



WHEN TRUST MATTERS



MIRAE ASSET SECURITIES PERIODIC REVIEW



Document title: Periodic Review on Mirae Asset Securities' ESG Bond Annual Reporting

Prepared by: DNV Business Assurance Korea Ltd.

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This statement is valid until the ESG Bond Annual Reporting provided in September 2023 remains unchanged.

Table of Contents

Table of Contents.....	2
DNV'S INDEPENDENT ASSESSMENT	3
Scope and Objectives	3
Responsibilities of the Management of Mirae Asset Securities and DNV	3
Basis of DNV's opinion.....	3
Work Undertaken	4
Findings and DNV's Opinion	4
Schedule 1. Nominated Projects & the Proceeds Allocation	6
Schedule 2. Impact Reporting (Green Category)	6
Green Category – Renewable Energy	6
Green Category – Green Buildings	6
Schedule 3. Mirae Asset Securities-specific Eligibility Assessment Protocol	7
1. Use of Proceeds	7
2. Process for Project Selection and Evaluation	9
3. Management of Proceeds	10
4. Reporting	11

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.

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DNV applies its own management standards and compliance policies for quality control, in accordance with ISO/IEC 17021:2015 - Conformity Assessment Requirements for bodies providing audit and certification of management systems, and accordingly maintains a comprehensive system of quality control, including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements. We have complied with the DNV Code of Conduct¹ during the assessment and maintain independence where required by relevant ethical requirements. 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.

¹ DNV Code of Conduct is available from DNV website (www.dnv.com)

DNV'S INDEPENDENT ASSESSMENT

Scope and Objectives

On 29 June 2021, Mirae Asset Securities (hereinafter, "Mirae Asset Securities" or the "Company") issued a Green Bond (hereinafter, the "BOND") with the proceeds of USD 300 million. The BOND was issued based on Mirae Asset Securities' Green, Social and Sustainable Bond Framework ("Framework") which was published June 2021².

DNV has been commissioned by Mirae Asset Securities to provide the review of Mirae Asset Securities' ESG Bond Annual Reporting (2023). 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 Mirae Asset Securities as well as the interview conducted with its team or a delegated entity. 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 of the BOND, 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 BOND has met the criteria established on the basis set out below.

Responsibilities of the Management of Mirae Asset Securities and DNV

The management of Mirae Asset Securities 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 Mirae Asset Securities management and other interested stakeholders in the BOND 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 Mirae Asset Securities. 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 Mirae Asset Securities is 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 an issuer of the BOND must use the funds raised to finance (or refinance) 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 an issuer of the BOND should outline the process it follows when determining eligibility of an investment using the 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 the BOND 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 the BOND proceeds and that quantitative and/or qualitative performance indicators should be used, where feasible.

² The SPO was provided based on the Framework 2019 and after that only minor changes from the previous one were made for the Framework 2021 including reinforcing introduction part and a department name change in charge of ESG implementation.

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 Mirae Asset Securities 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 report, as described above and in Schedule 3 to this Assessment;
- Assessment of documentary evidence provided by Mirae Asset Securities 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 Mirae Asset Securities and Mirae Asset Securities' website;
- Discussions with Mirae Asset Securities' 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.** Mirae Asset Securities has reported use of the proceeds of the BOND to finance and refinance projects and assets including:

Green category

- *Renewable Energy (Solar power)*
- *Green Buildings*

DNV reviewed the criteria for the project categories above to determine the eligibility of the nominated projects and assets.

2. **Principle Two: Process for Project Evaluation and Selection.** The proceeds of the BOND have been allocated to finance and refinance the assets as defined in Schedule 1. DNV has reviewed evidence that demonstrates that Mirae Asset Securities follows the project evaluation and selection described in the Framework, 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 Mirae Asset Securities traced the proceeds from the BOND, from the time of issuance to the time of disbursement. Mirae Asset Securities' treasury team tracks the net proceeds through a separate GSS Bond Register (the "Register") that includes details on issuing terms of GSS Bond and amount allocated to Eligible Projects. At the end of each financial period, Mirae Asset Securities reviews the outstanding balance of the BOND. As stated above, DNV provides no assurance regarding the financial performance of the BOND, the value of any investments in the Bond, or the effects of the transaction.
4. **Principle Four: Reporting.** Mirae Asset Securities has confirmed that it will include and maintain a dedicated section on the BOND 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 Mirae Asset Securities and the work undertaken, it is DNV's opinion that the BOND meets the criteria established in the Protocol and that it is aligned with the stated definition of green bonds within the Green Bond Principles 202, which is to enable capital-raising and investment for new and existing projects with environmental and social benefits.

for DNV Business Assurance Korea Ltd.

