

## ASSESSMENT

19 December 2025



Send Your Feedback

### Contacts

Natasha Talisca  
Adrianto  
Associate Lead Analyst-Sustainable Finance  
Moody's Japan K.K.  
natashatalisca.adrianto@moodys.com

MJ Park  
Associate Lead Analyst-Sustainable Finance  
mj.park@moodys.com

Jeffrey Lee  
SVP-Sustainable Finance  
sukjoonjeffrey.lee@moodys.com

# Japan Finance Organization for Municipalities

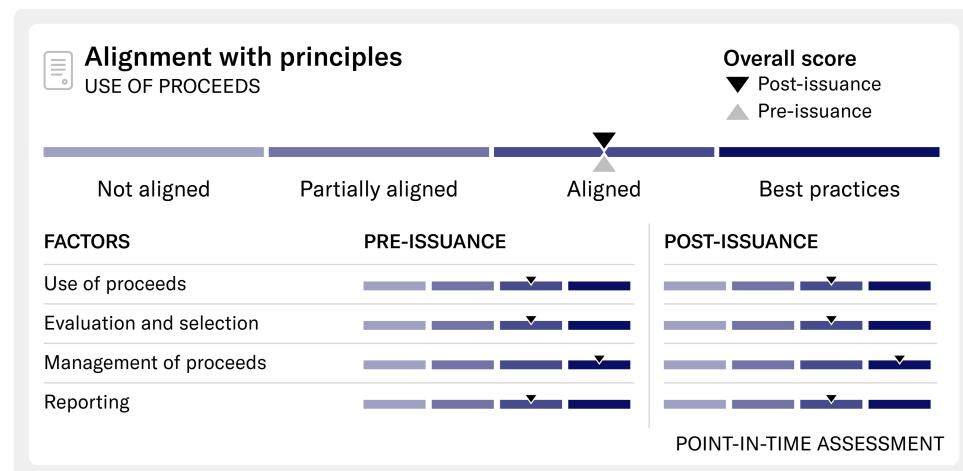
Post-issuance Second Party Opinion – green bond issuances in 2024-25 (as of 31 March 2025) aligned with principles

### Summary

Within the scope of our work, we have assessed Japan Finance Organization for Municipalities' (JFM) green bonds issued in June 2024, December 2024, and January 2025 (collectively, the issuances) under JFM's green bond framework published in March 2024.

We consider that JFM has allocated proceeds from its issuances in alignment with the four core components of the International Capital Market Association's (ICMA) Green Bond Principles (GBP) 2025.

The issuances thus reach the same level of alignment with principles as JFM's 2024 green bond framework, as in the Second Party Opinion (SPO) on the sustainability credentials of the framework that we published on [29 March 2024](#) as detailed in Appendix 1.



## Scope

We have provided a post-issuance SPO on whether the proceeds from JFM's green bond issuances in June 2024, December 2024, and January 2025 were allocated in alignment with the ICMA GBP 2025, as well as in line with commitments made by the issuer in its green bond framework dated March 2024.

Our assessment is based on the draft of JFM Green Bond Impact Report (Domestic Bond) dated December 2025; JFM Green Bond Impact Report (International Bond) dated December 2025; and the green bond framework dated March 2024. Our opinion reflects our point-in-time assessment of the details contained therein, as well as other public and non-public information provided by the issuer.

Our work does not constitute an assurance, verification or audit.

We produced this post-issuance SPO review based on our [Assessment Framework: Second Party Opinions on Sustainable Debt](#), published in October 2025.

## Issuer profile

Japan Finance Organization for Municipalities (JFM) is a financial institution dedicated to providing long-term, low-cost funding to Japanese regional and local governments (RLGs). Established in 2008 based on the Japan Finance Organization for Municipalities Act<sup>1</sup>, it is jointly owned by Japanese RLGs.

