

**CREDIT OPINION**

15 August 2024



**Contacts**

Julie E Meyer +1.214.979.6855  
AVP-Analyst  
julie.meyer@moodys.com

Kayla Attis +1.212.553.2876  
Sr Ratings Associate  
kayla.attis@moodys.com

Scott Solomon +1.212.553.4358  
VP-Sr Credit Officer  
scott.solomon@moodys.com

» Contacts continued on last page

**CLIENT SERVICES**

Americas 1-212-553-1653

Asia Pacific 852-3551-3077

Japan 81-3-5408-4100

EMEA 44-20-7772-5454

# Brownsville Public Utilities Board, TX

## Update to credit analysis

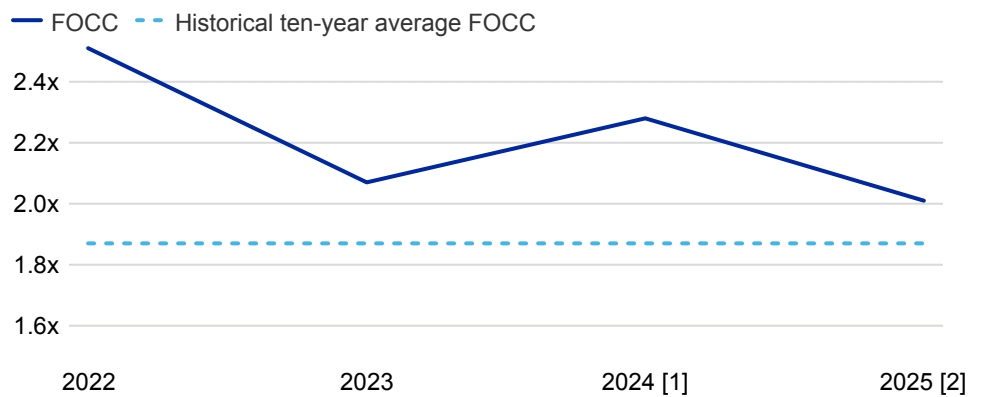
### Summary

[Brownsville Public Utilities Board's](#) (BPUB; A2 stable) credit profile benefits from solid financial performance and maintenance of strong liquidity for more than a decade. The customer base is constrained by a population with below average income levels. Yet, high paying jobs in Brownsville have surged due to SpaceX and LNG investments, and nearshoring trends will further enhance [Port of Brownsville's](#) (A2 stable) regional and national significance.

Management's estimated year-end results indicate that FY2024 may end with FOCC exceeding 2.0x for the third consecutive year, possibly extending into FY2025 based on proposed budget figures.

Exhibit 1

**BPUB may be on track to achieve FOCC over 2.0x for fourth consecutive year Supported by outperformance from offsystem sales and below-budget expenses**



[1] Estimated year-end results for FY2024

[2] Proposed FY2025 budget; subject to change

Source: BPUB budget-to-actual results; preliminary FY2025 budget figures; BPUB budgets and audited financial statements for fiscal years ending September 30; Moody's Ratings

## Credit strengths

- » BPUB has demonstrated a willingness to raise rates in anticipation of future capital projects while outperforming budgets
- » Very good debt structure with about half of currently outstanding revenue bonds retiring by 2030 and steep drop in debt service by 2032, creating capacity for future borrowing
- » The \$100 million commercial paper program provides low cost initial funding for capital projects and could be used for working capital

## Credit challenges

- » Rates for the commercial customers in the electric system are very high compared to the state average
- » Below average median household income levels

## Rating outlook

The stable outlook is based on our expectation that BPUB will maintain strong liquidity and FOCC ratios above the historical average and potentially exceed 2.0x through fiscal 2025

## Factors that could lead to upgrade

- » Sustained economic expansion and median income growth
- » Improved rate competitiveness of all rate classes at or below the state averages
- » Maintaining ample liquidity above 400 days, FOCC ratios remaining above 2.0x without overreliance on off-system sales, and an adjusted debt ratio of below 50% after incorporating long-term debt plans and future resource needs

## Factors that could lead to downgrade

- » Signs of reduced willingness to increase rates as needed to maintain satisfactory financial metrics
- » Deterioration of financial performance, such that fixed obligation charge coverage (FOCC) ratio falls below 1.5x for a sustained period while also maintaining liquidity below 250 days cash on hand
- » Adjusted debt ratio above 80%

## Key indicators

Exhibit 2

### Brownsville Public Utility Board, TX

	2019	2020	2021	2022	2023
Peak Demand (MW)	305	282	283	303	301
Total Sales (mWh)	1,289,739	1,290,456	1,302,272	1,355,442	1,349,673
Debt Outstanding (\$'000)*	300,555	296,400	324,045	311,670	303,645
Adjusted Debt Ratio (%)	49.7	54.8	61.7	57.4	50.2
Total Days Cash on Hand (days)	490	517	270	382	298
Fixed Obligation Charge Coverage (if applicable)(x)	1.79	1.83	0.41	2.51	2.07

Periods are fiscal year-end unless indicated.

