



WHEN TRUST MATTERS



KOREA DEVELOPMENT BANK (KDB) GREEN BOND IMPACT REPORT PERIODIC REVIEW



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Prepared by: DNV Business Assurance Korea Ltd.

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This statement is valid until the Investor Newsletter provided in April 2024 remains unchanged.

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Disclaimer

Our assessment relies on the premise that the data and information provided by the client to us as part of our review procedures have been provided in good faith. Because of the selected nature (sampling) and other inherent limitation of both procedures and systems of internal control, there remains the unavoidable risk that errors or irregularities, possibly significant, may not have been detected. Limited depth of evidence gathering including inquiry and analytical procedures and limited sampling at lower levels in the organization were applied as per scope of work. DNV expressly disclaims any liability or co-responsibility for any decision a person or an entity may make based on this Statement.

Statement of Competence and Independence

DNV applies its own management standards and compliance policies for quality control, which are based on the principles enclosed within ISO/IEC 17029:2019 - Conformity Assessment – General principles and requirements for validation and verification bodies, and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirement, professional standards, and applicable legal and regulatory requirement. This engagement work was carried out by an independent team of sustainability assurance professionals. DNV was not involved in the preparation of statements or data included in the Framework except for this Statement. DNV maintains complete impartiality toward stakeholders interviewed during the assessment process.

DNV'S INDEPENDENT ASSESSMENT

Scope and Objectives

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 15 green bonds and one social bond in the international market by December 31, 2023, with a total volume of USD 4.2 billion. The outstanding volume as of December 31, 2023 amounted to USD 3.3 billion. The first green bond was aligned with KDB's Green Bond Framework 2017 while the next green and social bonds were issued in accordance with KDB's Sustainable Bond Framework 2019. Both frameworks conforms to the International Capital Market Association's ("ICMA") Green Bond Principles ("GBP") and Second Party Opinions ("SPO") validated both frameworks' alignment. For more information, please find 2019 Framework and a SPO available on the official website at www.kdb.co.kr/index.jsp.

DNV has been commissioned by KDB to provide the review of 2024 KDB Green Bond Impact Report which is the annual summary report of the proceeds allocation and environmental impacts of the bonds. Our criteria and information covered to serve the purpose are described under 'Work Undertaken' shown below. The periodic review was made based on the information and documents provided by KDB as well as the interview conducted with them and correspondence exchanges. We do not provide any independent assurance or other type of audit activities.

In this report, no assurance is provided regarding the financial performance of the Issuer, the value of any investments in the bonds, or the long-term environmental benefits arising from the nominated projects. Our main objective of these reviews has been to provide an assessment that the bonds has met the criteria established on the basis set out below.

Responsibilities of the Management of KDB and DNV

The management of KDB has provided the information and data used by DNV during the delivery of this review. Our statement represents an independent opinion and is intended to inform KDB management and other interested stakeholders in the bonds as to whether the established criteria have been met, based on the information provided to us. In our work we have relied on the information and the facts presented to us by KDB. DNV is not responsible for any aspect of the nominated assets referred to in this opinion and cannot be held liable if estimates, findings, opinions, or conclusions are incorrect. Thus, DNV shall not be held liable if any of the information or data provided by KDB used as a basis for this assessment were not correct or complete.

Basis of DNV's opinion

- **Principle One: Use of Proceeds.** The Use of Proceeds criteria are guided by the requirement that issuers of bonds must use the funds raised to finance eligible activities. The eligible activities should produce clear environmental benefits.
- **Principle Two: Process for Project Evaluation and Selection.** The Project Evaluation and Selection criteria are guided by the requirements that issuers of bonds should outline the process they follow when determining eligibility of an investment using green bond proceeds, and outline any impact objectives it will consider.
- **Principle Three: Management of Proceeds.** The Management of Proceeds criteria are guided by the requirements that sustainability bonds should be tracked within the issuing organization, that separate

portfolios should be created when necessary and that a declaration of how unallocated funds will be handled should be made.

- **Principle Four: Reporting.** The Reporting criteria are guided by the recommendation that at least Sustainability Reporting to the bond investors should be made of the use of bond proceeds and that quantitative and/or qualitative performance indicators should be used, where feasible.