JFM has increased its lending to cover the RLGs' tax-supported activities since 2009, in addition to increasing its traditional lending to the RLGs' public enterprise funds that manage non-tax-supported, fee-based operations, such as water, sewerage and mass transportation. As of the end of March 2025, sewerage-related lending accounted for the largest share at 27.4% of the total outstanding loans extended, followed by water supply which accounted for 12.5% (excluding temporary financial countermeasures funding).

## Key highlights

- » Comprehensive and transparent project evaluation and selection process, including robust environmental and social risk mitigation practices
- » Clearly defined and relevant environmental objectives associated with the eligible category
- » Granular reporting, which includes a list of financed projects and detailed impact metrics
- » Short allocation period of no more than 12 months
- » Reporting will only be conducted until full allocation of proceeds

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the issuer/deal page on <https://ratings.moodys.com> for the most updated credit rating action information and rating history.

## Post-issuance Second Party Opinion detailed assessment

<input checked="" type="checkbox"/> Green Bond Principles (GBP)	<input type="checkbox"/> Green Loan Principles (GLP)
<input type="checkbox"/> Social Bond Principles (SBP)	<input type="checkbox"/> Social Loan Principles (SLP)
<input type="checkbox"/> Sustainability-Linked Bond Principles (SLBP)	<input type="checkbox"/> Sustainability Linked Loan Principles (SLLP)

We consider the issuances in June 2024, December 2024, and January 2025 under JFM's green bond framework dated March 2024 to be aligned with the four core components of the ICMA GBP 2025, and with the original pre-issuance commitments made by the issuer. A detailed assessment by factor for alignment with principles is provided below.

### Use of proceeds

Not aligned      Partially aligned      Aligned      Best practices

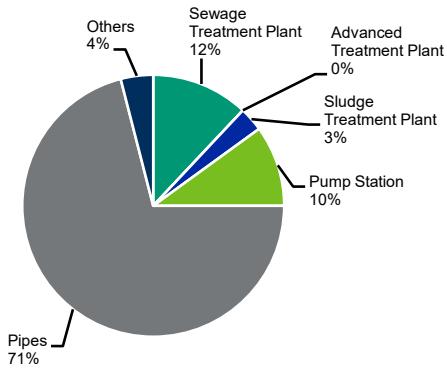
The net proceeds from the issuances in June 2024, December 2024, and January 2025 have been allocated to eligible expenditures in two categories, in line with the eligibility criteria detailed in the issuer's framework. JFM has clearly and comprehensively communicated the nature of the spending, the eligibility and exclusion criteria for the financed projects. Proceeds were allocated in line with the eligibility criteria which is clearly defined in the framework. JFM has extended loans to municipalities to finance eligible sewerage and water supply assets. The assets are expected to comply with relevant Japanese laws<sup>2</sup>, which set the detailed standards and requirements of sewerage and water supply systems in Japan. All projects were financed in Japan, in line with the issuer's pre-issuance commitment.

We consider that all financed projects have clear and relevant environmental and social objectives coherent with the recognized international standards. In line with our pre-issuance assessment, the expected benefits are clearly defined, relevant and measurable. While JFM did not disclose the expected share of refinancing in its framework, it has confirmed in its allocation reporting that there was no refinancing since the allocation only pertained to new loans for both sewerage and water supply projects (excluding refinancing).

As of March 2025, the EUR 500 million net proceeds from the January 2025 international bond issuance have been fully allocated to the sewerage projects, while the JPY 21 billion from the June 2024 domestic issuance and the JPY 20 billion from the December 2024 domestic bond issuance have been fully allocated to the water supply projects. The allocation distribution status as of March 2025 is in line with the issuer's pre-issuance commitment.

