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Financing Strategies for Coal Phase-Out:

Germany's Sovereign Green Bond Model and Implications for South Korea

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Solutions for Our Climate(SFOC) is an independent policy research and advocacy group that aims to make emissions trajectories across Asia compatible with the Paris Agreement 1.5°C warming target.

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Introduction

Achieving carbon neutrality requires large-scale public investment, particularly in the energy and industrial sectors. Among these, coal phase-out represents one of the most capital-intensive and economically sensitive components of the transition. In fiscally conservative countries, the challenge is not only how much to spend, but also how to structure financing in a way that maintains public trust and fiscal credibility.

In South Korea, discussions on green government bonds have gained momentum as a potential instrument to mobilize additional climate finance. At the same time concerns remain regarding fiscal sustainability, market demand, and governance safeguards. Therefore, this issue brief examines whether and how green sovereign bonds can support coal phase-out financing, and in broader context achieving NDC targets, in Korea by drawing lessons from the experience of Germany, a country that has pursued coal phase-out under similarly strong fiscal constraints.

Institutional and Fiscal Constraints to Coal-to-Clean Transition in Korea

South Korea is currently discussing ambitious climate targets, including achieving carbon neutrality by 2050, reducing emissions by 40% by 2030 under its Nationally Determined Contribution (NDC), and potentially up to 61% by 2035. Achieving these goals requires not only a fundamental transformation of the energy and industrial sectors, which have traditionally relied heavily on fossil fuels, but also a proactive role of public finance to enable this structural shift.

In Korea, the *Framework Act on Carbon Neutrality and Green Growths* defines that financial resources for climate action can be secured through government subsidies, transfers from the general account, and revenues from the greenhouse gas *Emission Trading System (ETS).* It further specifies that those funds may be used to support activities aimed at reducing greenhouse gas emissions.

According to the 2026 budget, the *Climate Response Fund* currently amounts to KRW 2.9 trillion, reflecting an increase of 10% compared to 2025.[1] It is additionally expected to grow in the future due to increasing revenues from emissions allowance allocations. Nevertheless, given the substantial financial resources required to respond to the climate crisis, the present scale remains insufficient.

Figure 1: The Size of the Climate Response Fund

Unit: KRW 1 million

Sortation	2025 Plan (A)	2026 Plan (B)	Increase/ Decrease (B-A)	%
Total	***2,621,717***	***2,905,685***	***283,968***	***10.8***
Internal revenue (total)	363,027	831,969	468,942	129.2
Payment for the sale of emission rights	348,700	765,123	416,423	119.4
Collection of loan principal	-	17,058	17,058	net increase
Other income	14,327	49,788	35,461	247.5
Internal government revenue (total)	2,258,690	1,855,744	(402,946)	(17.8)
General account transfer	1,331,187	1,148,851	(182,336)	(13.7)
Special account transfer	300,000	300,000	-	net increase
Fund transfer	307,593	306,893	(700)	(0.2)
Fund deposit	319,910	100,000	(219,910)	68.7
Recovery of surplus funds	-	217,972	217,972	net increase
Recall of deposits at non-currency financial institutions	-	217,972	217,972	net increase

** Other income: government-funded income + other private interest income + other property interest income + other ordinary transfer income.*

Source: 기후에너지환경부 (2026).

1 Ministry of Climate, Energy and Environment (2026, January 20). 2026년 기후에너지환경부 예산 개요.

According to the *1st National Basic Plan for Carbon Neutrality and Green Growth,*[2] achieving the 2030 NDC target requires approximately KRW 16 trillion annually between 2023 and 2027 – highlighting the significant gap between required investment and the current scale of the *Climate Response Fund*. Additional analysis by the Institute for Green Transformation (iGT) and others estimates that an additional budget of KRW 20 trillion per year will be necessary to achieve the 2030 NDC target.

Moreover, criticism has emerged regarding the utilization of existing funds, including a lack of differentiation and consistency in supported projects[3]. Hence, securing additional financial resources through, for instance, green government bonds has become necessary.[4] At the same time, a plan to provide more targeted budget to support projects with a significant greenhouse gas reduction effect, such as expanding renewable energy and abolishing coal-fired power generation, has to be established.

Green Government Bonds in the Korean Context

Introducing additional tax revenue sources, which currently represent the main financial resources of the *Climate Response Fund*, such as paid greenhouse gas emissions permits or carbon taxes, raises political and economic challenges. As a result, raising capital through green government bonds has recently gained attention as an alternative financing option.

Green Bonds are issued specifically for the purpose of raising climate- or environmentally-related projects.[5] They may either follow international standards like those of the International Capital Market Association (ICMA), or domestic guidelines such as the Korean Green Bond Guidelines.