Work Undertaken

Our work constituted a high-level review of the available information, based on the understanding that this information was provided to us by KDB in good faith. We have not performed an audit or other tests to check the veracity of the information provided to us. The work undertaken to form our opinion included:

- Creation of a Protocol, adapted to the purpose of the annual and impact report, as described above and in Schedule 3 to this Assessment;
- Assessment of documentary evidence provided by KDB on the annual report and supplemented by a high-level desktop research. These checks refer to current assessment best practices and standards methodology;
- Review of published materials by KDB and KDB's website;
- Discussions with KDB's responsible people, and review of relevant documentation and evidence related to the criteria of the Protocol; and
- Documentation of findings against each element of the criteria. Our opinion as detailed below is a summary of these findings.

Findings and DNV's Opinion

DNV's findings are listed below:

1. **Principle One: Use of Proceeds.** KDB has reported use of the proceeds of the bonds to finance and refinance projects and assets including:

Green Projects

- Renewable Energy (Onshore and offshore wind power, solar power)
- Clean Transportation (Electric Car Parts and EV battery)
- Sustainable Water Management and Wastewater Management (Flood mitigation)

DNV reviewed the criteria for the project categories above to determine the eligibility of the nominated projects and assets. DNV can confirm that proceeds were used for eligible green projects mentioned in the Framework.

2. **Principle Two: Process for Project Evaluation and Selection.** The bonds' proceeds have been allocated to finance and refinance the assets as defined in Schedule 1. DNV has reviewed evidence that demonstrates that KDB regularly assesses opportunities for improvement and devises action plans and initiatives to mitigate negative environmental impact from its operations.
3. **Principle Three: Management of Proceeds** DNV has reviewed evidence showing how KDB traced the proceeds from the bonds, from the time of issuance to the time of disbursement. The full amount of the proceeds will be managed within its existing accounting system, and thereafter disbursed in accordance with its financing schedule. The details of the disbursement and the outstanding value will be tracked using KDB's internal financial reporting system. At the end of each financial period, KDB reviews the outstanding balance of the bonds. As stated above, DNV provides no assurance regarding the financial performance of the bonds, the value of any investments in the bond, or the effects of the transaction.

4. **Principle Four: Reporting.** KDB has confirmed that it will upload its impact report in its website. This includes a description of the project and value of the proceeds invested, as well as the associated qualitative and quantitative environmental impacts.

On the basis of the information provided by KDB and the work undertaken, it is DNV's opinion that the bonds meets the criteria established in the Protocol and that it is aligned with the Green Bond Principles, which is to "enable capital-raising and investment for new and existing projects with environmental benefits."

for DNV Business Assurance Korea Ltd.

Seoul, Republic of Korea / 5 April 2024



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Schedule 1. Nominated Assets

Allocation of Proceeds of Green Bond

(Unit: USD mn)

Green Bond Series	Sector	Total Project Size (USD mn)	KDB Share (USD mn)			Status of Projects	
			Total share size	Disbursed Amount	Outstanding	To be Disbursed	Operation
2 nd Green Bond	Solar	950	447	292	-		
EUR 500mn	Offshore Wind	22,794	682	396	114		
3 rd Green Bond	Onshore Wind	445	137	107	-		
USD700mn	EV Battery	2,024	243	243	-		
	Sub Total	26,213	1,509	1,038	114	55%	45%
4 th Green Bond	Offshore Wind	2,724	39	37	-		
USD300mn	Onshore Wind	1,691	249	189	1		
(US500630DK18)	Sub Total	4,415	288	226	1	84%	16%
6 th Green Bond	Solar	618	57	52	-		
CHF 200mn	Offshore Wind	4,061	120	107	6		
(CH1121837228)	Sub Total	4,679	177	159	6	32%	68%
7 th Green Bond	Electric Car Parts	92	20	20	-		
USD 20mn	Sub Total	92	20	20	-	100%	0%
(XS2395577674)							
8 th Green Bond	Solar	1,494	234	179	53		
USD 700mn	EV Batteries	1,853	404	404	-		
(US500630DM73)	Sub Total	3,347	638	583	53	17%	83%
9 th Green Bond	Flooding mitigation	1,422	200	52	148		

