

CREDIT OPINION

11 August 2025

Update



RATINGS

IFFED

	Rating	Outlook
Long-term Issuer	Aaa	STA
Short-term Issuer	--	--

Contacts

Mickaël Gondrand +44.20.7772.1085
AVP-Analyst
mickael.gondrand@moodys.com

Andres Carrillo +1.212.553.2768
Ratings Associate
andres.carrillo@moodys.com,

Matt Robinson +44.20.7772.5635
Associate Managing Director
matt.robinson@moodys.com

Marie Diron +44.20.7772.1968
MD-Sovereign Risk
marie.diron@moodys.com

CLIENT SERVICES

Americas	1-212-553-1653
Asia Pacific	852-3551-3077
Japan	81-3-5408-4100
EMEA	44-20-7772-5454

International Finance Facility for Education – Aaa stable

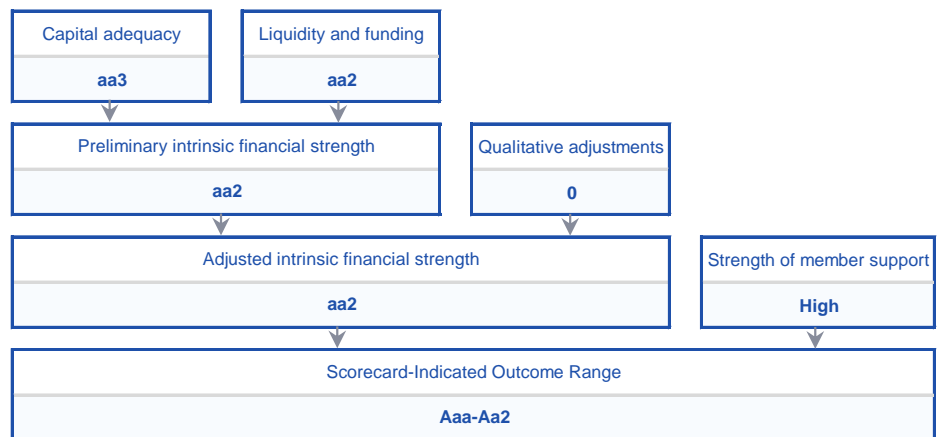
Regular update

Summary

The credit profile of [International Finance Facility for Education](#) (IFFEd, Aaa stable) reflects its robust capital and liquidity buffers, which will back IFFEd's guarantees for the portfolio of loans and guarantees to sovereigns provided by other multilateral development banks (MDBs). IFFEd's capital is in the form of paid-in equity but also contingent capital contributions provided by highly rated sovereign contributors. Given the initially limited number of contributors, IFFEd's credit quality is linked to their ability and willingness to honour their legal agreements with the entity.

Exhibit 1

IFFEd's credit profile is determined by three factors



Source: Moody's Ratings

Credit strengths

- » Capital adequacy limits ensure strong equity coverage of guarantees
- » Liquidity buffer will be robust and can be bolstered through calls on contingent capital
- » High credit quality of contributors

Credit challenges

- » High reliance on contributors' ability and willingness to comply with contingent capital agreements to fulfill IFFEd's guarantee commitments in the case of extraordinarily high claim amounts

» In the event of guarantee calls, a reduction in nonperforming assets will depend on recoveries that may be received with a lag

Rating outlook

The stable rating outlook reflects our expectation that IFFEd will maintain its strong capital buffers to ensure strong coverage of its guarantee commitments, as it extends guarantees to the participating MDBs. We also expect, in an unlikely scenario where the facility would need to call on the contingent capital from its contributors, these governments to provide the required resources on a timely basis, as established in the legal agreements.

Factors that could lead to a downgrade

Downward rating pressure would emerge if IFFEd's capital and liquidity metrics seemed increasingly likely to deteriorate beyond the established policy limits, thus making it more difficult for the entity to fulfill its guarantee commitments. Additional negative pressure would develop if the contributing governments delayed the payment of their agreed contingent capital contributions beyond the periods established in their legal agreements with IFFEd.