Starting with the introduction of Korean-style green bonds in 2022, domestic companies have increasingly been active in raising funds through green bond issuance. However, even though the *Foreign Exchange Stabilization Fund* issued green-labelled bonds at the national level in 2019 and 2021, a dedicated sovereign green bond has yet to be issued. In contrast, as Figure 2 illustrates, especially European countries, including the United Kingdom and France,

2 Joint Ministries of the Republic of Korea (2023). 탄소중립·녹색성장 국가전략 및 제1차 국가 기본계획.

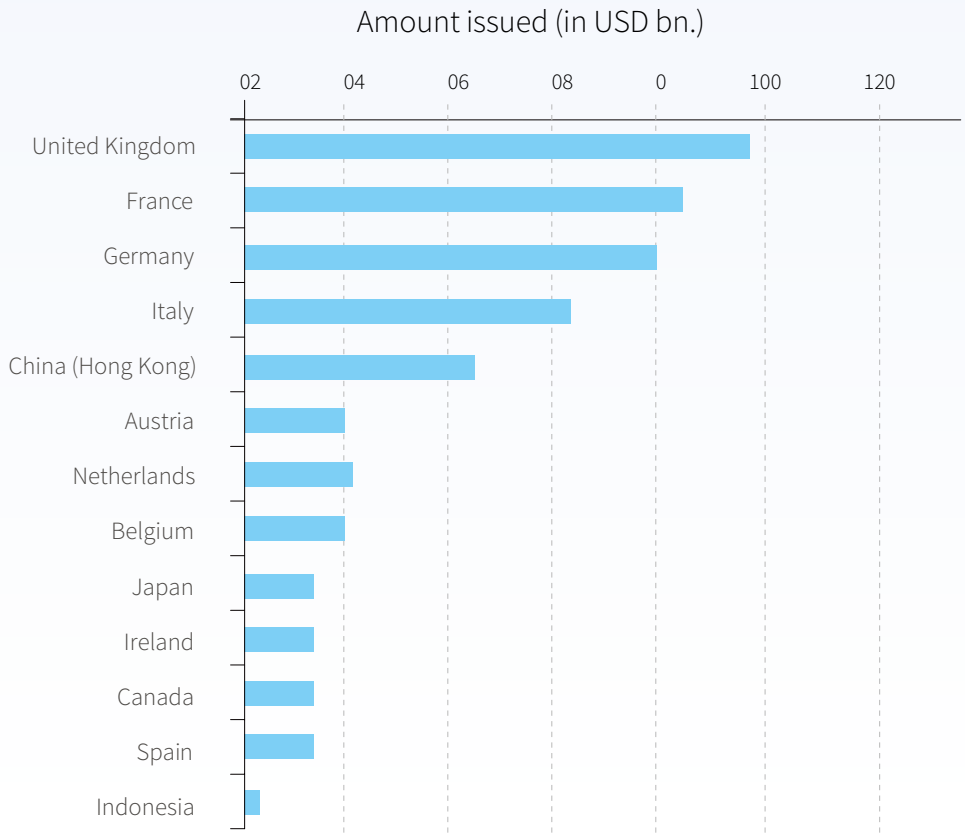
3 Kim, Tae-eun (2024). 기후대응기금평가.

4 Kim, Tae-eun (2024). 기후대응기금평가.

5 Heo, Kyung-seon (2026). 기후 재정 확보 방안: 녹색 국채 중심으로.

have actively issued sovereign green bonds. Japan as well began issuing Green Transformation (GX) bonds in 2024, amounting to KRW 18 trillion (JPY 1.6 trillion) and with plans to issue up to KRW 226 trillion (JPY 20 trillion) over the next ten years.[6]

Figure 2: Global Sovereign Green Bond Issuance



Source: ICMA (2026). Sustainable bond market data.

6 Lee, Bo-ram & Son, Won-joo (2024). 일본의 'GX 경제 이행채' 추진 현황 및 시사점; Joint Ministries of the Republic of Korea (2023). 탄소중립·녹색성장 국가전략 및 제1차 국가 기본계획.

The Need for Introducing Green Government Bonds

In Korea, the Ministry of Economy and Finance has been continuously reviewing the potential introduction of green government bonds, and discussions on enabling such issuance, including an introduction of a bill for the implementation of green government bonds, are gaining increasing momentum.[7]

In this context, for green government bonds to serve as a meaningful tool for climate action, they must be designed in a way that does not undermine fiscal stability. As of 2024, Korea's national debt ratio stands at approximately 52% of GDP. Compared to major economies such as Japan (236%), France (112%), the United Kingdom (101%) and Germany (64%), all of which actively issue green sovereign bonds, Korea's debt level remains relatively moderate; thus, suggesting room for strategic adjustments in its financing design without destabilizing fiscal policy.[8]

Creating Demand for Green Bonds

A central issue in green bond issuance arises in the context of the existence of a "greenium" – meaning, whether green bonds offer lower financing costs compared to conventional bonds. This remains to be critically discussed and the existence of a clear pricing advantage cannot be proven at the present stage.[9]

Nevertheless, Korea's government bond market, amounting to approximately KRW 1,000 trillion, is largely held by banks, insurance companies, pension funds, and security firms. In addition, the share of foreign investors and the average maturity of government bonds, exceeding ten years, have both steadily increased.