Exhibit 1

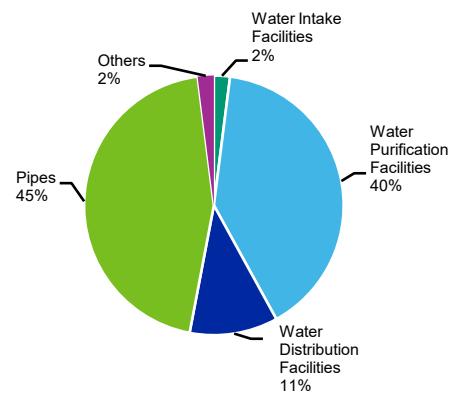
**Allocation of proceeds for JFM's international green bond issuance (sewerage business) in January 2025**  
**Actual allocation by eligible sub-category (facility type)**



Source: JFM Green Bond Impact Report (International Bond) 2025

Exhibit 2

**Allocation of proceeds for JFM's domestic green bond issuances (water supply business) in June 2024 and December 2024**  
**Actual allocation by eligible sub-category (facility type)**



Source: JFM Green Bond Impact Report (Domestic Bond) 2025

- » **Sustainable water and wastewater management (sewerage business):** All the proceeds from the international issuance in January 2025 were allocated to sewerage projects. Under this category, the proceeds were mainly allocated to pipes (71%). The remaining of the proceeds were allocated to sewage treatment plant, pump station, sludge treatment plant, advanced treatment plants, and other relevant plants.
- » **Sustainable water and wastewater management (water supply business):** All the proceeds from the domestic issuance both in June 2024 and December 2024 were allocated to water supply projects. Under this category, the proceeds were mainly allocated to pipes (45%) and water purification facilities (40%). The remaining of the proceeds were allocated to water distribution facilities, water intake facilities, and other relevant facilities.

#### Process for project evaluation and selection

Not aligned      Partially aligned      **Aligned**      Best practices

JFM has established a clear process for determining the eligibility of projects and disclosed the details in its public framework. In addition to following the standard loan screening procedure, which includes the loan department confirming that the borrower has fulfilled the requirements of Japanese laws related to the water supply and sewerage projects, the Sustainability Working Group will be responsible for evaluating and selecting the projects to be financed by any specific green bond. In evaluating and selecting the projects, JFM confirmed that the working group has conducted surveys to understand the impact. The roles and responsibilities for project evaluation and selection are clearly disclosed and include relevant expertise.

JFM has conducted monitoring in line with the pre-issuance commitment and confirmed that the eligible projects remain in compliance with the eligibility criteria. JFM confirmed this will be done until full allocation of the proceeds, which will occur each fiscal year. The process for evaluation, selection and monitoring was documented and traceable. JFM remains committed to ensure that the environmental and social risks are monitored, identified and managed appropriately. The inclusion of the environmental and social risk mitigating process is required by Japanese sewerage-related laws and water supply service act, and JFM confirmed it has only extended loans to projects that fulfill this requirement and will receive consent or approval from the relevant authorities. Furthermore, JFM has confirmed that it has conducted surveys to ensure that the loans are exclusively used for the stated projects, and can request a full repayment if the results are unsatisfactory.

## Management of proceeds

Not aligned      Partially aligned      Aligned      Best practices

JFM has confirmed that all elements of its process for the management and allocation of proceeds remain the same as detailed in its framework. For the issuances under scope, the net proceeds were placed in JFM's general treasury account and have been tracked and managed under a formalized internal process to ensure that the proceeds are used for eligible projects only. The working group has ensured that the balance of the net proceeds match allocations to eligible projects by extending loans that have longer maturities than the green bonds.

The proceeds have been allocated within 12 months in line with the issuer's pre-issuance commitment. JFM confirmed that temporarily unallocated proceeds were kept as cash and cash equivalents, and have not been directed to GHG-intensive or controversial activities. The issuer also confirmed that all eligible projects continued to meet the eligibility criteria, and thus, there has been no case of cancellation or postponement of a project. In case the loans are redeemed, JFM commits to replace such projects.

## Reporting

Not aligned      Partially aligned      Aligned      Best practices

JFM has reported annually on the allocation and impact of the bonds issued under its framework in line with its pre-issuance commitments. Reporting will occur until the full allocation of the funds and in the event of significant developments. The issuer confirmed that no material developments occurred during the reporting period. Both the allocation and impact report are publicly available and can be found on JFM's website.

