Investor Newsletter

KDB 2025 Green Bond Impact Report

KDB Korea Development Bank

Introduction

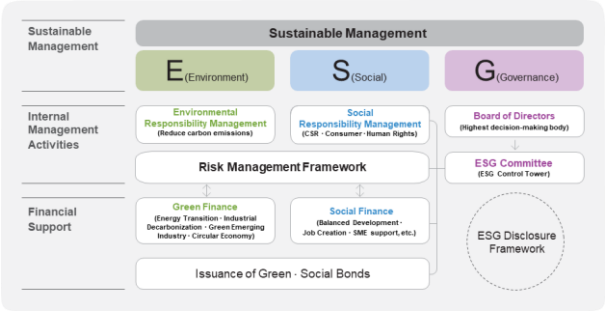
KDB, the National Climate Bank – providing guidance for a sustainable and resilient future

Having played a pivotal role in Korea's economic and industrial development over the past 70 years, KDB is now evolving its role to support the transition to a carbon neutral economy. As Korea's mandated policy bank for driving economic growth and diversification, KDB is now focused on enabling the next phase of development by supporting strategic initiatives and partnerships both domestically and internationally.

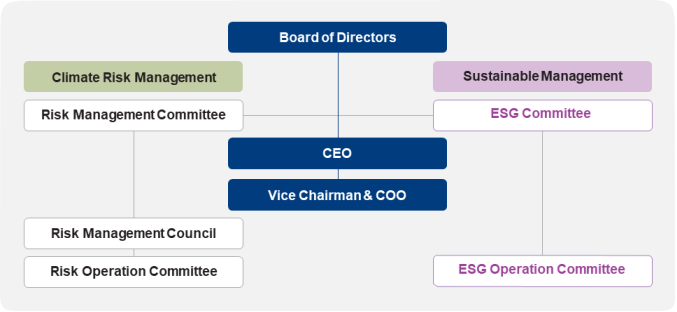
As Korea's leading policy finance institution, KDB supports the government's carbon neutrality and green growth initiatives while upholding its social responsibility as a public institution. These commitments are implemented through the KDB Sustainable Management Framework, which integrates environmental, social, and governance (ESG) principles into KDB's operational and strategic initiatives. This framework is carried out through 1) internal management activities, 2) green & social financing activities as a financial institution, and 3) an ESG decision-making governance, as illustrated in the diagram below.

Especially for green financing, KDB has selected four key areas to implement government's initiative: 1) promoting energy transition, 2) accelerating low-carbon transition, 3) promoting green materials, parts, equipment industries and 4) building a green economy.

KDB Sustainable Management Framework



KDB Sustainable Management Governance



KDB's ESG Landmark

2007 — United Nations Global Compact

Signed in 2007, KDB has been publishing annual reports encompassing KDB's achievement in sustainability and social responsibility activities

2014 — IDFC international development finance club

Through the legacy of KoFC, KDB is a founding member of IDFC founded in 2014

2016 — GREEN CLIMATE FUND

In Dec 2016, KDB has become an accredited entity elected by the Green Climate Fund to carry out the GCF-funded projects. KDB was re-certified in May 2022

2017 — EQUATOR PRINCIPLES

KDB has been adopting the Equator Principles, benchmark for environmental social risks, since its membership to the Association in Jan 2017

2021 — TCFD Task Force on Climate-related Financial Disclosures

In May 2021, KDB has declared support for Task Force on Climate-related Financial Disclosures together with Korean FSC and financial regulators

2021 — P4G Pioneering Green Partnerships, Investing in Impact

In May 2021, KDB hosted special sessions at Pioneering Green Partnerships on the topic of the role of finance for post-COVID-19 green recovery

In its continued commitment to sustainability, KDB has engaged with international organizations and aligned itself with leading global initiatives. KDB is the first signatory of the Equator Principles and Green Climate Fund (GCF) accredited entity out of Korea. By closely following new regulatory requirements and market developments, KDB will continue to support companies across South Korea in their sustainability efforts thereby contributing to reaching regional, national, and international climate and sustainability goals.