Institutional investors that manage long-term capital — such as pension funds, insurance companies, and sovereign wealth funds — tend to place greater emphasis on long-term systemic risks, including ESG factors and climate change. As a result, they are increasingly attentive to the carbon exposure of their portfolios and seek to reduce indirect impacts such as financed

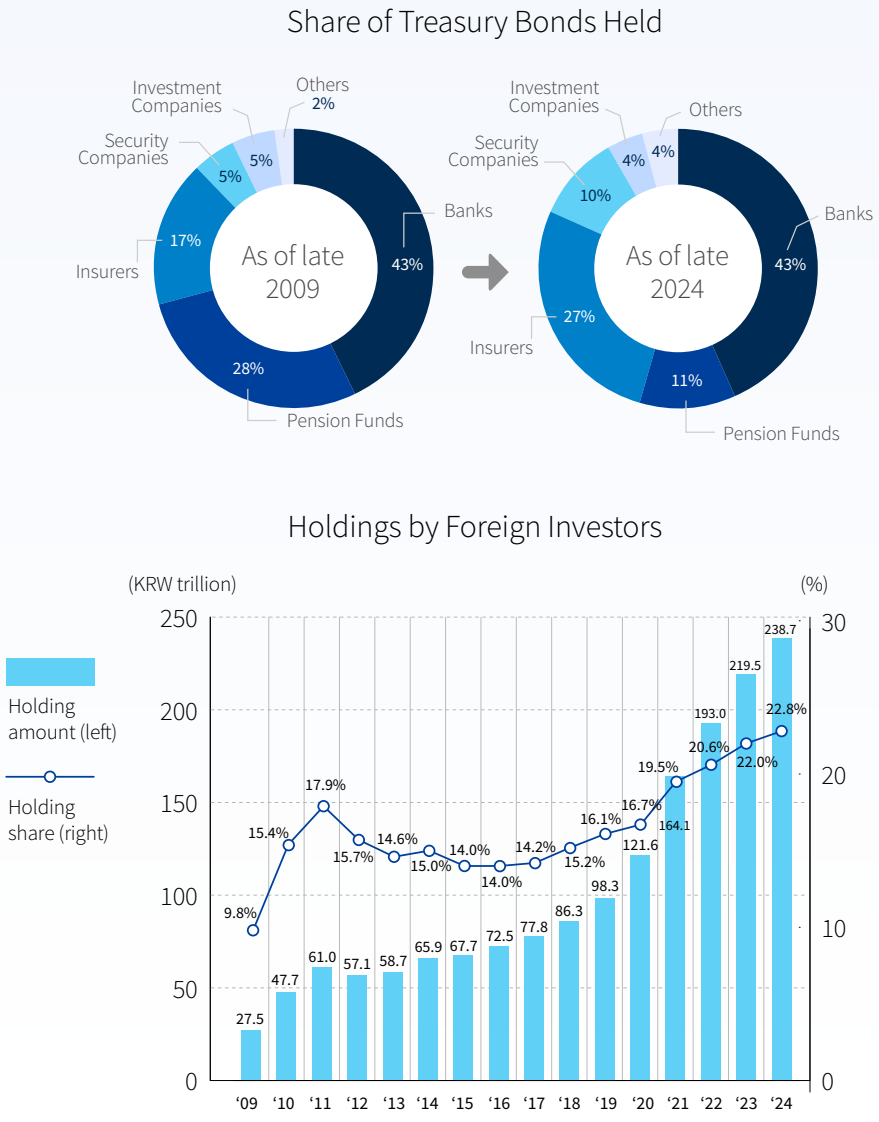
7 Ministry of Economy and Finance (2025). 2025~2029년 국가재정운용계획 주요내용; Ministry of Climate, Energy and Environment (2026, January 20). 2026년 기후에너지환경부 예산 개요.

8 IMF General Government Debt.

9 Heo, Kyung-seon (2026). 기후 재정 확보 방안: 녹색 국채 중심으로. In 녹색국채를 통한 기후재정 확보 방안 토론회 자료집.

emissions. This reflects the fact that climate change poses structural risks to overall market stability over the long term, rather than merely affecting short-term asset performance. In this context, the issuance of sovereign green bonds can serve as a clear signal of the government's commitment to climate action, strengthening investor confidence not only in sovereign bonds but also in the overall Korean market, potentially supporting investment flows.

Figure 3: 2024 National Debt White Paper



Source: Korea Ministry of Economy and Finance (2025).

Establishment of a System to prevent Greenwashing

However, concerns regarding greenwashing remain significant. Reporting standards proposed by the ICMA are largely voluntary, and regulatory oversight of green bond frameworks remains constrained. Additionally, authorities, such as the Financial Supervisory Service, continue to have limited understanding and face structural challenges in monitoring and regulating greenwashing risks in corporate bond markets. Hence, especially in the case of green government bonds, many investors are forced to consider the risk of greenwashing.