The allocation reporting exhaustively encompasses the amount of net proceeds, breakdown of projects, environmental reporting indicators that are clear and relevant such as water management capacity, and case studies. The impact reporting includes clear, relevant, and exhaustive impact indicators as specified in JFM's 2024 framework. The methodologies and assumptions used to report on the environmental impacts follow the relevant standards and guidelines stipulated by the Japanese laws.

For its pre-issuance SPO we provided in March 2024, JFM did not achieve the two best practice factors related to verification at the time of assessment. By receiving this post-issuance review, the two best practice factors are now considered to be satisfied, as reflected in Appendix 1.

## Exhibit 3

## Review of impact indicators and reported actual impacts

## By eligible category

Eligible Category	Subcategory	Impact metrics chosen	Reported impact (as of March 2025)	Comment
Sustainable water and wastewater management (Sewerage)	Sewage treatment plant	<ul style="list-style-type: none"> <li>Project description</li> <li>Total project cost</li> <li>Population of the covered area</li> <li>Water management capacity and water quality impact (where relevant)</li> </ul>	Overseas issuance (Jan 2025): <ul style="list-style-type: none"> <li>Total population of treated area: 16,083,013 individuals</li> <li>Annual amount of electricity saved: 5,969,822kWh</li> </ul>	Impact reporting contains all expected elements, consistent with reporting in previous years. Project description and project cost details were included in the allocation reporting.
	Advanced treatment plant	<ul style="list-style-type: none"> <li>Newly constructed pipe length and/or total pipe length (where relevant)</li> <li>Other positive environmental impacts</li> </ul>	<ul style="list-style-type: none"> <li>Annual volume of treated water: 2,822,150,791m<sup>3</sup></li> <li>Newly constructed or renewed pipes: 330,939m</li> </ul>	
	Sludge treatment plant			
	Pump station			
	Pipes		<ul style="list-style-type: none"> <li>Annual increase in treated water volume due to newly constructed pipes: 60,463,489m<sup>3</sup></li> </ul>	
	Others			
Sustainable water and wastewater management (Water supply)	Water intake facilities	<ul style="list-style-type: none"> <li>Project descriptions</li> <li>Total project costs</li> <li>Population of the covered area</li> <li>Water supply/purification/intake volumes (m<sup>3</sup>)</li> </ul>	Domestic issuances (Jun 2024, Dec 2024): <ul style="list-style-type: none"> <li>Total population served: 18,989,235 individuals</li> <li>Annual water supply volume: 1,834,876,732m<sup>3</sup></li> <li>Newly constructed or renewed pipes: 269,991m</li> </ul>	Impact reporting contains all expected elements. Project description and project cost details were included in the allocation reporting.
	Water purification facilities	<ul style="list-style-type: none"> <li>Water Efficiency Rate in certain water treatment area</li> <li>Newly constructed pipe length and/or total pipe length (where relevant)</li> <li>Other positive environmental impacts</li> </ul>		
	Water distribution facilities			
	Pipes			
	Others			

Source: JFM Green Bond Impact Report 2025 (Domestic Bond), JFM Green Bond Impact Report 2025 (International Bond), and Moody's Ratings

JFM has also provided case studies related to its financed green projects.

JFM financed JPY 258.50 million of the JPY 555.45 million total project cost for a public sewerage sludge composting project in Tsuruoka City, which targets to increase the amount of composted sludge and compost production from 16 tons per year to 47 tons per year and reduce CO<sub>2</sub> emissions during sludge transportation by 80% (compared to 2024 base year). JFM also financed JPY 379 million of the JPY 944 million total project cost for a purification center development and operation project in Hayama Town, which is expected to achieve an annual CO<sub>2</sub> reduction of 264,987 kg. Both projects are aligned with JFM's framework under the sustainable water and wastewater management (sewerage business) category.

