. Although elements of this pathway were later reinterpreted or partially retrenched under different administrations, earlier institutionalization and international commitments constrained wholesale reversal and allowed the core green-growth orientation to persist. Korea's experience thus sheds light on the comparative politics of energy transition in East Asia and, more broadly, on how elite paradigms—interacting asymmetrically with other actors in the policy process—can redirect developmental state trajectories under conditions of crisis.

Placing Korea alongside Japan and Taiwan illustrates how different configurations of elite authority are associated with distinct pathways in the green transition.<sup>25</sup> Korea exemplifies a political-led pathway: breakthroughs were largely presidential-driven, rapid, and visible, but also vulnerable to partisan contestation and leadership turnover. Japan, by contrast, represents a bureaucratic-led pathway. Although Prime Minister Suga's October 2020 net-zero pledge marked a dramatic discursive shift, the subsequent trajectory was possible only when the shift was absorbed and institutionalized by the Ministry of Economy, Trade and Industry (METI). Here, the bureaucracy provided continuity and incrementalism, embedding carbon neutrality into long-term industrial and energy planning (Park and Tiberghien 2026). Taiwan illustrates a civil-political hybrid pathway. Strong anti-nuclear activism furnished Democratic Progressive Party politicians with political resources, enabling President Tsai Ing-wen (2016–2024) to advance a nuclear-free homeland agenda (Chou and Mathews 2017). Civil society thus played a constitutive role, with political elites translating activist demands into state policy.

These contrasts underscore how different configurations condition the pace and durability of change. Political-led breakthroughs, as in Korea, can generate rapid reorientation

but are prone to partisan reversal. Bureaucratically mediated pathways, as in Japan, sustain steady institutionalization but risk technocratic incrementalism (Tiberghien 2023). Civil-political hybrid pathways, as in Taiwan, draw strength from bottom-up mobilization but may face limits when social movements fragment or lose salience (Kim 2021; Yun 2015).

Within this typology, Korea's trajectory demonstrates both the power and fragility of elite-driven model. Elite paradigms evolved in successive waves: from Lee Myung-bak's rhetorical "Green Growth," through Park Geun-hye's disengagement, to Moon Jae-in's philosophical anti-nuclear framing and subsequent industrial breakthrough, followed by Yoon Suk-yeol's nuclear U-turn and securitized reinterpretation. These shifts were repeatedly activated by major shock—the Asian Financial Crisis, the Fukushima disaster, the Paris Agreement, the COVID-19 pandemic, and Russia's invasion of Ukraine—which pulled "green" back onto the national agenda (Pak 2023). This cycle compressed decision-making timelines, limiting opportunities for broad societal coordination. At the same time, institutional embedding through instruments such as the 2021 Framework Act, the 2030 NDC, and corporate commitments like RE100 raised the political cost of abrupt reversal, helping explain why Korea's elite-driven reorientations are rapid yet contested, but not easily undone.

Theoretically, these comparative findings refine the developmental state literature. Korea's case challenges depictions of the state as a monolithic entity guided exclusively by structural imperatives. Instead, it shows that elite agency—exercised through political entrepreneurship—can reframe developmental priorities and redirect industrial strategy toward new goals. At the same time, the Japanese and Taiwanese cases demonstrate alternative routes through which developmental states recalibrate—either via bureaucratic absorption or through mobilization of civil society. Taken together, these cases underscore that the developmental states are not as static, path-dependent growth machine but adaptive political orders in which crises periodically reshape elite perception and open space for divergent trajectories under similar external shocks (Esarey et al. 2020; Haddad and Harrell 2020; Thurbon et al. 2023).

Rather than unfolding through gradual, cumulative adjustment toward decarbonization, Korea's green transition followed an episodic pattern of elite-led reorientation, distinct from the more incremental bureaucratic mediation observed in Japan or the socially driven agenda-setting seen in Taiwan. The Korean trajectory did not consist of repeated policy reversals or simple oscillation between fixed paradigms, nor did it involve reframing that left the underlying developmental direction unchanged. Instead, discrete moments of elite reinterpretation redirected growth priorities, which were subsequently contested and reworked under changing political leadership. Whether these reorientations endured depended less on their initial political momentum than on their subsequent embedding in legal frameworks, bureaucratic routines, and international commitments. Framing Korea's experience in this way clarifies why its transition diverged from an incremental developmental path despite persistent structural constraints.

## Conclusion

This article has examined Korea's acceleration in green transition despite deep dependence on fossil fuels and nuclear power. It argues that Korea's green turn was not an inevitable response to structural pressures or international commitments but the

outcome of elite-driven ideational change. Political entrepreneurs reframed energy transition as an industrial strategy, channelling crises and domestic pressures elite alignment that anchored institutionalized change at the later stage.