Green government bonds issued in the absence of a rigorous management and reporting system would face similar risks. Therefore, a clear and credible governance system, covering issuance, allocation, implementation and reporting, is needed.

In this regard, looking at international examples becomes relevant. Learning from countries that have structured green bond frameworks under comparable fiscal constraints can provide important insights, not only for accelerating energy transition and coal phase-out through robust financial architecture, but also for achieving Korea's 2030 and 2035 NDC commitments.

Case Study Germany

The German experience provides one example illustrating how a debt-averse country can mobilize large-scale transition finance while maintaining fiscal credibility. Similar to Korea, Germany faces the dual challenge of financing coal phase-out costs while investing in broader transition projects to support coal-dependent regions and ensure a just transition for workers, all under legally binding climate targets.[10] Additionally, the country's coal exit framework includes regular legal review mechanisms, which currently assess whether an earlier phase-out than the set 2038 target is feasible.[11]

Thus, examining Germany provides insight into how large-scale, time-bound transition costs can be financed without permanently expanding structural deficits, and how green bonds can function within a broader public finance architecture.

Scope and Structure of Coal-Exit-Related Spending

The foundation of Germany's transition financing structure lies in the Coal Exit Law (Kohleausstiegsgesetz - Gesetz zur Reduzierung und zur Beendigung der Kohleverstromung), which distinguishes between direct coal-exit-related expenditures and broader energy system and regional transition investments.[12] In this context, KRW 1,012 to 1,519 trillion (EUR 600 to 900 billion), a calculation by Agora Energiewende, and Tiedemann and Müller-Hansen,[13] provides a planning benchmark for the estimated need to finance the whole transition from coal to clean. Of this benchmarking, only KRW 75.84 trillion [EUR 44.35 billion] are expected to be allocated toward direct coal exit-related expenditure:[14]

- KRW 7.34 trillion (EUR 4.35 billion): Explicit budget set aside for the direct compensation for coal power plant closures. Allocation of this budget is decided through either participation in official auctions or specific capacity shutdowns.

10 World Resources Institute (2021). Germany's "Coal Commission": Guiding an inclusive coal phase-out.

11 The Federal Government of Germany (2026). Ending coal-generated power.

12 Deutscher Bundestag (2020). Gesetz zur Reduzierung und zur Beendigung der Kohleverstromung und zur Änderung weiterer Gesetze (Kohleausstiegsgesetz).

13 Agora Energiewende (2022). Coal phase-out in Germany: The role of coal exit auctions; Tiedemann and Müller-Hansen (2023). Auctions to phase out coal power: Lessons learned from Germany.

14 Deutscher Bundestag (2020). Gesetz zur Reduzierung und zur Beendigung der Kohleverstromung und zur Änderung weiterer Gesetze (Kohleausstiegsgesetz).

- KRW 67.5 trillion (EUR 40 billion): Budget for local economic development, including, for instance, expenditures for training, infrastructure and transport, fixed under Germany's coal exit law's domestic spending – the so-called "Structural Development Act."

Both direct coal-exit-related expenditures and broader transition investments are financed through a mix of carbon pricing revenues, allocations to special-purpose funds, federal borrowing, and sovereign green bonds issued as refinancing instruments.

Fiscal Architecture: Funds and Debt-Averse Financing Strategy

Article 109(3) of Germany's Basic Law (Grundgesetz – Gesetz zur Schuldenbremse) requires that "the budgets of the Federation and the Länder shall in principle be balanced without revenue from credits," limiting structural federal borrowing to 0.35% of GDP.[15] This constitutional rule not only narrows the scope for permanent deficit financing significantly, but also creates strong societal and political resistance to substantial federal debt expansion.

To respect these fiscal constraints while mobilizing large transition investment needs, the federal government relies on legally distinct special-purpose funds that combine carbon pricing revenues with federal borrowing and refinancing through sovereign green bonds. The purpose of this structure and legal separation is to signal that transition spending is temporary and purpose-bound rather than just an open-ended accumulation of debt. At the same time, instead of framing climate investments as recurring consumption expenditure, it defines those as long-lived public assets.[16] By further incorporating carbon pricing and EU ETS revenues, the structure links climate spending to the 'polluter-pays principle,' thereby gaining societal acceptance and political legitimacy.[17]

Germany's Climate and Transformation Fund (Klima- und Transformations-fonds)[18] is primarily financed through national carbon pricing and EU ETS revenues and channels these into climate and transition-related investments, reducing reliance on permanent deficit financing. In contrast, the Special Fund for Infrastructure and Climate Neutrality (Sondervermögen Infrastruktur