Seoul, Republic of Korea / 15 September 2023



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Technical Reviewer
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Schedule 1. Nominated Projects & the Proceeds Allocation

Total Allocation: USD 300,000,000 (fully allocated)

Asset Category	Project	Place	Allocated Amount (USD)				
			2018	2019	2020	2021	Total
Green Building	Green Building A	France	-	76,064,313	-	-	76,064,313
	Green Building A	France	-	77,568,538	-	-	77,568,538
	Green Building A	France	-	107,776,597	-	-	107,776,597
	Green Building B	USA	16,955,337	-	-	-	16,955,337
	Green Building B	USA	21,109,394	-	-	-	21,109,394
Renewable Energy	Domestic Solar Power A	Korea	-	-	-	283,876	283,876
	Domestic Solar Power B	Korea	-	-	-	170,212	170,212
	Overseas Solar Power C	Japan	-	71,733	-	-	71,733
Grand Total			38,064,731	261,481,181	-	454,088	300,000,000

Schedule 2. Impact Reporting (Green Category)

Green Category – Renewable Energy

Projects	Detail	Installed Capacity (MW)	Expected Power Generation (MWh/year)	Exp. CO2 avoided (kg/year)
Solar Power	Japan	41.4	29	12,944
	Korea A	2.0	131	62,152
	Korea B	2.0	79	37,266
Total		45.4	235	112,363

Green Category – Green Buildings

Projects	Location	Net Lettable Area (m2)	Green Building Certification (Rating Level)
Green Building A	France	61,564	BREEAM Excellent
Green Building B	USA	130,649	LEED Gold
Total		192,213	-

Schedule 3. Mirae Asset Securities-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"> THE Company Green, Social and Sustainability Bond Framework ESG Bond Annual Reporting (as of Sep 2023) <p>Discussion with Mirae Asset (or a delegated entity)</p>	<p>The reviewed evidence confirms that the BOND falls in the category: Green Use of Proceeds.</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"> THE Company Green, Social and Sustainability Bond Framework Sub Project Performance and Financial Documentation ESG Bond Annual Reporting (as of Sep 2023) <p>Discussion with Mirae Asset (or a delegated entity)</p>	<p>Use of proceeds were fully allocated to invest green projects such as green buildings with the SPO-prescribed certifications and solar projects from Korea and Japan.</p> <p>BOND</p> <ul style="list-style-type: none"> Green Buildings (99.8%) Renewable Energy-Solar Power (0.2%) <p>The proceeds were used for the following projects:</p> <p>Green Buildings</p> <table border="1"> <thead> <tr> <th>Type</th> <th>Location</th> </tr> </thead> <tbody> <tr> <td>Office Building</td> <td>France and USA</td> </tr> </tbody> </table> <p>Renewable Energy</p>	Type	Location	Office Building	France and USA
Type	Location							
Office Building	France and USA							

Ref	Criteria	Requirements	Works Undertaken	DNV Findings	
				Type	Location
				Solar Power	Republic of Korea and Japan
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"> THE Company Green, Social and Sustainability Bond Framework Environmental impact data Green building certificates ESG Bond Annual Reporting (as of Sep 2023) <p>Discussion with Mirae Asset (or a delegated entity)</p>	<p>DNV reviewed raw data provided by Mirae Asset Securities to verify environmental impact of the invested projects and its accuracy of calculation.</p> <ul style="list-style-type: none"> Green Buildings: Mirae Asset Securities invested the buildings with green certifications as indicated in the Framework. The Company presented case studies on this project which include the amounts of avoided CO2 emission. DNV checked calculation methods and found there is not anything incorrect in the calculation methodology³ in exhibiting its environmental impact as a reference. Renewable Energy: Mirae Asset Securities invested renewable energy such as solar power. The impact was calculated making use of capacity factor of solar generating technology from IEA Projected Costs of Generating Electricity.⁴ The calculation methodology was checked by DNV and nothing incorrect was found in it. <p>Considering the above-mentioned effects, DNV considers that Mirae Asset Securities' green building projects and renewable energy projects have brought positive environmental impacts.</p>	

³ Mirae Asset Securities used data from Climate Action Tracker (- an independent scientific analysis that tracks government climate actions and measures) for calculating emissions of commercial buildings which is compared against emissions of green buildings in the CBI Green Building carbon intensity target Calculator. As for baseline emissions, the Company used EIB Project Carbon Footprint Methodologies 2023.