Profile

International Finance Facility for Education (IFFEd) is an independent nonprofit foundation established under the laws and jurisdiction of [Switzerland](#) (Aaa stable). IFFEd seeks to increase the quality and quantity of MDBs' support to the education systems of lower-middle-income countries (LMICs). It aims to achieve this mainly by providing partial first-loss portfolio credit guarantees to participating MDBs, in turn allowing these MDBs to provide more loans specifically for education projects in LMICs. In addition, IFFEd can provide grants to MDBs for reducing the financing cost of eligible education projects.

Partnerships have been established with the [African Development Bank](#) (AfDB, Aaa stable), the [Asian Development Bank](#) (ADB, Aaa stable), the [International Bank for Reconstruction and Development](#) (World Bank, Aaa stable) and the [Inter-American Development Bank](#) (IADB, Aaa stable), with potentially additional MDBs within the next few years. IFFEd's guarantees/grants are backed/funded by contributions from the governments of the [United Kingdom](#) (Aa3 stable), [Sweden](#) (Aaa stable), [Canada](#) (Aaa stable) and [Korea](#) (Aa2 stable). IFFEd expects a larger group of contributors over the next few years.

IFFEd's guarantees will offer credit protection to the recipient MDBs, providing a potential benefit to our assessment of their respective development asset credit quality (DACQ). The guarantees were designed to achieve credit substitution and conform with the relevant criteria of the Basel Committee on Banking Supervision. IFFEd's obligation to pay claim amounts under the guarantee agreements is unconditional and irrevocable.

Detailed credit considerations

Our determination of a supranational's rating is based on three rating factors: capital adequacy, liquidity and funding, and strength of member support. For MDBs, the first two factors combine to form the assessment of intrinsic financial strength, as illustrated on the cover page exhibit. Additional factors can influence the intrinsic financial strength, such as risks stemming from the operating environment or the quality of management. The strength of member support is then incorporated to yield a rating range. For more information, please see our methodology for Multilateral Development Banks and Other Supranational Entities.

Factor 1: Capital adequacy score: aa3

We assess IFFEd's capital adequacy at "aa3", reflecting a capital position that will remain very strong based on the limits imposed by its foundational documents and capital adequacy policies. These measures will ensure strong coverage of its guarantees, as well as moderate portfolio credit quality and strong asset performance that will benefit from the recipient MDBs' preferred creditor status (PCS).

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.moody's.com> for the most updated credit rating action information and rating history.

IFFEd's guarantees to MDBs will protect a broader portfolio

IFFEd's development-related assets (DRAs) are guarantees provided to MDBs to support their portfolios of loans and guarantees to sovereigns. Unlike traditional MDB guarantees that back loans directly, IFFEd's guarantees support the lender itself, enabling each MDB to apply a multiplier and lend significantly more than the nominal guarantee amount. For example, with a 4x multiplier, a \$25 million IFFEd guarantee could support \$100 million in new lending. These guarantees act as partial first-loss protection on a defined portfolio of sovereign loans and are structured to preserve MDB capital, allowing for greater lending volumes. Such expanded lending capacities are to be used by the partnering MDBs to provide loans to sovereigns for eligible education projects in lower-middle-income countries.

Importantly, IFFEd's guarantees will provide partial first-loss protection to a broader portfolio (known as the covered portfolio) for the recipient MDB, consisting of all sovereign loans and guarantees that are current (that is, not in nonaccrual status) as of the effective date of the agreement between the MDB and IFFEd. Should a new nonaccrual event occur affecting the covered portfolio, IFFEd would cover principal and interest not paid on the due date, with claim payments due within 180 days of the failure-to-pay event. The claim amount to be paid by IFFEd will be determined by the delinquent obligation amount multiplied by a claim ratio, which equals the aggregate of the education loan amounts divided by the covered portfolio amount.

IFFEd's equity will include paid-in and contingent capital

In addition to the paid-in capital provided by its contributors (about \$40 million from Canada and the UK as of December 2024), IFFEd's capital structure benefits from contingent capital agreements signed with contributors, i.e. a contractual agreement to provide capital upon a trigger event. At this stage, IFFEd has entered into a contingent contribution agreement with the UK's Foreign, Commonwealth and Development Office for \$102 million and a guarantee agreement from the Swedish International Development Cooperation Agency (Sida) for \$200 million.