15 Federal Ministry of Justice and Consumer Protection (2025). Basic law for the Federal Republic of Germany.

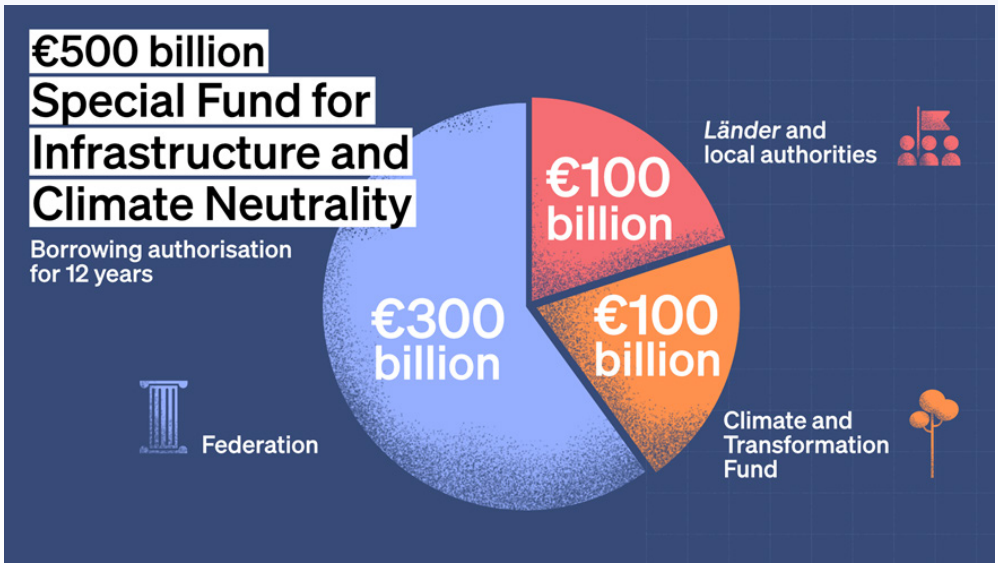
16 Federal Ministry of Finance Germany (2026c). The Special Fund for Infrastructure and Climate Neutrality; The Federal Government of Germany (2026). Ending coal-generated power.

17 Agora Energiewende (2022). Coal phase-out in Germany: The role of coal exit auctions.

18

und Klimaneutralität – SVIK)[19] is mainly financed through borrowing and allocates capital to large-scale infrastructure and climate investments. Rather than covering recurring expenditure, it is designed to finance time-bound, investment-oriented programs.

Figure 4: Special Fund for Infrastructure and Climate Neutrality Allocation

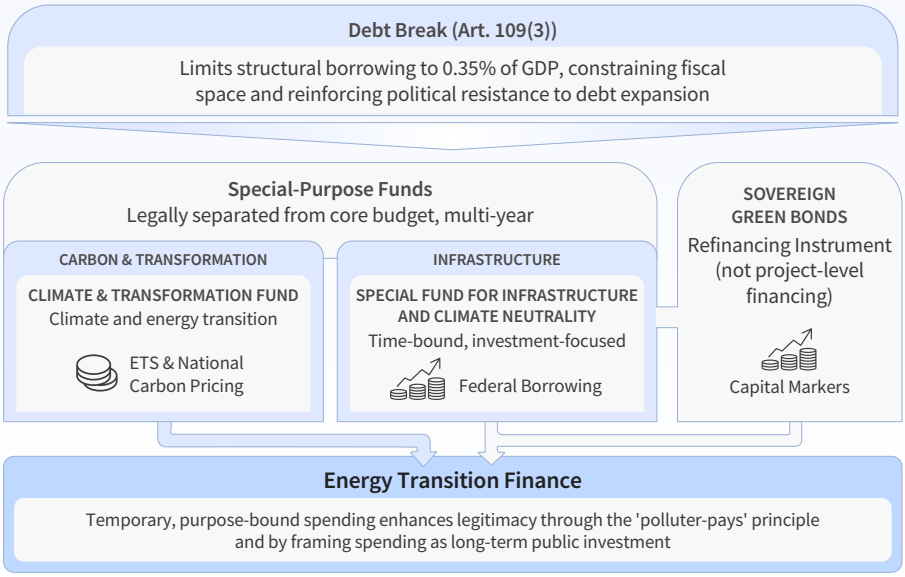


Source: Federal Ministry of Finance Germany (2026c).

Together, these funds enable multi-year, large-scale investment planning without permanently increasing the structural federal deficit; hence they are enabling Germany to justify its coal-to-clean financing approach. This approach reflects a clear preference for revenues over general taxation, special-purpose funds over core budget expansion, and time-limited, exceptional spending over permanent programs.

19 Federal Ministry of Finance Germany (2026c). The Special Fund for Infrastructure and Climate Neutrality.

Figure 5: Germany's Debt-Constrained Energy Transition Financing Model



Scaling and Channeling Capital: Green Bonds, Funds, and Development Banks

To complement this fund-based structure and scale available financing capacity, Germany has issued sovereign green bonds since 2020, amounting to approximately KRW 135-152 trillion (EUR 85-90 billion), as a refinancing instrument for climate-related expenditure.[20] Rather than functioning as project-specific funding tools, the proceeds of these green bonds refinance eligible expenditures that have already been planned under the special-purpose funds, including, for example, renewable energy systems, clean transportation and grid expansion.[21] In doing so, federal green bond issuance supports the broader coal-to-clean transition, especially in the form of investments in former coal-dependent regions.