\*Debt outstanding includes Southmost Regional Water Authority revenue bonds, of which BPUB participates at a 92.91% share.

Source: Moody's Ratings

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

## Profile

BPUB is wholly owned by the [City of Brownsville](#) (GO rated Aa3) and provides electric, water, and wastewater utility services to the City of Brownsville and surrounding areas. By charter, the management, operation, and control of the system is delegated to the Public Utilities Board of the City of Brownsville. The system operates a fully integrated electric generation, transmission, and distribution system. BPUB is a monopoly provider within its singly certified area covering a substantial portion of the service area within the boundaries of the city and the developed portion of the Port of Brownsville.

## Detailed credit considerations

### Revenue generating base: High wage job growth and trade boom bode well for organic revenue growth from sales

BPUB is a monopoly provider of electric, water, and wastewater services to customers predominantly within the City of Brownsville and also serves some customers outside the city boundaries on a competitive basis. Electric revenues typically average about 77% of total BPUB revenue with the balance coming from water and wastewater.

The Brownsville-Harlingen metro area economy is on track to outpace the region and nation over the near term, according to Moody's Economy.com. Net-migration to the region has turned around after many years of declines, and a population that skews younger is a demographic strength. The utility customer base has historically been constrained by a high poverty rate and low educational attainment. However, Brownsville's growing aerospace industry including SpaceX and related employers are fueling high wage job gains. In addition, NextDecade announced an \$18.4 billion final investment decision for the first phase of the Rio Grande LNG export facility. The Port of Brownsville will benefit from nearshoring as it is the only deepwater port on the US-Mexico border and is the closest deepwater port to the economically ascendant Monterrey, a major hub of industry in Mexico. A deepening project will increase channel depth to 52 feet from 42 feet, which will allow larger vessels to call at the port and support higher trade volumes.

The influx of high wage jobs is broadly positive for the combined utilities system, but the pace of growth relative to housing supply is increasing the local living costs, potentially exacerbating budgetary strain for existing residents. Residential electric rates remain competitive, according to data from the Energy Information Administration, and were about 6% below the state average in 2022. Commercial electric rates were very high at about 45% above the state average, but total cost of doing business in the area remain below the national average.

BPUB is in the early stages of a cost of service study, due for completion in early 2025, that could influence a significant change in the rate structure. Management expects that any changes to the rate structure may have a positive revenue impact starting in fiscal year 2026 or 2027. More recently, BPUB implemented two electric base rate reductions of 11% each in fiscal years 2022 and 2023. The base rate decreases were neutralized by BPUB phasing out its bill reduction program through the fuel and purchased energy charge (FPEC), which is BPUB's monthly fuel cost recovery adjustment mechanism. Starting in 2016, BPUB implemented base rate increases to fund the planned Tenaska generation project that ultimately did not come to fruition. Since 2017, the bill reduction program set the FPEC at a rate that maintained an average electric bill at \$102. The impact of the change, combined with hotter summer temperatures and higher natural gas prices, is evident in the electricity portion of an average monthly residential bill increasing to \$148 in 2022 and \$118 in 2023.

BPUB has also increased water rates by 8% and wastewater by 9% annually over the last two years. In fiscal 2024, BPUB increased water and wastewater rates again by 6% and 9%, respectively.

### Operational and financial performance: Wholesale sales, interest income, and conservative budgeting drive outperformance

For the third consecutive year, we expect fiscal year 2024 (ending September 30), will outperform budget. Year-to-date actuals through June 30 show FOCC over 2.0x and with a strong cushion to the budgeted 1.5x for the same 9-month period primarily due to lower operating expenses. BPUB has a lengthy history of outperforming its budget, with a notable exception in 2021 when Winter Storm Uri wreaked havoc on the entire ERCOT market. Excluding 2021, FOCC has not fallen below 1.6x for at least the last two decades.

Excess revenue from wholesale sales in fiscal years 2022 and 2023 supported FOCC ratios of over 2.0x. Both years were marked by record breaking summer temperatures and market demand. BPUB has been budgeting for \$15 million from wholesale sales but

earned about \$27 million in 2023, allowing it to fund larger portions of its capital plan from internally generated cash flow instead of borrowing.