Per the contingent capital agreement and Sida's guarantee, because of the legal framework, this capital is not currently on IFFEd's balance sheet. However, it would become available in a very short time frame (about 60 days but with agreement to shorten to 30 days as legal documents are adjusted to accommodate the on-boarding of World Bank participation). IFFEd must call on these additional resources should the cash buffer drop below 10% of total outstanding guarantees (known as the top-up trigger event) so as to bring the level of cash back up to 15% of the total outstanding guarantees. Because of the short time frame, we consider these contingent resources more readily available than those related to hybrid capital or callable capital, leading us to include IFFEd's contingent capital as useable equity for our leverage calculation.

Capital position will be strong in accordance with IFFEd's foundational documents

Currently, IFFEd has no guarantees outstanding. The facility expects to begin providing guarantees in 2026, and these would ramp up over the coming years. However, as mandated by its foundational documents, the total amount of guarantees will be capped by the sum of its paid-in capital, retained earnings and contingent capital. As a result, as the number of guarantees increases, we expect our leverage ratio (DRA and treasury assets rated A3 or lower relative to its equity) to always remain below 100%, contributing to a capital score of "aaa". Importantly, for IFFEd to grow its guarantees beyond the initial amount of equity, it would need to get new paid-in and contingent capital from the current contributors or new ones.

Asset quality will benefit from high geographical diversification and recipient MDBs' PCS

IFFEd's guarantees will cover the loan portfolios of the four currently participating MDBs — ADB, AfDB, IADB and IBRD — and eventually those of other highly rated MDBs. Because of the characteristics of these MDBs' portfolios, we expect the initial point of IFFEd's DACQ to be a weighted average borrower rating within the B category. Because of these MDBs' established track record of repayment from their sovereign borrowers, as denoted by their PCS, IFFEd will also benefit from this PCS. Meanwhile, we expect IFFEd's portfolio of guarantees to be well-diversified because they cover loans and guarantees to sovereigns from all around the world. Overall, these elements contribute to IFFEd's DACQ score of "baa".

Asset performance will likely be strong

A call on IFFEd's guarantees would be triggered if any of the recipient MDBs were to experience a nonaccrual event within their covered portfolios. As mentioned above, IFFEd's claim payments will be determined by the claim ratio, which would limit the size of the actual payouts. As the recipient MDBs have historically benefited from the PCS assigned by their sovereign borrowers, which in turn also means that nonaccrual events by sovereign borrowers have historically been very low, this would likely maintain IFFEd's own called guarantees at a low level. IFFEd will also benefit from any recoveries by the MDBs, allowing it to gradually recover the claim payouts

over time. Although IFFEd starts with a pristine asset performance, reflected in an indicative score of “aaa”, we assign a lower score of “aa3” to incorporate our expectation that should there be a call on IFFEd’s guarantees as it ramps up the size of its portfolio, there may be a lag until recoveries are made and IFFEd receives guarantee repayments from MDBs, in turn affecting the decline in the nonperforming asset ratio.

Factor 2: Liquidity and funding score: aa2

We assess IFFEd’s liquidity and funding at “aa2”, reflecting our expectation that IFFEd will maintain a strong buffer to cover its net outflows, including potential guarantee calls, even in a stress scenario. This is further bolstered by the nature of its contingent capital agreements, which would provide additional liquid resources should the coverage of its cash buffer decline below 10% of its total guarantees. We score the quality of funding at “baa”, in line with other issuers that do not require debt funding due to their business models, but whose shareholder structure gives some level of confidence that they could issue in markets with relative ease if needed. However, IFFEd is prohibited from borrowing, as described below.

Our “aa2” factor score diverges from the indicative “a2” score to reflect our expectation that IFFEd will always maintain a strong liquidity buffer that will allow it to fulfill its guarantee obligations.