In countries such as Korea, concerns surrounding green bond issuance often focus on greenium, transparency and additionality. Although German sovereign green bonds have at times demonstrated a modest greenium, besides their refinancing function, their primary relevance lies less in yield differentials than in their credibility-enhancing role within the country's transition strategy.

20 Bundesrepublik Deutschland Finanzagentur GmbH (2026a). Federal Republic of Germany green bond investor presentation; Bundesrepublik Deutschland Finanzagentur GmbH (2026b). Green federal securities.

21 Federal Ministry of Finance (2026a). Federal Republic of Germany: Green bond framework; Federal Ministry of Finance of Germany (2026b). Green bond impact report 2023-2024.

Transparency and additionality concerns are directly addressed through detailed annual allocation and impact reports. These reports disclose the sectoral allocation of proceeds and assess outcomes by using selected impact indicators, such as greenhouse gas (GHG) reductions and modal shift in transport, energy, etc.[22]

As shown in Figure 6, clean transport expenditures, such as regional rail and infrastructure investments, are disclosed both in terms of financial allocation and quantified climate impacts, including potential GHG reductions. It is further highlighted how this contributes to economic diversification in coal regions through job creation and improved connectivity. Similarly, renewable energy and grid expansion investments are linked to system-level pathways, contributing to the replacement of coal-fired generation capacity and preparing system readiness for coal plant closures.[23]

Figure 6: Green Bond Allocation Impact Reporting - Clean Transport

Transport Sector						
Subsector	*Eligible expenditures in 2022 (in € million)*	*Allocation to securities in 2023 (in € million)*				*Selected impact indicators*
		Green Bobl (Oct. 2025)	*Green Bobl (Oct. 2027)*	*Green Bund (Feb. 2033)*	*Green Bund (Aug. 2053)*	
1.1. Rail transport	7,259.5	988.0	1,185.6	2,470.1	2,173.7	1.462 million t CO_2e p.a. GHG reduction 2.009 million t CO_2e GHG reduction 2,712 t No_x reduction p.a. 13 t reduction of particulate matter 1980 km track, 1,787 switches, 18,762 m^3 bridges 92 km noise-reduced route, 38 km noise barriers
1.2. Alternative drive systems and fuels	442.5	60.2	72.3	150.6	132.5	1.270 million t CO_2e GHG reduction 3,499 funded vehicles 58,547 funded charging points 1,409 projects 13 beneficiaries
1.3. Public transport	975.4	132.8	159.3	331.9	292.1	330 projects
1.4. Cycling	253.7	34.5	41.4	86.3	76.0	1.345 million t CO_2e potential GHG reduction 154 km of newly built cycle paths 2,011 measures

Source: Federal Ministry of Finance of Germany (2026b). Green bond impact report 2023-2024.

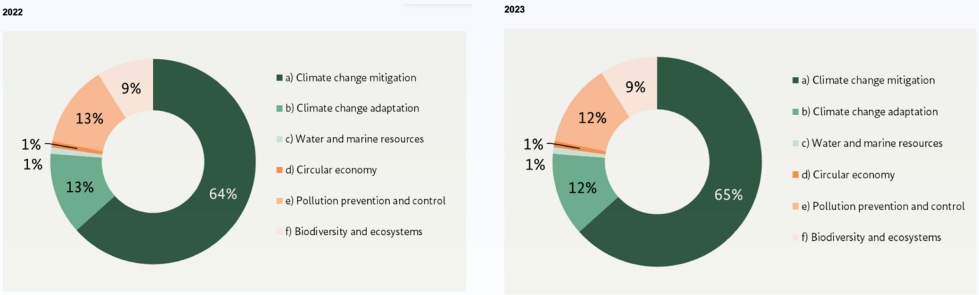
22 Federal Ministry of Finance (2026a). Federal Republic of Germany: Green bond framework.

23 Federal Ministry of Finance of Germany (2026b). Green bond impact report 2023-2024.

Thus, while the allocation reports do not trace proceeds to individual coal plant closures, they demonstrate how green bond-financed investments align with broader decarbonization trends, including the structural decline of coal-fired power generation. By combining the report's allocation data (Figure 7) with sectoral greenhouse gas emission trends (Figure 8), a consistent alignment between climate-aligned public financing and Germany's coal phase-out trajectory can be made: (see Table)