BRL 1,285mn	Offshore Wind	1,498	109	83	23		
(XS2452429645)	Electric Car	233	70	34	36		
	Parts						
	Sub Total	3,153	379	169	207	16%	84%
10 Green Bond	EV Battery	500	40	40	-		
USD 40mn	Sub Total	500	40	40	-	100%	0%
(XS2458348294)							
11th Green Bond	EV Battery	1,328	111	111	-		
CHF 225mn	Offshore Wind	504	93	55	38		
(CH1178184424)	Sub Total	1,832	204	166	38	54%	46%
12th Green Bond	Offshore Wind	3,724	67	39	5		
13th Green Bond	Electric Car	205	75	75	-		
	Parts						
14th Green Bond	Sub Total	3,929	142	114	5	37%	63%
15th Green Bond	Solar	4,810	100	73	13		
MXN 3,500mn	EV Battery	2,700	350	14	336		
(MXCDKD000007)	Sub Total	7,510	450	87	349	15%	85%
	Grand Total	55,670	3,847	2,602	773		

SHCHEDULE 2: IMPACT REPORTING (GREEN CATEGORY)

CO2e Avoided by the green portfolio under KDB share

Portfolio category	KDB Share (USD mn)	Estimated CO ₂ e Avoided: (t CO ₂ /Year)	CO ₂ e Avoided* (t CO ₂ /USD 1.0mn)
Renewable Energy	2,334	2,526,564	1,083
Clean Transportation	1,313	3,591,145	2,735
Total	3,647	6,117,709	1,678

1. Breakdown of CO2e Avoided from Renewable Energies

Green Bond Series	Total Project		KDB Share		
	Expected Energy Production (GWh/Year)	Estimated CO ₂ e Avoided (t CO ₂ /Year)	Expected Energy Production (GWh/Year)	Estimated CO ₂ e Avoided (t CO ₂ /Year)	CO ₂ e Avoided (t CO ₂ /USD 1.0mn)
2-3	27,606	9,665,921	5,159	1,929,082	1,523
4	4,517	1,996,881	449	193,987	674
6	2,777	977,476	120	42,379	239
8	2,219	1,009,490	343	151,321	647
9	3,457	1,312,764	130	57,783	535
11	715	223,023	131	40,960	440
12-14	4,735	1,515,241	86	27,456	410
15	6,938	3,451,300	176	83,596	836
Total	52,964	20,152,097	6,594	2,526,564	1,083

2. Breakdown of CO2e Avoided from Clean Transportation

Green Bond Series	Total project		KDB Share		
	Annual Production of Electric Vehicles	Annual CO ₂ e Avoided	Annual Production of Electric Vehicles	Annual CO ₂ e Avoided	CO ₂ e Avoided per USD mn
3	650,000	2,536,897	78,815	305,149	1,256
7	620,000	2,419,810	134,783	526,049	26,302
8	445,375	1,738,263	97,912	382,142	946
9	650,000	2,536,897	197,041	769,036	10,989
10	340,000	1,326,993	27,200	106,159	2,654
11	184,626	720,580	15,386	60,048	541
12-14	540,000	2,107,576	333,315	1,300,903	17,345
15	280,000	1,092,817	36,296	141,662	405
Total	3,710,001	14,479,834	920,118	3,591,145	2,735

*The life-cycle CO₂e is based on 10-year lifetime of an average mid-size car by powertrain

Sustainable Water Management – Flooding Mitigation

Affected area	The number of protected residents	Estimated costs for flood damages prevented	The number of jobs created for the project
44,000 acres	245,000	194.8 million per year	4,185