Our calculation of FOCC is based on net revenues of the combined electric, water and wastewater system. We treat the annual net transfer to the city as an operating expense along with the bill adjustment from the FPEC that was phased out in 2022 and 2023. In addition, we adjust the annual take-or-pay debt-related payment to the [Southmost Regional Water Authority](#) (SRWA; A2 stable) as a debt service payment rather than an operating expense. BPUB's share of the payments range between \$2.1-\$2.3 million over the next five years. This adjustment is due to the take-or-pay nature of the contract, along with the fact that the board is required to purchase any other defaulting minority member's share of the plant should they not pay. The reverse osmosis water treatment plant has a total production capacity of 10 million gallons per day. The board operates the plant and has a 92.91% ownership interest.

### Liquidity

Total unrestricted and discretionary reserves decreased about 9% to \$169 million. Liquidity measured by days cash on hand fell to 298 days in fiscal 2023, down from 382 days cash on hand in fiscal 2022 primarily due to high natural gas prices driving up fuel costs in the operating expense denominator and a one-time cash payout of funds held in reserve for the Tenaska project, ultimately returning the funds to customers since the project did not move forward.

BPUB has a \$100 million commercial paper program backed by a letter of credit (LOC) provided by [PNC Bank, N.A.](#) (P-1). Access to this additional source of liquidity benefits the enterprise because it is available for working capital and provides low cost initial funding for capital projects. However, we did not adjust days cash on hand to incorporate the commercial paper program because the LOC contains a material adverse change clause related to financial conditions. As of fiscal year end 2023 BPUB had a balance of \$12 million outstanding on the program.

### Debt and other liabilities: Declining debt structure and rapid amortization allow room for future debt

Leverage remains in line with the sector median. BPUB's adjusted debt ratio fell to about 50% in fiscal 2023, primarily due to a lower Moody's Adjusted Net Pension Liability (ANPL). The unadjusted debt ratio was unchanged year-over-year at about 37% and only slightly higher than in fiscal 2020 (36%) before BPUB issued debt related to extraordinary Winter Storm Uri costs.

Direct debt outstanding totaled \$284.0 million as of fiscal 2023, including \$455,000 of junior lien bonds as well as a \$12.0 million commercial paper balance. SRWA's debt currently totals \$19.6 million.

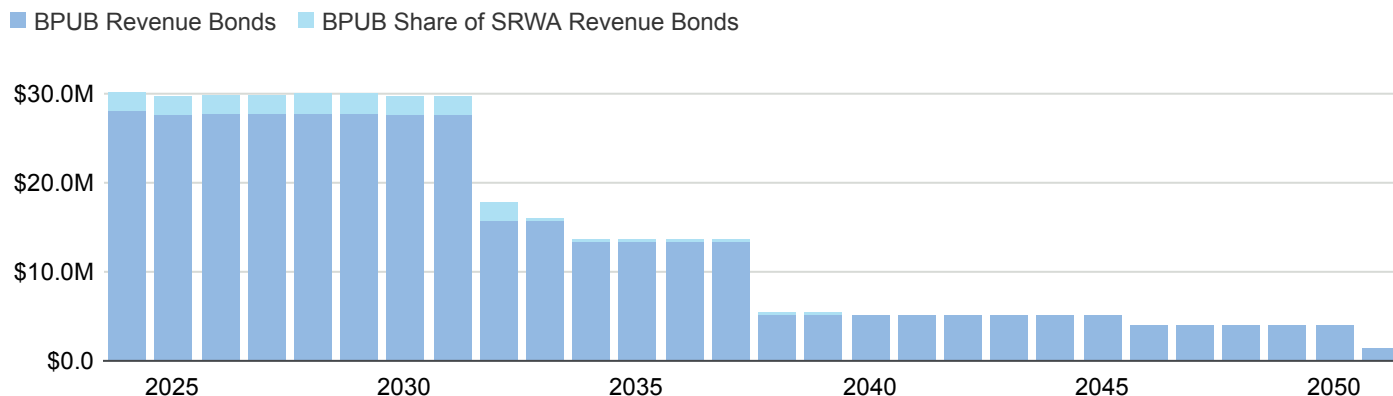
By practice, BPUB usually fixes out commercial paper with long-term debt once the balance reaches about \$50 million. The five-year forecast in the fiscal 2024 budget document assumes debt service will increase in 2028 due to the conversion of commercial paper notes into long-term debt. More recently, BPUB has been funding ongoing capital improvement projects with internally generated cash flow, keeping leverage in check and potentially pushing the timeline for long-term debt issuance. This may change depending on the results of the integrated resource plan study currently underway, with a final report currently expected in early 2025. The board is also considering an optimization project or increasing capacity at the SRWA desalination plant which would likely entail additional debt.