Under the sustainable water and wastewater management (water supply business) category, JFM financed the Hinokuchi water purification plant construction project in Hirosaki City and Horowa water purification plant reconstruction project in Tome City. These projects contributed to improving local water purification systems through the renewal of aging facilities, downsizing purification capacity to match regional levels, and enhancing purification process efficiency. Both projects are aligned with JFM's pre-issuance commitment.

## Appendix 1 - Alignment with principles scorecard for JFM's 2024 green bond framework and 2024-25 issuances (as of 31 March 2025)

Alignment with principles			2024 Framework			2024-25 Issuances (as of 31 March 2025)		
Factor	Sub-factor	Component	Component score	Sub-factor score	Factor score	Component score	Sub-factor score	Factor score
Use of proceeds	Clarity of the eligible categories	Nature of expenditure	A			A		
		Definition of content, eligibility and exclusion criteria for nearly all categories	A		Best practices	A		
		Location	A			A		Best practices
		BP: Definition of content, eligibility and exclusion criteria for all categories	Yes			Yes		
	Clarity of the objectives	Relevance of objectives to project categories for nearly all categories	A		Best practices	A		
		Coherence of project category objectives with standards for nearly all categories	A		Best practices	A		Best practices
		BP: Objectives are defined, relevant and coherent for all categories	Yes			Yes		Aligned
		Identification and relevance of expected benefits for nearly all categories	A			A		
	Clarity of expected benefits	Measurability of expected benefits for nearly all categories	A			A		
		BP: Relevant benefits are identified for all categories	Yes			Yes		
		BP: Benefits are measurable for all categories	Yes		Aligned	Yes		Aligned
		BP: Disclosure of refinancing prior to issuance and in post-allocation reporting	No			No		
		BP: Commitment to communicate refinancing look-back period prior to issuance	Yes			Yes		
		Clarity of the process	A			A		
Process for project evaluation and selection	Transparency and clarity of the process for defining and monitoring eligible projects	Disclosure of the process	A		Aligned	A		
		Transparency of the environmental and social risk mitigation process	A		Aligned	A		Aligned
		BP: Monitoring of continued project compliance	No			No		Aligned
		BP: Monitoring of continued project compliance	No			No		Aligned
Management of proceeds	Allocation and tracking of proceeds	Tracking of proceeds	A			A		
		Periodic adjustment of proceeds to match allocations	A			A		
		Disclosure of the intended types of temporary placements of unallocated proceeds	A	Best practices	Best practices	A	Best practices	Best practices
		BP: Disclosure of the proceeds management process	Yes			Yes		
		BP: Allocation period is 24 months or less	Yes			Yes		
		BP: Allocation period is 24 months or less	Yes			Yes		
Reporting	Reporting transparency	Reporting frequency	A			A		
		Reporting duration	A			A		
		Report disclosure	A			A		
		Reporting exhaustivity	A			A		
		BP: Allocation reporting at least until full allocation of proceeds, and impact reporting until full bond maturity or loan payback	No	Aligned	Aligned	No	Aligned	Aligned
		BP: Clarity and relevance of the indicators on the sustainability benefits	Yes			Yes		
		BP: Disclosure of reporting methodology and calculation assumptions	Yes			Yes		
		BP: Independent external auditor, or other third party, to verify the tracking and allocation of funds	No			Yes		
		BP: Independent impact assessment on environmental and social benefits	No			Yes		
		BP: Independent impact assessment on environmental and social benefits	No			Yes		
			Framework alignment:	Aligned		Issuances alignment:	Aligned	

Legend: BP - Best practice, A - Aligned, PA - Partially aligned, NA - Not aligned

## Endnotes

### 1 The Japan Finance Organization for Municipalities Act

2 The laws are the Sewage Act, the Water Pollution Prevention Act, the Purification Tank Act, and the Water Supply Service Act.