*Source: US Environmental Protection Agency

Schedule 3. The KDB-specific Eligibility Assessment Protocol

1. Use of Proceeds

Ref.	Criteria	Requirements	Works Undertaken	DNV Findings
1a	Type of bond / loan	<p>The Bond and Loan must fall in one of the following categories, as defined by the Green/Social Bond Principles:</p> <ul style="list-style-type: none"> Green/Social Use of Proceeds Bond Green/Social Use of Proceeds Revenue Bond Green/Social Project Bond Green/Social Securitized Bond Loan instrument made available for Green and Social project (Green and Social use of loan proceeds) 	<p>Review of:</p> <ul style="list-style-type: none"> 2017 Green Bond Framework 2019 KDB Sustainable Bond Framework 2024 KDB Green Bond Impact Report <p>Discussion with KDB (or a delegated entity)</p>	<p>The reviewed evidence confirms that the bonds fall in the category: Green Use of Proceeds of the Bonds.</p>
1b	Sustainable Project Categories	<p>The cornerstones of Sustainability Bond and Loan are the utilization of the proceeds of the bond and the loan which should be appropriately described in the legal documentation for the security.</p>	<p>Review of:</p> <ul style="list-style-type: none"> 2017 Green Bond Framework 2019 KDB Sustainable Bond Framework Sub Project Performance and Financial Documentation 2024 KDB Green Bond Impact Report <p>Discussion with KDB (or a delegated entity)</p>	<p>As identified by the purpose of the Bonds was to use the proceeds to finance and refinance for projects falling under the following categories:</p> <p>Green Bonds</p> <ul style="list-style-type: none"> Renewable Energy (Onshore and offshore wind power, and solar power) Clean Transportation (EV battery, electric car parts) Sustainable Water Management and Wastewater Management (Flooding mitigation) <p>Total outstanding amount of the green bonds as of December 31, 2023 was approximately USD 3.3billion equivalent, out of which USD 2.6 billion were allocated.</p> <p>DNV’s assessment concluded that the above-mentioned assets lead to environmentally positive outcomes in accordance with</p>

Ref.	Criteria	Requirements	Works Undertaken	DNV Findings
				Green Bond Principles.
1c	Environmental benefits	All designated Green Project categories should provide clear environmentally sustainable benefits, which, where feasible, will be quantified or assessed by the Issuer.	<p>Review of:</p> <ul style="list-style-type: none"> 2017 Green Bond Framework 2019 KDB Sustainable Bond Framework Relevant project documents Environmental impact verification related documents 2024 KDB Green Bond Impact Report <p>Discussion with KDB (or a delegated entity)</p>	<p>DNV reviewed raw data provided by KDB to verify environmental impact of the invested projects and its accuracy of calculation.</p> <ul style="list-style-type: none"> Renewable Energy: In order to strengthen accuracy of calculation, KDB made use of internationally accepted references such as Assessment of Project GHG Emissions and Emission variations by European Investment Bank, IEA Projected Costs of Generating Electricity and IRENA Energy Profile by Country. Clean Transportation: In order to strengthen accuracy of calculation, KDB made use of internationally accepted reference such as Assessment of Project GHG Emissions and Emission variations by European Investment Bank and the national data from the U.S. Department of Transportation. <p>In terms of impact data, nothing came to our attention to suggest that these data have not been properly collated from information reported at operational level, nor that the assumptions used were inappropriate.</p>
1d	Refinancing Share	In the event that a proportion of the proceeds may be used for refinancing, it is recommended that issuers provide an estimate of the share of financing vs. re-financing, and where appropriate, also clarify which investments or project portfolios may be refinanced.	<p>Review of:</p> <ul style="list-style-type: none"> 2017 Green Bond Framework 2019 KDB Sustainable Bond Framework 2024 KDB Green Bond Impact Report Sub Project Performance and Financial Documentation <p>Discussion with KDB (or a delegated entity)</p>	<p>KDB set the look back period of past two years before issuances of the bonds, which is in alignment with market practices.</p> <p>The refinancing ratio of the Green Bonds is 31.6% (USD 821 million out of USD 2.6 billion).</p>

2. Process for Project Selection and Evaluation

Ref.	Criteria	Requirements	Works Undertaken	DNV Findings
2a	Investment-decision process	<p>The Issuer of a Sustainability Bond and Loan should outline the decision-making process it follows to determine the eligibility of projects using Sustainability Bond and Loan proceeds. This includes, without limitation:</p> <ul style="list-style-type: none"> A process to determine how the projects fit within the eligible Green and Social Projects categories identified in the Green/Social Bond Principles and Green/Social Loan Principles; The criteria making the projects eligible for using the Sustainability Bond proceeds; and The environmental sustainability objectives, and the social objectives 	<p>Review of:</p> <ul style="list-style-type: none"> 2017 Green Bond Framework 2019 KDB Sustainable Bond Framework 2024 KDB Green Bond Impact Report <p>Discussion with KDB (or a delegated entity)</p>	<p>DNV's assessment concluded that KDB has taken appropriate measures for the proceeds to be allocated to the eligible green and social projects in accordance with the Framework.</p>
2b	Issuer/borrower's environmental and social and governance framework	<p>In addition to information disclosed by an issuer on its Sustainability Bond process, criteria and assurances, Sustainability Bond and Loan investors may also take into consideration the quality of the issuer's overall framework and performance regarding environmental sustainability.</p>	<p>Review of:</p> <ul style="list-style-type: none"> 2017 Green Bond Framework 2019 KDB Sustainable Bond Framework KDB Sustainability Policy 2024 KDB Green Bond Impact Report <p>Discussion with KDB (or a delegated entity)</p>	<p>KDB is committed to placing sustainability at the core in its loan providing activities. Its website discloses related activities with the Company's Commitments, Corporate Social Responsibility, and E&S Risk Management.</p> <p>https://www.kdb.co.kr/CHGLIR05N00.act?_mnuId=IHIHEN0028&JEX_LANG=EN</p>