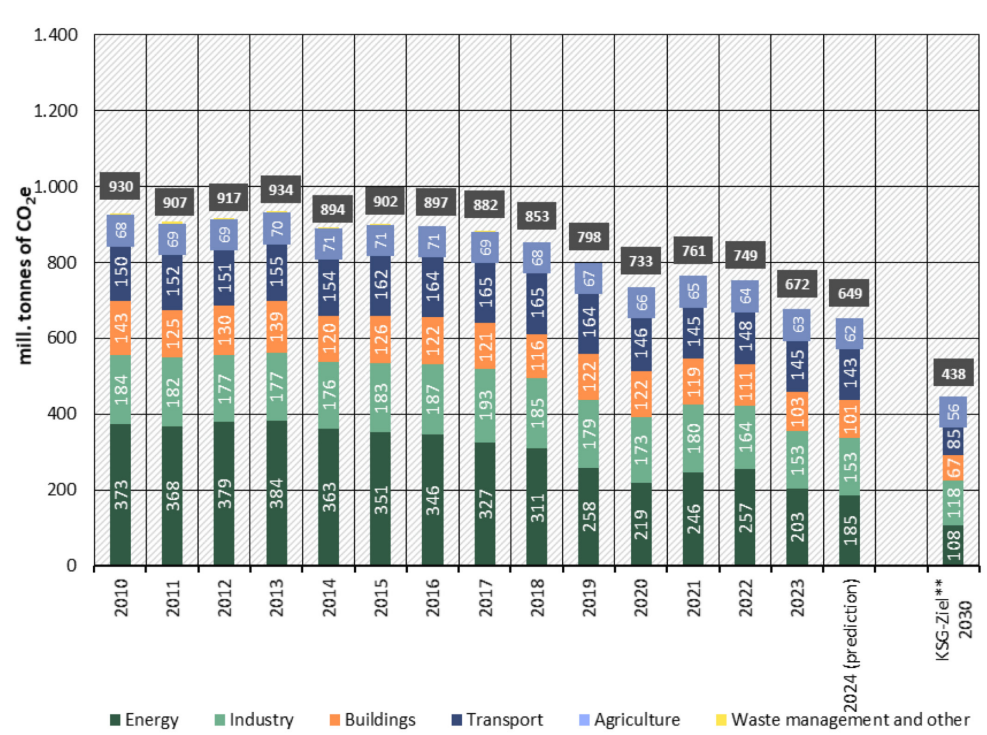
Allocation Category	*Example Expenditures*	*Reported Impacts*	*Relevance for Coal Phase-Out*	*System-Level Trend*
Clean Transport *(~12-13%)*	Regional rail expansion, electrified lines, public transport infrastructure	GHG reductions, modal shift indicators, number of vehicles funded	Reduces fossil fuel demand and supports economic diversification in coal regions	Declining transport sector emissions
Renewable Energy & Grid Expansion *(Major share within mitigation ~64-65%)*	Onshore/offshore wind integration, grid reinforcement, storage	Installed capacity, system integration indicators	Directly enables replacement of coal-fired power generation	Structural increase in renewables share in electricity mix
Energy Efficiency Buildings	Renovation programs, efficiency upgrades	Energy savings (MWh), CO_2 reductions	Reduces overall power demand, lowering coal generation pressure	Gradual decline in buildings sector emissions
Cross-sector Climate Mitigation	Infrastructure modernization, innovation funding	Aggregated mitigation impact	Supports system readiness for coal plant closures	Overall decline in total GHG emissions

Figure 7: Breakdown of eligible federal green bond expenditures



Source: Federal Ministry of Finance of Germany (2026b). Green bond impact report 2023-2024.

Figure 8: Greenhouse gas emission trends in Germany



** The breakdown of the emissions deviates from the UN reporting, the total emissions are identical']*
*** in accordance with the amendment to the Federal Climate Action Act of 12 May 2021, the years 2022-2030 adjusted to over- and undershooting of targets.*

Source: Federal Ministry of Finance of Germany (2026b). Green bond impact report 2023-2024.

Complementing the federal green bond framework, the German development bank KfW also plays a central role in scaling climate finance. As one of the world's largest green bond issuers, KfW raises capital in international markets and channels the proceeds into both international climate finance and domestic project-level investments. Within Germany, KfW supports renewable energy deployment, energy-efficient buildings, clean transport, and municipal infrastructure, including in coal-affected regions.[24] Thus, beyond mobilizing private capital, KfW functions as an implementation arm of federal climate strategy by translating national transition objectives into bankable, project-level investments. In this way, it bridges the gap between sovereign-level financing architecture and local transition execution.

24 KfW (2026). KfW start-of-year press conference: KfW realigns promotional business.

Coal Phase-Out Financing in Lusatia: Separating Compensation from Transition Investment[25]

One direct example of Germany's coal-to-clean financing approach can be seen in Lusatia, a formerly lignite-dependent region in eastern Germany (lignite refers to mining). With Germany's legal commitment to phase out coal by 2038 at the latest, Lusatia faces the structural transformation of an economy long shaped by coal mining and coal-fired power generation. Managing this shift requires not only compensating operators and workers for a just transition but also mobilizing large-scale public investment to build alternative economic structures and energy security.