Introduction

KDB's ESG Self-Assessment System

KDB developed a distinctive ESG Self-Assessment System that reflects the characteristics of each industry based on insourced data. With ESG Self-Assessment System, companies that require ESG monitoring and management can obtain better understanding of their ESG aspects.

Benefits of ESG Self Assessment Tool

- Provide brief/in-depth analysis of ESG measures that each company requires
- Apply differential weighting on questions by industry based on industrial characteristics
- Introduce 5-step ESG scoring system, allowing detailed calculation of corporate ESG scores
- Internalize ESG expertise through in house development; allowing 1) quality contents to customers and 2) speed and flexibility in service maintenance

CO_2 Emissions Management Tool

To support Korean SMEs and export-oriented companies in measuring and managing CO_2 emissions, KDB introduced tailored solutions and provided a range of free tools. As the CO_2 Emissions Management Tool sees broader adoption, it is expected to strengthen the ESG capabilities of these companies within both domestic and global supply chains.

CO_2 Emissions Management Tool

Tool	Services	Cost	CO_2e Calculation Methodology
Net Z	CO_2e management and reporting system	Free of charge	Bottom-up method[1] (supplier → buyer)
CNRI	RPA of CO_2e measurement and management	Charge	Top-down method[2] (buyer → supplier)
Glassdome	CO_2e measurement and management tool		
I-ESG	ESG diagnosis, management of supply chain CO_2e		
AENTS	Management of CO_2e using AI		

KDB's ESG Consulting

KDB also provides corporate clients with ESG consulting services to help them deal with increasing ESG-related regulations and reporting requirements, strengthening their ESG capacity.

Supporting ESG upgrade for Korean industries and companies

3C Model

Collaboration
- Specialized agency to support ESG in the capital market
- Internal and external collaborating entities
- ESG lectures & education

Consulting
- GHG data auto-management
- One-point consulting to KDB ESG Consulting Platform user
- ESG consulting using institutional network

Capability
- Establish ESG Database
- Apply IB ESG Guide
- Evaluate business performance of ESG-related PF projects (Energy, Infrastructure)

Strategic Target

Detailed Programs

ESG Education
- ESG curriculum for universities
- Share IB ESG Guide and hold in-house sessions

ESG Consulting Platform
- Develop ESG self-assessment tool
- Provide CO_2 emission management tool

ESG Consulting to the Government
- Create IB ESG Guide for Ministry of Environment
- Evaluate ESG-related PF for GCF certification
- Networking with related entities

ESG Consulting to Corporates
- Strategy consulting for SMEs' new ESG business
- ESG consulting for startups

Note:
1) After calculating carbon emissions that reflect the characteristics and needs of the supplier, aligned information is provided to multiple buyers (one source, multi-use);
2) After developing a system that reflects the needs of buyer, it is applied to all vendors. Buyers need to process the information separately to each vendors

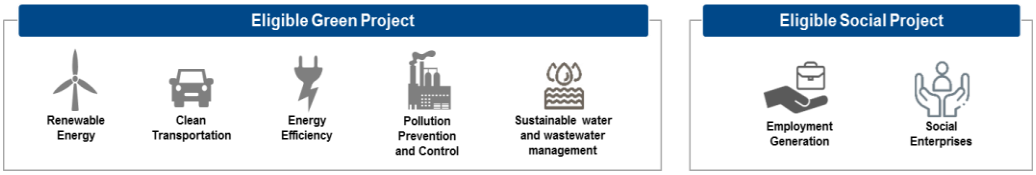
ESG Framework

KDB Sustainable Bond Framework

In June 2019, KDB updated its Sustainable Bond Framework to meet the increasing global standards on ESG. The Framework is available here.

Use of Proceeds

- Proceeds from any KDB Green Bonds/Social Bonds/Sustainability Bonds ("Bonds") will exclusively be used to finance and/or refinance projects under the Eligible Green Categories & Social Categories.



Project Evaluation & Selection

- The Business Planning Department annually establishes budget of fund-supply and the business units select projects or business falling under the target industry and/or corporations.
- The evaluation on the project/the new business starts with preliminary assessment of E&S risk and impact of a proposed project.
- For credit approval, KDB's Credit Review Division reviews whole matters including the appropriateness of mitigation measures to deal with identified E&S impacts.
- KDB's Credit Committee meeting is held to approve the proposed project.