Moody's assigns SPOs in alignment with the main tenets of the ICMA Guidelines for Green, Social, Sustainability and Sustainability-Linked Bonds External Reviews and the LSTA/LMA/APLMA Guidance for Green, Social and Sustainability-Linked Loans External Reviews, as applicable; Moody's practices may however diverge in some respects from the practices recommended in those documents. Moody's approach to assigning SPOs is described in its Assessment Framework, and is subject to the ethical and professional principles set forth in the Moody's Investors Service Code of Professional Conduct.

Additional terms with respect to Second Party Opinions (as defined in Moody's Investors Service Rating Symbols and Definitions): Please note that a Second Party Opinion ("SPO") is not a "credit rating". The issuance of SPOs is not a regulated activity in many jurisdictions, including Singapore. JAPAN: In Japan, development and provision of SPOs fall under the category of "Ancillary Businesses", not "Credit Rating Business", and are not subject to the regulations applicable to "Credit Rating Business" under the Financial Instruments and Exchange Act of Japan and its relevant regulation. PRC: Any SPO: (1) does not constitute a PRC Green Bond Assessment as defined under any relevant PRC laws or regulations; (2) cannot be included in any registration statement, offering circular, prospectus or any other documents submitted to the PRC regulatory authorities or otherwise used to satisfy any PRC regulatory disclosure requirement; and (3) cannot be used within the PRC for any regulatory purpose or for any other purpose which is not permitted under relevant PRC laws or regulations. For the purposes of this disclaimer, "PRC" refers to the mainland of the People's Republic of China, excluding Hong Kong, Macau and Taiwan.

© 2025 Moody's Corporation, Moody's Investors Service, Inc., Moody's Analytics, Inc. and/or their licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

**CREDIT RATINGS ISSUED BY MOODY'S CREDIT RATINGS AFFILIATES ARE THEIR CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND MATERIALS, PRODUCTS, SERVICES AND INFORMATION PUBLISHED OR OTHERWISE MADE AVAILABLE BY MOODY'S (COLLECTIVELY, "MATERIALS") MAY INCLUDE SUCH CURRENT OPINIONS. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT OR IMPAIRMENT.**  
**SEE APPLICABLE MOODY'S RATING SYMBOLS AND DEFINITIONS PUBLICATION FOR INFORMATION ON THE TYPES OF CONTRACTUAL FINANCIAL OBLIGATIONS ADDRESSED BY MOODY'S CREDIT RATINGS. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS, NON-CREDIT ASSESSMENTS ("ASSESSMENTS"), AND OTHER OPINIONS INCLUDED IN MOODY'S MATERIALS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. MOODY'S MATERIALS MAY ALSO INCLUDE QUANTITATIVE MODEL-BASED ESTIMATES OF CREDIT RISK AND RELATED OPINIONS OR COMMENTARY PUBLISHED BY MOODY'S ANALYTICS, INC. AND/OR ITS AFFILIATES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS DO NOT COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR.**  
**MOODY'S ISSUES ITS CREDIT RATINGS, ASSESSMENTS AND OTHER OPINIONS AND PUBLISHES OR OTHERWISE MAKES AVAILABLE ITS MATERIALS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL, WITH DUE CARE, MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.**