3. Bond Characteristics

Ref.	Criteria	Requirements	Works Undertaken	DNV Findings
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Ref.	Criteria	Requirements	Works Undertaken	DNV Findings
3a	Tracking procedure	The net proceeds of Sustainability Bonds should be credited to a sub-account, moved to a sub-portfolio or otherwise tracked by the Issuer in an appropriate manner and attested to by a formal internal process that will be linked to the Issuer's lending and investment operations for Green/Social Projects.	Review of: <ul style="list-style-type: none"> 2017 Green Bond Framework 2019 KDB Sustainable Bond Framework 2024 KDB Green Bond Impact Report KDB ERP system Discussion with KDB (or a delegated entity)	The evidence reviewed shows how KDB has tracked the bonds' proceeds appropriately, from the time of issuance to the time of disbursement. The details of the disbursement and the outstanding value have been tracked by KDB's internal financial system. DNV confirmed that KDB's internal process can manage and track the outstanding balance of the Green and Social Bonds.
3b	Tracking procedure	So long as the Sustainability Bonds and Loans are outstanding, the balance of the tracked proceeds should be periodically reduced by amounts matching eligible green investments or loan disbursements made during that period.	Review of: <ul style="list-style-type: none"> 2017 Green Bond Framework 2019 KDB Sustainable Bond Framework 2024 KDB Green Bond Impact Report KDB ERP system Discussion with KDB (or a delegated entity)	The evidence reviewed shows that KDB has traced the proceeds from the bonds, from the time of issuance to the time of disbursement, and reduced the net balance of proceeds by amounts in line with its financing schedule. At the end of each financial period, the outstanding balance of the Bond was reviewed.
3c	Temporary holdings	Pending such investments or disbursements to eligible Green and Social Projects, the Issuer should make known to investors the intended types of temporary investment instruments for the balance of unallocated proceeds.	Review of: <ul style="list-style-type: none"> 2024 KDB Green Bond Impact Report Discussion with KDB (or a delegated entity)	KDB has communicated with DNV that unused proceeds are managed as cash in the main deposit account with risk-free deposit rate.

4. Reporting

Ref.	Criteria	Requirements	Works Undertaken	DNV Findings
4a	Periodical reporting	In addition to reporting on the use of proceeds and the temporary investment of unallocated proceeds, Issuers should provide at least annually a list of projects to which Sustainability Bond proceeds have been allocated including	Review of: <ul style="list-style-type: none"> KDB Website 2024 KDB Green Bond Impact Report Discussion with KDB (or a delegated entity)	KDB will upload this Investor Newsletter on its website https://www.kdb.co.kr/index.jsp . The Company intends to publish the Impact Report until the net proceeds are fully allocated and upload it on the website.

Ref.	Criteria	Requirements	Works Undertaken	DNV Findings
		<ul style="list-style-type: none"> when possible with regards to confidentiality and/or competitive considerations a brief description of the projects and the amounts disbursed, as well as the expected environmentally sustainable impact. 		



About DNV

Driven by our purpose of safeguarding life, property and the environment, DNV enables organisations to advance the safety and sustainability of their business. Combining leading technical and operational expertise, risk methodology and in-depth industry knowledge, we empower our customers' decisions and actions with trust and confidence. We continuously invest in research and collaborative innovation to provide customers and society with operational and technological foresight. With our origins stretching back to 1864, our reach today is global. Operating in more than 100 countries, our 16,000 professionals are dedicated to helping customers make the world safer, smarter and greener.

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