Management of Proceeds

- The proceeds will be managed by KDB's Treasury Department. Upon receipt of eligible projects for the use of proceeds through KDB's internal information system, the Treasury Department will allocate the proceeds to the projects in accordance with the financing schedule of the projects.
- Pending/unallocated proceeds of the Bond will be invested in cash, cash equivalents and/or marketable securities, in accordance with KDB's cash management policies.

Reporting

- KDB will provide an annual "Investor Newsletter" with the information of allocation of the proceeds of the Bonds. The report will be posted to KDB's official website.

Second Party Opinion

SUSTAINALYTICS

"… Sustainalytics is of the opinion that the Korea Development Bank Sustainable Bond Framework is credible and impactful, and aligns with the four core components of the GBP, SBP and SBG…"

** SPO is available at https://www.kdb.co.kr/wcmscontents/pdf/Second_Party_Opinion_by_Sustainalytics_2019.pdf*

KDB Korea Development Bank

ESG Bond Summary

USD 1.5bn equivalent, outstanding balance of KDB green bonds issued in foreign currencies, as of December 31, 2024

1,720 tCO_2e/USD 1mn, annual amount of tCO_2e emission avoided per USD 1mn of KDB green bonds

Since the issuance of the inaugural green bond in 2017, KDB has played a pivotal role in leading South Korea's transition to carbon neutrality by supporting environmentally sustainable and socially responsible businesses, financed through its issuances of green and social bonds (hereinafter, "ESG bonds").

KDB has issued 16 green bonds and 1 social bond in the international capital market by December 31, 2024, with a total volume of USD 4.3bn. The outstanding volume as of December 31, 2024 amounts to USD 1.5bn. The first green bond was aligned with KDB's Green Bond Framework 2017 while the following green and social bonds were issued in accordance with KDB's Sustainable Bond Framework 2019. Both frameworks conform to the International Capital Market Association's ("ICMA") Green Bond Principles and Second Party Opinions validated both frameworks' alignment. For more information, please find 2019 Framework and Second Party Opinions available on the official website at www.kdb.co.kr.

KDB is forging ahead with efforts on the sustainability front, with its ESG commitments being a critical aspect of its ambition to set a new benchmark in South Korea's ESG capital market. Since KDB introduced its green bond in 2017, many other Korean banks and corporates followed suit, accelerating growth and diversity in the domestic ESG bond market. KDB successfully issued KRW-denominated ESG bonds in the domestic market, totaling KRW 5.8tn (approx., USD 3.9bn) with outstanding balance as of December 31, 2024 at KRW 2.5tn (approx., USD 1.7bn). KDB will continue its commitment to create a more supportive environment for scaling up South Korea's capacity for carbon neutrality.

Total amount of USD 1,549mn outstanding KDB Green Bonds in the international markets as of December 31, 2024

No	Issue Year	Maturity	Size	Use of Proceeds	ISIN
1	2021	2031	CHF 200mn	Renewable Energy	CH1121837228
2		2051	USD 20mn	Renewable Energy & Clean Transportation	XS2395577674
3		2025	USD 700mn	Renewable Energy & Clean Transportation	US500630DM73
4	2022	2023	USD 40mn	Clean Transportation	XS2458348294
5		2027	CHF 225mn	Renewable Energy & Clean Transportation	CH1179184424
6		2029	HKD 390mn	Renewable Energy & Clean Transportation	XS2476745430
7		2029	HKD 169mn	Renewable Energy & Clean Transportation	XS2478301380
8		2032	HKD 349mn	Renewable Energy & Clean Transportation	XS2496446845
9		2026	MXN 3,500mn	Renewable Energy & Clean Transportation	MXCDKD000007
10	2024	2025	BRL 250mn	Renewable Energy & Clean Transportation	XS2926260618
Total			**USD 1,549mn**[1)]		

Note:
1) FX rate as of Dec 31, 2024
2) Please note that this Newsletter only covers the ESG Bonds issued in the international capital markets. You can find the Newsletters for KRW-denominated ESG bonds issued in Korea on KDB's official website at www.kdb.co.kr

Allocation Reporting

Allocation Overview & Highlights

Total outstanding amount of the green bonds as of December 31, 2024 was approximately USD 1.5bn equivalent. In 2024, some of the projects KDB had financed were fully or partially repaid ahead of their original maturities, and KDB proactively sought new eligible projects to replace them. In 2025, KDB will continue its efforts to source eligible projects and allocate both the repaid funds and any unused proceeds accordingly.