Following its national coal-to-clean strategy, in this context as well Germany explicitly separated operator compensation from forward-looking transition investment:

- Up to KRW 2.96 trillion (EUR 1.75 billion) compensation package for the coal operator LEAG, also approved by the European Commission in 2025
  - → ~KRW 2.03 trillion (EUR 1.2 billion) for fixed post-mining obligations like recultivation of open-pit mines and social measures
  - → ~KRW 0.93 trillion (EUR 0.55 billion) conditional on foregone profits
- Separate structural transition funding, supporting long-term regional transformation (transport infrastructure, clean energy investment, new industries, innovation)

Here as well it is important to understand that sovereign green bonds do not finance operator compensation directly. Instead, they refinance climate-aligned public investments, such as grid expansion, renewable integration and clean transport, that enable regional diversification and structural readiness for coal plant closures.

Taken together, Germany's transition financing architecture illustrates how a debt-constrained country can combine earmarked revenues, special-purpose funds, sovereign green bonds, and a public development bank to scale coal-to-clean investment while preserving fiscal credibility.

25 Reuters (2025). EU approves $2 billion subsidy for German coal exit.

Design Implications for Korea's Coal-to-Clean Financing

Korea's current fiscal debate around coal phase-out financing reflects several structural constraints similar to those Germany faced during its transition. Both countries face high political and societal sensitivity to rising public debt, share the need for large but temporary investments for coal phase-out and clean energy replacement, must support coal-dependent regions and workers to maintain social acceptance, and cannot rely solely on private finance for long-lived transition infrastructure.

In this context, Germany's experience clearly demonstrates that coal-to-clean financing does not require permanent debt expansion. Rather, temporary transition spending can be structured through revenues, special-purpose funds and refinancing instruments. Carbon pricing revenues, such as proceeds from emissions trading schemes, can anchor large-scale transition finance by providing predictable funding streams. Moreover, the clear institutional separation between coal exit compensation and future-oriented investment enhances transparency and credibility, while visible regional investment supports political acceptance by creating tangible economic alternatives in former coal regions.

For Korea, similar fiscal considerations suggest room for targeted adaptation of such a model. With a government debt ratio of approximately 50% of GDP, an internationally moderate level, there is room for temporary and well-defined borrowing to finance transition investment without undermining fiscal discipline. Previous periods of excessive fiscal austerity have constrained growth and worsened inequality, underscoring the importance of standardized and strategic public investment.

Although the Korean ETS (K-ETS) is not yet sufficiently stringent to provide a fully credible long-term investment signal, and the Climate Response Fund remains limited in scale, both instruments offer an institutional foundation for a more structured transition financing architecture. Germany's experience further suggests that the combination of predictable carbon pricing revenues, legally separated transition funds, and sovereign green bonds used primarily as refinancing instruments can expand fiscal space without blurring the boundary between coal compensation and forward-looking investment.

Green Bonds in particular do not need to directly finance coal plant closures or operator compensation. Instead, by refinancing climate-aligned public

expenditures, such as renewable integration, grid expansion, and clean transport, they can enable system-level decarbonization while maintaining transparency through detailed allocation and impact reporting. This approach strengthens credibility, mitigates concerns around additionality, and helps build investor confidence.

Therefore, for Korea, adopting a similarly structured financing architecture could help close existing financing gaps while preserving fiscal discipline and public support. Germany's experience offers transferable design principles rather than a template, providing strategic guidance for structuring Korea's coal-to-clean financing roadmap under existing fiscal constraints.

Conclusion: Policy Recommendations for Structuring Coal-to-Clean Financing in Korea

Considering the institutional similarities between Germany and Korea as well as the differences in their coal-to-clean financing architecture, Korea could consider implementing the following:

1) Strengthen and stabilize carbon pricing as a revenue anchor by gradually increasing the price predictability of the Korean ETS to create more reliable revenue streams for financing the coal-to-clean transition and to enhance funding stability.

2) Establish a legally separated coal transition account within or alongside the Climate Response Fund to separate coal exit compensation from forward-looking clean energy investment.

3) Expand sovereign green bond issuance primarily to refinance climate-aligned expenditures such as grid expansion, renewable integration, electrified transport, and storage infrastructure; thus, to support system-level decarbonization through robust allocation and impact reporting.

4) Design targeted regional investment programs for coal-dependent areas to support economic diversification, workforce retraining, and industrial restructuring – and for maintaining social acceptance of the coal phase-out.

5) Within existing fiscal frameworks, allow limited and clearly defined temporary borrowing for transition infrastructure. Framing such borrowing as time-bound and investment-oriented can reduce political resistance while avoiding structural debt expansion.

Taken together, these measures would not require permanent debt expansion but rather a restructuring of financing architecture to mobilize and channel capital more effectively under existing fiscal constraints. While the transition to clean energy exposes some vulnerable communities to risks in the short term, it contributes to climate change mitigation, industrial structure, and economic growth in the long term. Therefore, the role of long-term fiscal policy in driving this change and supporting vulnerable populations is essential.

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