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS, AND MATERIALS ARE NOT INTENDED FOR USE BY RETAIL INVESTORS AND IT WOULD BE RECKLESS AND INAPPROPRIATE FOR RETAIL INVESTORS TO USE MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS OR MATERIALS WHEN MAKING AN INVESTMENT DECISION. IF IN DOUBT YOU SHOULD CONTACT YOUR FINANCIAL OR OTHER PROFESSIONAL ADVISER.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT. FOR CLARITY, NO INFORMATION CONTAINED HEREIN MAY BE USED TO DEVELOP, IMPROVE, TRAIN OR RETRAIN ANY SOFTWARE PROGRAM OR DATABASE, INCLUDING, BUT NOT LIMITED TO, FOR ANY ARTIFICIAL INTELLIGENCE, MACHINE LEARNING OR NATURAL LANGUAGE PROCESSING SOFTWARE, ALGORITHM, METHODOLOGY AND/OR MODEL.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS ARE NOT INTENDED FOR USE BY ANY PERSON AS A BENCHMARK AS THAT TERM IS DEFINED FOR REGULATORY PURPOSES AND MUST NOT BE USED IN ANY WAY THAT COULD RESULT IN THEM BEING CONSIDERED A BENCHMARK.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the credit rating process or in preparing its Materials.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability to any person or entity for any indirect, special, consequential, or incidental losses or damages whatsoever arising from or in connection with the information contained herein or the use of or inability to use any such information, even if MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers is advised in advance of the possibility of such losses or damages, including but not limited to: (a) any loss of present or prospective profits or (b) any loss or damage arising where the relevant financial instrument is not the subject of a particular credit rating assigned by MOODY'S.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability for any direct or compensatory losses or damages caused to any person or entity, including but not limited to by any negligence (but excluding fraud, willful misconduct or any other type of liability that, for the avoidance of doubt, by law cannot be excluded) on the part of, or any contingency within or beyond the control of, MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers, arising from or in connection with the information contained herein or the use of or inability to use any such information.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY CREDIT RATING, ASSESSMENT, OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

Moody's Investors Service, Inc., a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by Moody's Investors Service, Inc. have, prior to assignment of any credit rating, agreed to pay Moody's Investors Service, Inc. for credit ratings opinions and services rendered by it. MCO and all MCO entities that issue ratings under the "Moody's Ratings" brand name ("Moody's Ratings"), also maintain policies and procedures to address the independence of Moody's Ratings' credit ratings and credit rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold credit ratings from Moody's Investors Service, Inc. and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at [ir.moody's.com](http://ir.moody's.com) under the heading "Investor Relations — Corporate Governance — Charter and Governance Documents - Director and Shareholder Affiliation Policy."

Moody's SF Japan K.K., Moody's Local AR Agente de Calificación de Riesgo S.A., Moody's Local BR Agência de Classificação de Risco LTDA, Moody's Local MX S.A. de C.V, I.C.V., Moody's Local PE Clasificadora de Riesgo S.A., and Moody's Local PA Clasificadora de Riesgo S.A. (collectively, the "Moody's Non-NRSRO CRAs") are all indirectly wholly-owned credit rating agency subsidiaries of MCO. None of the Moody's Non-NRSRO CRAs is a Nationally Recognized Statistical Rating Organization.

Additional terms for Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657 AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors.

Additional terms for India only: Moody's credit ratings, Assessments, other opinions and Materials are not intended to be and shall not be relied upon or used by any users located in India in relation to securities listed or proposed to be listed on Indian stock exchanges.

Additional terms with respect to Second Party Opinions and Net Zero Assessments (as defined in Moody's Ratings Rating Symbols and Definitions): Please note that neither a Second Party Opinion ("SPO") nor a Net Zero Assessment ("NZA") is a "credit rating". The issuance of SPOs and NZAs is not a regulated activity in many jurisdictions, including Singapore.

JAPAN: In Japan, development and provision of SPOs and NZAs fall under the category of "Ancillary Businesses", not "Credit Rating Business", and are not subject to the regulations applicable to "Credit Rating Business" under the Financial Instruments and Exchange Act of Japan and its relevant regulation. PRC: Any SPO: (1) does not constitute a PRC Green Bond Assessment as defined under any relevant PRC laws or regulations; (2) cannot be included in any registration statement, offering circular, prospectus or any other documents submitted to the PRC regulatory authorities or otherwise used to satisfy any PRC regulatory disclosure requirement; and (3) cannot be used within the PRC for any regulatory purpose or for any other purpose which is not permitted under relevant PRC laws or regulations. For the purposes of this disclaimer, "PRC" refers to the mainland of the People's Republic of China, excluding Hong Kong, Macau and Taiwan.

REPORT NUMBER 1466419