Liquidity coverage will be strong because of low levels of projected outlays

IFFEd will maintain a strong liquidity buffer to ensure adequate coverage of potential payments related to its guarantee obligations. According to its foundational documents, IFFEd is required to begin operations with a cash coverage of 15% of its total guarantees. Additionally, in the event that IFFEd experiences a large number of guarantee calls, its liquidity buffer would benefit from the conditions for its contingent capital, under which if the cash buffer were to drop below 10% of total guarantees, then the contributors would be legally obligated to provide additional cash resources pro rata so that the coverage returns to 15%. In the absence of guarantee calls, its other outlays would be related to administrative expenses and would not include any disbursements (as it will not provide direct loans) or debt repayments (as it will not borrow). As a result, we score IFFEd very highly in terms of availability of liquid resources in stress scenarios. Under these conditions, we expect IFFEd to maintain a high degree of liquidity — consistent with a “aaa” score — to fulfill any potential call on its guarantees.

Lack of borrowing informs quality of funding assessment

Our assessment of the quality of funding is typically based on considerations such as the track record of bond issuance, the cost of funding relative to peers, the availability of credit lines and the diversity of funding sources and the investor base. Per its foundational documents, IFFEd will not borrow from the markets or access any other source of financing. We score other MDBs with some similar characteristics who do not borrow from the capital markets at “baa” for the quality of funding, including [GuarantCo Limited](#) (A1 stable) and [The Currency Exchange Fund NV \(TCX\)](#) (Aa3 stable).

Qualitative adjustments to intrinsic financial strength

Operating environment

We do not make any adjustments based on IFFEd’s operating environment. Based on our expectation that its guarantee portfolio will cover loans and guarantees to sovereigns around the world, we consider such risks low.

Quality of management

IFFEd’s capital adequacy and liquidity policies are aligned with those observed for highly rated MDBs. As the entity begins its operations, it will likely comply with these policies, thus supporting its robust intrinsic financial strength metrics. In doing so, over time, IFFEd’s management would build a track record of credibly managing potential risks associated with its business model. The World Bank will continue to act as the asset manager for IFFEd’s paid-in capital through its Reserve Advisory & Management Partnership (RAMP), under a conservative investment mandate.

Factor 3: Strength of member support score: High

We assess strength of member support as “High,” above the indicative “Medium” score, to account for the very strong ability of IFFEd’s contributors to support the entity and their high propensity to do so, both because of the legal nature of their agreements to promptly provide it with additional resources if needed — despite the absence of callable capital — and the contributors’ commitment to IFFEd because of its mission and innovative financial approach to support MDBs’ education loans.

Contributors have a very high ability to support IFFEd

Based on the credit quality of its initial contributors, IFFEd's initial weighted average shareholder rating is Aa1, among the highest of rated MDBs. We expect any potential additional contributors to be highly rated as well, ensuring the ability of members to provide support to IFFEd remains high.

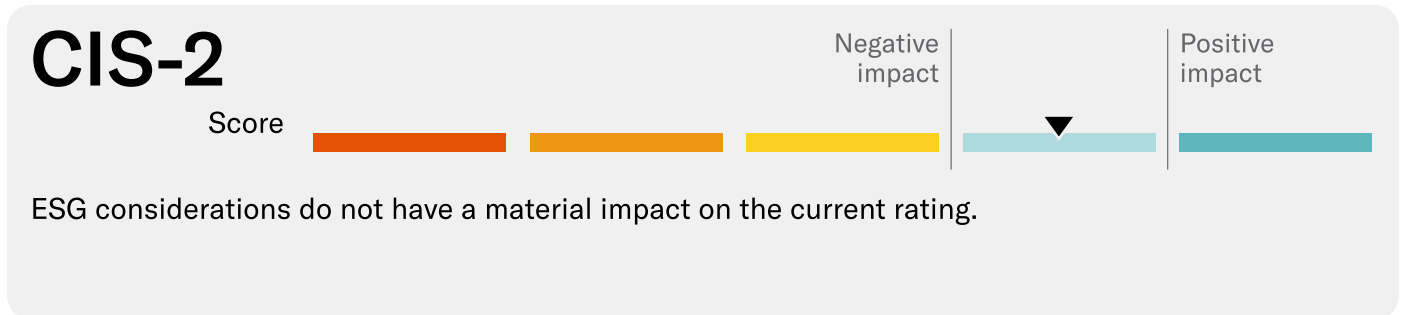
Robust willingness to support

Because we account for the facility's contingent capital as useable equity, we do not give IFFEd any additional credit for contractual support. However, as mentioned above, the legal agreements that govern the contingent capital provided by the UK and Sida's guarantee agreement demonstrate these governments' high propensity to support the entity. Another illustration of this support is the governments' choice to allocate resources to IFFEd to bolster its mandate. This is exemplified by the fact that Sida's \$200 million guarantee to IFFEd is one of the Swedish institution's largest to date. Overall, this informs our "High" score for non-contractual support, in line with that of the [International Finance Facility for Immunisation](#) (IFFIm, Aa1 stable).