The study makes two contributions. First, it highlights the role of political entrepreneurs embedded in coalition dynamics, which reoriented national strategy even amid path dependence and incumbent resistance. Second, it offers that in East Asia, elite paradigms function as the mediating mechanism that links external shocks and domestic pressures to durable institutional change.

For policy debates, the findings stress that elite coalitions and institutional embedding are key to overcoming incumbents and ensuring continuity. Legal codification, bureaucratic routines, and corporate commitments create sunk costs and reputational lock-in that make reversal costly (Bell and Feng 2021; Capoccia and Kelemen 2007). Korea thus demonstrates that green transitions hinge not only on resources or technologies but on interpretive coalitions that sustain ideational and institutional change.

Regionally, Korea's top elite-driven contrasts with Japan's bureaucratic-mediated model and Taiwan's civil-political hybrid. These cases reveal that under shared external pressures and developmental-state legacies, coalition composition shapes the timing, pace, and durability of green paradigm shifts. More broadly, Korea illustrates that elite paradigms are fluid yet sticky: crises open space for reinterpretation, but once institutionalized, ideas endure leadership turnover. This adds politics to techno-economic accounts of transition, showing how ideas and institutions interact over time. Future research should extend this typology across the Asia-Pacific to test durability and explore how crises and coalitions mediate elite perceptions in shaping green transitions.

## Acknowledgements

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## Notes

1. For the continuity of development-oriented thinking in Korea's green transition and the evolving trajectory of the developmental state in response to climate change, see earlier works: Kim and Thurbon (2015), Thurbon (2016). By contrast, Kalinowski (2021) emphasizes state-business relations to explain Korea's ambitious renewable targets alongside weak implementation. My analysis takes a different angle, asking when ideational change occurred and how it translated into policy outcomes.
2. This approach allows me to consider both structural and agent-based explanations. Structural constraints include material, institutional and normative factors, whereas agents may reinterpret material interests, be influenced by cognitive biases or respond to normative concerns that may or may not be shaped by structural contexts (Bennett and Checkel 2015). Because process tracing—which explores what actors knew and how they behaved—can overlook normative or material structures, I supplement it with archival research to trace how institutionalization unfolded as evidence of agent-driven ideational change.
3. This approach that puts emphasis on the evolution of developmental state is in line with scholarship such as *developmental environmentalism* or *eco-developmental state*: see Thurbon (2016), Esarey et al. (2020), Haddad and Harrell (2020), and Thurbon et al. (2023).

4. NSSC was first established in 1997. In 2013, the NSSC was relocated to under the Prime Minister's Office. <https://www.nssc.go.kr/>
5. Although President Lee may not be the first to frame "green" as a driver of economic growth, several interviewees observed that his Green Growth initiative laid important conceptual and institutional groundwork for Korea's subsequent transition to a low-carbon economy.
6. Author's interview, Seoul, September 21, 2023.
7. Author's interview, Seoul, April 8, 2024.
8. Author's interview, via Zoom, April 25, 2024.
9. Author's interview, Seoul, October 6, 2023.
10. Despite the widely accepted criticism, a few interviewees offered the fresh perspective on energy policy under Park's leadership, namely that she put much emphasis on normalizing the country's cheap electricity prices and strengthening nuclear safety to mitigate public concerns and secure stable energy supply.
11. Author's interviews, February 14, 2024 and March 9, 2024. Both were virtual.
12. Although the Moon administration emphasized a "nuclear phase-out," the actual policy pursued was more aligned with cancelling the construction of new nuclear power plants and refraining from approving extensions for the operational lifetimes of aging reactors. This approach contrasts with Taiwan's "nuclear-free homeland by 2025" policy, as Korea adopted a much more gradual transition. However, the term "phase-out" itself created the perception of a complete and immediate withdrawal from nuclear energy, making it one of the most controversial issues in Korea, according to Kim Chang-seob, former director of the Korea Energy Agency. Author's interview, via Zoom, April 30, 2025.
13. Author's interview, Gimpo, Gyeonggi, April 4, 2024.
14. Author's interview, Seoul, April 8, 2024.  
The IPCC Special Report states that global warming would likely rise to 1.5°C above pre-industrial levels (defined as being the average during 1850–1900) between 2030 and 2052 if warming continues at the 2018 rate. Pathways limiting global warming to 1.5°C with no or limited overshoot would require rapid and far-reaching transitions in energy, land, urban and infrastructure (including transport and buildings), and industrial systems (IPCC 2018).
15. Author's interview, Gimpo, Gyeonggi, April 4, 2024.
16. P4G was postponed to May 2021 due to the pandemic-triggered disruptions.
17. Minister Cho recalled that "few people supported or believed in carbon neutrality even just before the 2050 Carbon Neutrality announcement on October 28, 2020." This remark illustrates the deep skepticism among policy elites, including bureaucrats, rooted in fossil-fuel path dependence and development-oriented inertia.
18. The KND 1.0 adopted a "2+1 policy" structure: the Digital New Deal, the Green New Deal, and strengthened social safety nets (Kihoeok chaejŏngbu 2020). The KND 1.0 earmarked KRW 114.1 trillion in fiscal investment by 2025, aiming to create 1.9 million jobs and promote private-sector innovation. The Green New Deal, with a fiscal investment of KRW 73.4 trillion (KRW 42.7 trillion from public funds), prioritized three projects: green remodelling, green energy, and eco-friendly vehicles. Specifically, KRW 11.3 trillion was allocated to promote green energy between 2020 and 2025. Renewable energy generation capacity targets were set at 12.7 GW (2020), 26.3 GW (2022), and 42.7 GW (2025). Solar, wind, and hydrogen energy emerged as key beneficiaries of government support. While solar and wind received subsidies and loans for installation costs, hydrogen development relied heavily on R&D support to advance cutting-edge technologies.
19. Author's interview, Seoul, April 8, 2024.
20. Author's interview, Zoom, April 30, 2024.
21. Cabinet meeting notes on November 3, December 15, 2020; G20 Summit Speech on November 22, 2020 (Mun 2020b).
22. Cabinet meeting note, July 20, 2021.
23. The PCCN incorporated (1) the previously established Presidential Committee on Green Growth (PCGG) under President Lee Myung-bak; (2) National Council on Climate and Air Quality (NCCA) established in 2019; and (3) Special Committee on Fine Dust.