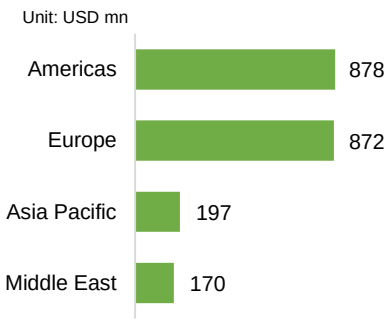
< Eligible Projects for Green Classified in KDB's Sustainable Bond Framework>

Eligible Green Projects

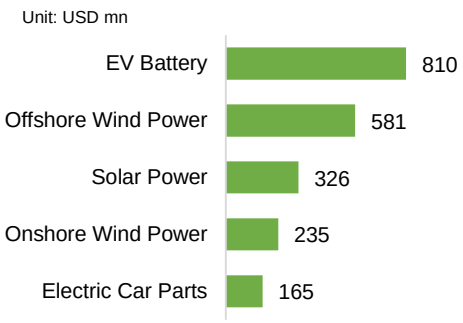
- Renewable Energy
- Clean Transportation
- Energy Efficiency
- Pollution Prevention and Control
- Sustainable water and wastewater management

The following illustrates the breakdown of KDB's green portfolio. Geographically, the Americas accounted for the largest share at 41%, followed by Europe (41%), Asia Pacific (9%) and the Middle East (8%). By project category, the largest portion of proceeds was allocated to EV battery projects (38%), followed by offshore wind power (27%), solar power (15%), onshore wind power (11%) and electric car parts (8%). In terms of breakdown by green categories, renewable energy accounted for 54% and clean transportation for 46% of the portfolio. In 2024, the refinancing ratio stood at 39%.

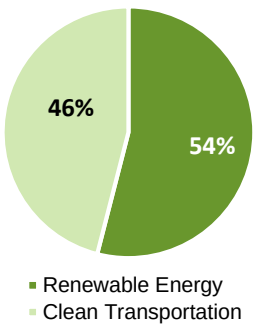
< Breakdown by regions >



< Breakdown by project categories >



< Breakdown by green categories >



Share of unallocated proceeds: 0%

Allocation Reporting (Cont'd)

Allocation Details

Green Bond Series	Sector	Total Project Size (USD mn)	KDB Share (USD mn)			Status of Projects	
			Total Share Size	Disbursed Outstanding Amount	To be Disbursed	Operation	Construction
6th Green Bond	Solar	1,043	198	68	-		
CHF 200mn	Onshore Wind	629	84	59	-		
(CH1121837228)	Offshore Wind	6,829	184	133	6		
	Sub Total	**8,501**	**466**	**260**	**6**	**58%**	**42%**
7th Green Bond	Electric Car Parts	92	20	20	-		
USD 20mn							
(XS2395577674)	**Sub Total**	**92**	**20**	**20**	**-**	**100%**	**0%**
8th Green Bond	EV Batteries	3,031	504	470	-		
USD 700mn	Solar	1,494	234	153	2		
(US500630DM73)	Onshore Wind	405	25	91	-		
	Offshore Wind	3,311	80	67	6		
	Sub Total	**8,241**	**843**	**781**	**8**	**91%**	**9%**
10th Green Bond	EV Battery	500	40	40	-		
USD 40mn							
(XS2458348294)	**Sub Total**	**500**	**40**	**40**	**-**	**100%**	**0%**
11th Green Bond	Solar	186	92	43	-		
CHF 225mn	Onshore Wind	465	85	85	-		
(CH1178184424)	Offshore Wind	7,858	172	113	24		
	Sub Total	**8,509**	**349**	**241**	**24**	**16%**	**84%**
12th Green Bond							
HKD 390mn	Offshore Wind	6,217	103	70	4		
(XS2476745430)							
13th Green Bond							
HKD 169mn	Electric Car Parts	205	75	75	-		
(XS2478301380)							
14th Green Bond							
HKD 349mn	**Sub Total**	**6,422**	**178**	**145**	**4**	**100%**	**0%**
(XS2496446845)							
15th Green Bond	Electric Car Parts	115	30	30	-		
MXN 3,500mn	EV Battery	2,700	300	14	286		
(MXCDKD000007)	Solar	960	67	61	-		
	Offshore Wind	3,277	127	75	41		
	Sub Total	**7,052**	**524**	**180**	**327**	**18%**	**82%**
16th Green Bond	Electric Car Parts	118	40	40	-		
BRL 250mn	Offshore Wind	557	44	33	8		
(XS2926260618)	**Sub Total**	**675**	**84**	**73**	**8**	**49%**	**51%**
	Grand Total	**39,992**	**2,504**	**1,740**	**377**		