- [https://climateactiontracker.org/data-portal/?country=US§or=Buildings&indicator=Buildings%20emissions%20intensity%20\(per%20floor%20area,%20commercial\)&scenario=benchmark&scenario=historic&mode=indicators](https://climateactiontracker.org/data-portal/?country=US§or=Buildings&indicator=Buildings%20emissions%20intensity%20(per%20floor%20area,%20commercial)&scenario=benchmark&scenario=historic&mode=indicators)
- <https://www.climatebonds.net/standard/buildings/commercial/calculator>
- https://www.eib.org/attachments/lucalli/eib_project_carbon_footprint_methodologies_2023_en.pdf

⁴ https://www.oecd-nea.org/upload/docs/application/pdf/2020-12/eqc-2020_2020-12-09_18-26-46_781.pdf

Ref	Criteria	Requirements	Works Undertaken	DNV Findings
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.	Review of: <ul style="list-style-type: none"> ESG Bond Annual Reporting (as of Sep 2023) BOND proceeds allocation data Discussion with Mirae Asset (or a delegated entity)	DNV confirms that refinancing share is 99.8%.

2. Process for Project Selection and Evaluation

Ref.	Criteria	Requirements	Works Undertaken	DNV Findings
2a	Investment-decision process	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: <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 	Review of: <ul style="list-style-type: none"> The Company Green, Social and Sustainability Bond Framework Internal confirmation related to the project selection ESG Bond Annual Reporting (as of Sep 2023) Discussion with Mirae Asset (or a delegated entity)	In the 2021 Mirae Asset Securities' Green, Social and Sustainability Bond Framework, the company has indicated procedures for project selection and evaluation. DNV's assessment concluded that the Company has followed the procedures in the Framework. The project evaluation and selection was carried out, firstly by making relevant business units identify and propose eligible projects and secondly by ensuring that the ESG Implementation Team and Working Committee assess environmental of the projects and make recommendation for inclusion as Eligible Use of Proceeds.

		<ul style="list-style-type: none"> The environmental sustainability objectives, and the social objectivities 		
2b	Issuer/borrower's environmental and social and governance framework	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 <u>the quality of the issuer's overall framework and performance regarding environmental sustainability.</u>	<p>Review of:</p> <ul style="list-style-type: none"> The Company Sustainability and CSR Policy and Governance Framework 2023 Integrated Report⁵ The Company Green, Social and Sustainability Bond Framework ESG Bond Annual Reporting (as of Sep 2023) <p>Discussion with Mirae Asset (or a delegated entity)</p>	The website of Mirae Asset Securities describes its effort for promoting sustainability. It also issues sustainability report on an annual basis to communicate with related stakeholders about its sustainability effort. https://securities.miraeasset.com/newir/view/pc/en/about/sustain.jsp

3. Management of Proceeds

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.	<p>Review of:</p> <ul style="list-style-type: none"> Mirae Asset Securities' Green, Social and Sustainability Bond Framework Mirae Asset Securities' ERP snapshot GSS Bond Register (provided in summarized excel sheet) Internal confirmation related to management of proceeds 	<p>The evidence reviewed shows how Mirae Asset Securities has tracked the Bond's proceeds appropriately, from the time of issuance to the time of disbursement. Mirae Asset's treasury team tracks the net proceeds through a separate GSS Bond Register (the "Register") that includes details on issuing terms of GSS Bond and amount allocated to Eligible Projects.</p> <p>DNV confirmed that Mirae Asset Securities' internal process can manage and track the outstanding balance of the BOND proceeds.</p>

⁵ <https://securities.miraeasset.com/newir/view/pc/en/about/sustain.jsp>

			<ul style="list-style-type: none"> ESG Bond Annual Reporting (as of Sep 2023) <p>Discussion with Mirae Asset (or a delegated entity)</p>	
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.	<p>Review of:</p> <ul style="list-style-type: none"> Mirae Asset Securities' Green, Social and Sustainability Bond Framework Mirae Asset Securities' ERP snapshot GSS Bond Register (provided in summarized excel sheet) ESG Bond Annual Reporting <p>Discussion with Mirae Asset (or a delegated entity)</p>	The evidence reviewed shows that Mirae Asset Securities 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 balances of the BOND were 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.	<p>Review of:</p> <ul style="list-style-type: none"> Mirae Asset Securities' Green, Social and Sustainability Bond Framework Mirae Asset Securities' ERP snapshot ESG Bond Annual Reporting <p>Discussion with Mirae Asset (or a delegated entity)</p>	The evidence reviewed shows that the net proceeds of the BOND are being managed within Mirae Asset Securities' existing accounting system, have been tracked, and are reported to have been fully allocated to the nominated projects.

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	<p>Review of:</p> <ul style="list-style-type: none"> Website 	Mirae Asset Securities will upload this ESG Bond Annual Reporting on its website: https://english.securities.miraeasset.com/

		<p>should provide at least annually a list of projects to which Sustainability Bond proceeds have been allocated including</p> <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. 	<ul style="list-style-type: none"> Mirae Asset Securities' ESG Bond Annual Reporting <p>Discussion with Mirae Asset (or a delegated entity)</p>	<p>The annual report includes a description of the project and value of the proceeds invested, as well as associated qualitative and quantitative environmental and social impacts.</p>
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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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