24. Yoon Suk-yeol was suspended from his duties on December 3, 2024, following the National Assembly's submission of an impeachment motion in response to his coup d'état, and was formally impeached on April 4, 2025.
25. This comparative analysis draws on the author's doctoral dissertation: Park (2025).

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## Appendix A. Interviewee List

Interview period: September 2023–December 2024.

Notes:

- For multiple interviewees participating in a single round of interview, the interviewee ID is coded under the same number (e.g., 1-a, 1-b, etc.).
- Total 21 interviews with 22 interviewees were conducted.

Anonymity rules:

- For interviewees who wished to remain anonymous (Y), their roles, positions, and organizations are kept confidential.
- For interviewees who wished to remain anonymous but agreed to disclose their positions/organizations (B), the relevant information is provided.
- For those who agreed to disclose their identity (N), their real name, roles/positions/organizations are provided.

Interviewee ID	Current Position	Organization	Date (YY/MM/DD)	Location	Anonymity
1	Professor	Korean Economic Development, Industrial Organization	23/09/15	Seoul, Korea	N
2	Research fellow	A government-led research institute	23/09/21	Virtual	Y
3	Director/former co-chair	UN Sustainable Development Solutions Network/the Presidential Committee on Green Growth	23/09/21	Seoul, Korea	N
4	Senior researcher	A government-led research institute	23/09/27	Virtual	Y
5-a	A former senior-official in the government		23/10/06	Seoul, Korea	Y
5-b	Academics	A university	23/10/06	Seoul, Korea	Y
6	Journalist, Climate and Energy Correspondent	JTBC	24/02/14	Virtual	N
7	Seoul Correspondent	A major press	24/02/22	Virtual	Y
8	A manager	A Korean conglomerate	24/02/28	Virtual	Y
9	Academics	A university	24/03/09	Virtual	Y
10	A formal journalist/ environmental issue writer	A major press	24/03/19	Virtual	B
11	A manager	A Korean conglomerate	24/04/03	Seoul, Korea	Y
12	President/former Chief Secretary for Climate and Environment	Gyeonggi Environmental Energy Agency/the presidential office	24/04/04	Gimpo, Korea	B
13	CEO	Solutions for Our Climate (SFOC)	24/04/05	Seoul, Korea	N
14	Former minister	Ministry of Environment	24/04/08	Seoul, Korea	N
15	Senior Associate	Research institute	24/04/22	Virtual	Y
16	Employee	Private renewable sector	24/04/23	Taipei, Taiwan	Y
17	Director	Institute for Green Transformation	24/04/25	Virtual	N
18	Professor/former president and CEO	Dept. of Energy IT, Gachon University/Korea Energy Agency (KEA)	24/04/30	Virtual	N
19	CEO	Hanwha Shinhan TwH	24/05/10	Virtual	N
20	General Manager	A government-led power developer	24/05/10	Virtual	B
21	General Manager	A government-led power developer	24/06/18	Virtual	B