**All figures are rounded up to the nearest number*

Note:
1) FX rate as of Dec 31, 2024

KDB Korea Development Bank

Impact Reporting

Impact Highlights

1,720 tCO_2e/USD 1mn

the annual amount of tCO_2e avoided per USD 1mn of KDB share

4.5 mn

the estimated annual amount of tCO_2e avoided (KDB share)

2,432 GWh/year

the expected total energy production per year under KDB share

874,907

the number of electric vehicles annually manufactured under KDB share

tCO_2e Avoided by the Green Portfolio under KDB Share

The tCO_2e emission equivalent avoided by using renewable energy and/or by replacing internal combustion vehicles with electric vehicles serves as an indicator of environmental impact.

Portfolio Category	KDB Share (USD mn)	Estimated tCO_2e Avoided (tCO_2e/year)	tCO_2e Avoided* (tCO_2e/USD 1mn)
Renewable Energy	1,594	1,063,652	667*
Clean Transportation	1,009	3,414,692	3,383*
Total	**2,603**	**4,478,344**	**1,720***

** Weighted average tCO_2e Avoided among the projects*

1. Breakdown of tCO_2e avoided from Renewable Energies

Green Bond Series	Total Project		KDB Share		
	Expected Energy Production (GWh/year)	Estimated tCO_2e Avoided (tCO_2e/year)	Expected Energy Production (GWh/year)	Estimated tCO_2e Avoided (tCO_2e/year)	tCO_2e Avoided (tCO_2e/USD 1mn)
6	7,406	2,540,237	542	195,687	421
8	7,061	3,525,830	1,021	548,710	1,250
11	9,035	2,889,370	370	119,364	342
12-14	6,325	2,194,146	109	37,151	361
15	6,272	2,319,928	310	121,061	624
16	1,018	532,185	80	41,679	947
Total	**37,117**	**14,001,696**	**2,432**	**1,063,652**	**667***

** Weighted average CO2e avoided among the projects*

2. Breakdown of tCO_2e avoided from Clean Transportation

Green Bond Series	Total Project		KDB Share		
	Annual Production of Electric Vehicles (Number of EV)	Annual tCO_2e Avoided (tCO_2e/year)	Annual Production of Electric Vehicles (Number of EV)	Annual tCO_2e Avoided (tCO_2e/year)	tCO_2e Avoided (tCO_2e/USD 1mn)
7	620,000	2,419,810	134,783	526,046	26,302
8	950,000	3,707,773	151,457	591,123	1,172
10	340,000	1,326,993	27,200	106,159	2,654
12-14	540,000	2,107,576	333,315	1,300,903	17,345
15	580,000	2,263,693	109,508	427,402	1,295
16	350,000	1,366,022	118,644	463,058	11,576
Total	**3,380,000**	**13,191,867**	**874,907**	**3,414,692**	**3,383***