ESG considerations

International Finance Facility for Education's ESG credit impact score is CIS-2

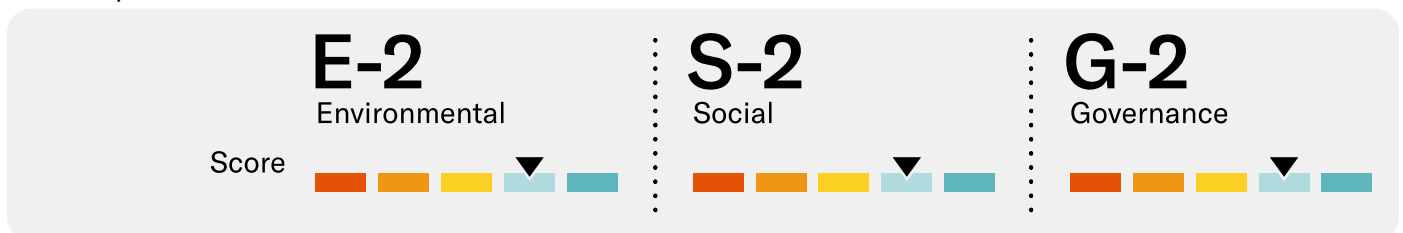
Exhibit 2
ESG credit impact score



Source: Moody's Ratings

IFFEd's **CIS-2** reflects the limited exposure of its credit profile to environmental and social risks, and our expectation that its governance will be robust and aligned with the high standards that characterize multilateral development banks.

Exhibit 3
ESG issuer profile scores



Source: Moody's Ratings

Environmental

The **E-2** score points to an exposure to environmental risks that is limited because of IFFEd's highly diversified guarantee portfolio, as its guarantees will cover other multilateral development banks' loans to sovereigns in various regions across the world.

Social

IFFEd's **S-2** score reflects limited exposure to social risks. IFFEd's mission to bolster the financing of education-related projects by other multilateral development banks leads to a positive exposure to demographic and societal trends. The entity's innovative way to support

this additional financing for education-related loans has led to strong support provided by its original contributing governments and will also help secure additional contributions in the coming years, which in turn will help IFFEd expand its mandate.

Governance

The governance issuer profile score of **G-2** is supported by a prudent risk management framework that will allow IFFEd to ensure that it will be able to fulfill its guarantee commitments. Over time, we expect that IFFEd will build a track record of credible risk management that will also support its developmental mission and strong financial standing.

ESG Issuer Profile Scores and Credit Impact Scores for the rated entity/transaction are available on Moodys.com. In order to view the latest scores, please click [here](#) to go to the landing page for the entity/transaction on MDC and view the ESG Scores section.

All of these considerations are further discussed in the "Detailed credit considerations" section above. Our approach to ESG is explained in our cross-sector methodology [General Principles for Assessing ESG Risks](#). Additional information about our rating approach is provided in our [Supranational Rating Methodology](#).

Recent developments

IFFEd is likely to begin operations in 2026, with four global MDB partnerships now confirmed

IFFEd remains in the early stage of operations and no guarantees are currently outstanding, although issuances are likely to begin in 2026 and ramp up over the coming years. The Board of IFFEd has approved the World Bank and the IADB as participating MDBs and recipients of its guarantees, adding to initial partnerships with the ADB and the AfDB. The partnerships with the World Bank and ADB are likely to account for the most important share of the future guarantees portfolio, given their significant role in funding global education initiatives. As the number of guarantees increases, we expect IFFEd's leverage ratio under our definition to remain below 100%, contributing to a strong capital position. This compares to a median leverage ratio of 226% in 2024 for Aaa-rated MDBs.

Efforts to attract further sovereign and philanthropic contributors are ongoing

In addition to the paid-in capital provided by its contributors (about \$40 million from Canada and the UK as of December 2024), IFFEd's capital structure benefits from contingent capital agreements signed with contributors. Currently, IFFEd has a contingent contribution agreement with the UK's Foreign, Commonwealth and Development Office for \$102 million and a guarantee agreement from the Swedish International Development Cooperation Agency (Sida) for \$200 million.

Exhibit 4
Capital contributions are provided by highly rated sovereign contributors
 Paid-in and contingent capital contribution by sovereign rating, percentage of total



Sources: IFFEd and Moody's Ratings

Efforts to attract additional contributors are ongoing. IFFEd has this year agreed an upfront cash contribution of KRW3 billion (around \$2.2 million) from Korea. The facility has also received a small amount in seed funding from the United Kingdom, Sweden, and philanthropic foundations such as the Jacobs, Atlassian and Porticus Foundations. Total grants extended to support the administration of IFFEd amounted to \$1.8 million as of year-end 2024 and further commitments are likely, aimed at supporting specific projects or education programmes.

The World Bank has been selected as asset manager to manage IFFEd's \$40 million paid-in capital, under a conservative investment mandate.

Rating methodology and scorecard factors: IFFEd - Aaa stable

Factor / Subfactor	Metric	Initial score	Adjusted score	Assigned score
Factor 1: Capital adequacy (50%)			aa3	aa3
Capital position (20%)			aaa	
	Leverage ratio	aaa		
	Trend	0		
	Impact of profit and loss on leverage	0		
Development asset credit quality (10%)			baa	
	DACQ assessment	baa		
	Trend	0		
Asset performance (20%)			aa3	
	Non-performing assets	aaa		
	Trend	-3		
	Excessive development asset growth	0		
Factor 2: Liquidity and funding (50%)			a2	aa2
Liquid resources (20%)			aaa	
	Availability of liquid resources	aaa		
	Trend in coverage outflow	0		
	Access to extraordinary liquidity	0		
Quality of funding (30%)			baa	
Preliminary intrinsic financial strength				aa2
Other adjustments				0
Operating environment		0		
Quality of management		0		
Adjusted intrinsic financial strength				aa2
Factor 3: Strength of member support (+3,+2,+1,0)			Medium	High
Ability to support (50%)			Aa1	
	Weighted average shareholder rating	Aa1		
Willingness to support (50%)				
	Contractual support (25%)	ca	ca	
	Strong enforcement mechanism	0		
	Payment enhancements	0		
	Non-contractual support (25%)		High	
Scorecard-Indicated Outcome Range				Aaa-Aa2
Rating Assigned				Aaa

Note: Our ratings are forward-looking and reflect our expectations for future financial and operating performance. However, historical results are helpful in understanding patterns and trends of an issuer's performance as well as for peer comparisons. Additional considerations that may not be captured when historical metrics are used in the scorecard may be reflected in differences between the adjusted and assigned factor scores. Furthermore, in our ratings we often incorporate directional views of risks and mitigants in a qualitative way. For more information please see our Multilateral Development Banks and Other Supranational Entities rating methodology.

Related websites and information sources

- » [Moody's Supranational web page](#)
- » [Moody's Sovereign and supranational rating list](#)
- » [International Finance Facility for Education web page](#)

MOODY'S has provided links or references to third party World Wide Websites or URLs ("Links or References") solely for your convenience in locating related information and services. The websites reached through these Links or References have not necessarily been reviewed by MOODY'S, and are maintained by a third party over which MOODY'S exercises no control. Accordingly, MOODY'S expressly disclaims any responsibility or liability for the content, the accuracy of the information, and/or quality of products or services provided by or advertised on any third party web site accessed via a Link or Reference. Moreover, a Link or Reference does not imply an endorsement of any third party, any website, or the products or services provided by any third party.

© 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.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 657AFSL 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 1455062

CLIENT SERVICES

Americas	1-212-553-1653
Asia Pacific	852-3551-3077
Japan	81-3-5408-4100
EMEA	44-20-7772-5454