** Weighted average CO2e avoided among the projects*

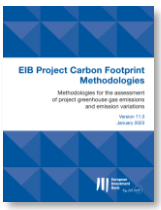
KDB Korea Development Bank

Detailed Criteria and Methodology

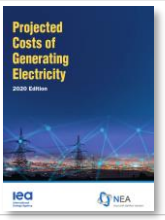
Methodology for Calculation of the Impact Indicators

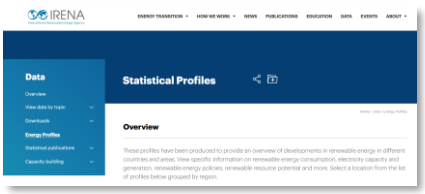
Renewable Energy

The Methodology for the Assessment of Project GHG Emissions and Emission Variations (the version 11.3)[1] released in January 2023 by the European Investment Bank was used to calculate the CO_2e avoided per each renewable energy project.



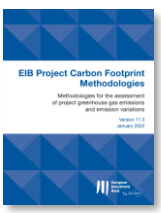
For the capacity factors of renewable energies by country, we first used the Projected Costs of Generating Electricity published in 2020[2] & 2015[3] by the International Energy Agency. If factors for certain countries are not available from IEA references, the capacity factors provided by International Renewable Energy Agency[4] were used.



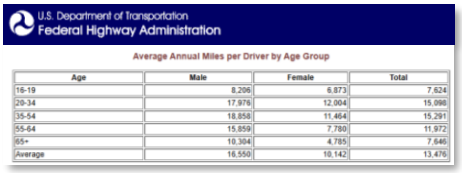


Clean Transportation

The Methodology for the Assessment of Project GHG Emissions and Emission Variations (the version 11.3)[1] released in January 2023 by the European Investment Bank was used to calculate the CO_2e avoided by replacing internal combustion vehicles with electric vehicles.



The average annual miles of driving per driver released by the Federal Highway Administration of the U.S. Department of Transportation was also used for calculating the annual amount of CO_2e.



Age	Male	Female	Total
16-19	8,206	6,873	7,624
20-34	17,976	12,004	15,098
35-54	18,858	11,464	15,291
55-64	15,859	7,780	11,972
65+	10,304	4,785	7,646
Average	16,550	10,142	13,476

Note:
1) [Source] https://www.eib.org/attachments/lucalli/eib_project_carbon_footprint_methodologies_2023_en.pdf
2) [Source] https://www.iea.org/reports/projected-costs-of-generating-electricity-2020
3) [Source] https://www.oecd-nea.org/ndd/pubs/2015/7057-proj-costs-electricity-2015.pdf
4) [Source] http://www.irena.org/Data/Energy-Profile
5) Any difference in CO_2e avoided from the previous Investor Newsletter is due to applying different versions of the aforementioned methodologies and exchange rates

Featured Projects

Ørsted

PFI AWARDS 2022 GLOBAL M&A DEAL OF THE YEAR

- KDB provided GBP 53mn facility loan for the Hornsea 2 offshore wind farm in the North Sea and 89km away from Yorkshire Coast, fully operational since August 2022.
- As the world's largest offshore wind farm covering an area of 462km^2, the wind farm comprises 165 wind turbines (8MW capacity each) with total capacity of 1.3GW.
- With a 1.3GW capacity, the facility is set to generate enough energy to power over 1.4 million homes in the United Kingdom.
- Carbon emission reduction effect of the project is 1,515,242 tCO_2e/year.

LG Energy Solution Michigan, Inc.

"Power Today. Preserve Tomorrow"

- KDB approved USD 350mn facility loan to LG Energy Solution Michigan, a subsidiary of LG Energy Solution, for expansion of its secondary battery production facility for EVs in Michigan.
- LG Energy Solution Michigan is the first EV battery plant in the U.S and leads the U.S EV transition by supplying secondary batteries to its local, national, and global automotive partners. Through this project, LG Energy Solution Michigan will increase its EV battery manufacturing capacity by 20GWh, which corresponds to 280,000 units of EV/year.
- Carbon emission reduction effect of the project is 1,092,817 tCO_2e/year.