BPUB has a very good debt structure with capacity for future debt issuance. Debt service requirements have a steep drop in 2032, and again in 2038 (Exhibit 3). Moreover, about half of BPUB's currently outstanding debt will be retired by 2030 (Exhibit 4).

### Debt Structure

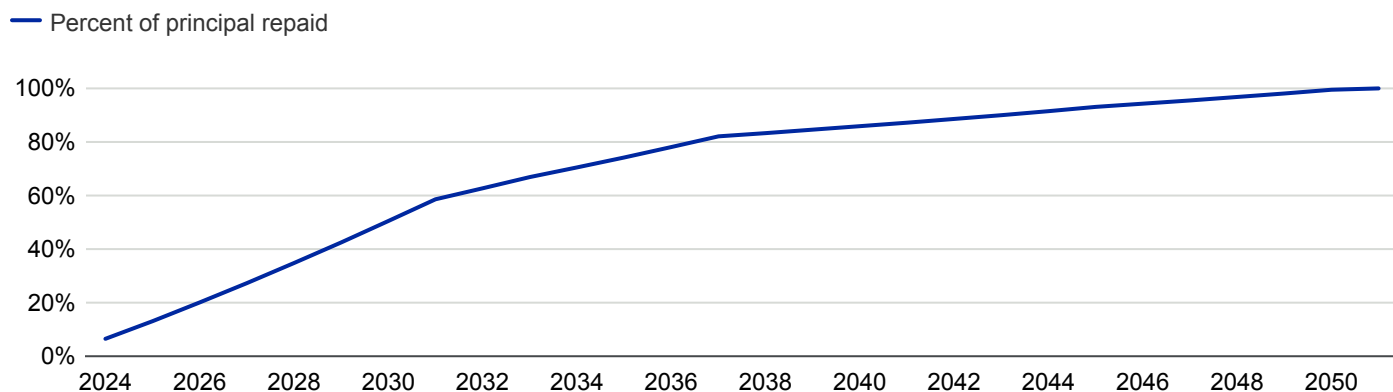
All of the debt is fixed rate. Annual debt service requirements are declining with a significant drop in 2032.

Exhibit 3  
Declining debt structure with capacity for additional future debt



Source: Moody's Ratings; BPUB and SRWA official statements

Exhibit 4  
About half of currently outstanding debt will be repaid by 2030



Source: BPUB official statements; Moody's Ratings

**Debt-related derivatives**

None.

**Pensions and OPEB**

BPUB participates in the nontraditional, joint contributory, hybrid defined benefit pension plan administered by the Texas Municipal Retirement System (TMRS). Moody's adjusted net pension liability (ANPL) for the system, under our methodology for adjusting reported pension data, is \$101.9 million as of fiscal 2023. This is higher than the reported net pension liability of \$42.5 million. The adjusted debt ratio, which includes the ANPL, is 50%.

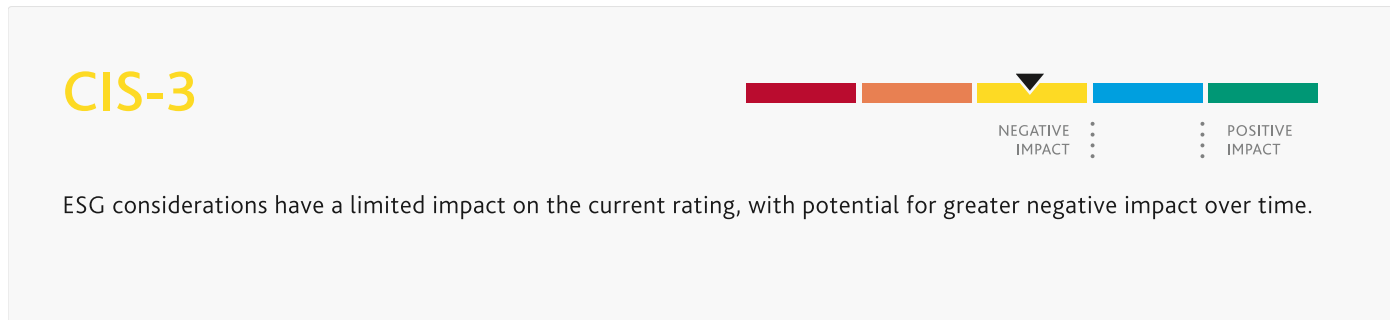
Moody's ANPL reflects certain adjustments we make to improve comparability of reported pension liabilities. The adjustments are not intended to replace BPUB's reported contribution information, or the reported liability information of the plans, but to improve comparability with other rated entities.

## ESG considerations

### Brownsville Public Utilities Board, TX's ESG credit impact score is CIS-3

Exhibit 5

#### ESG credit impact score

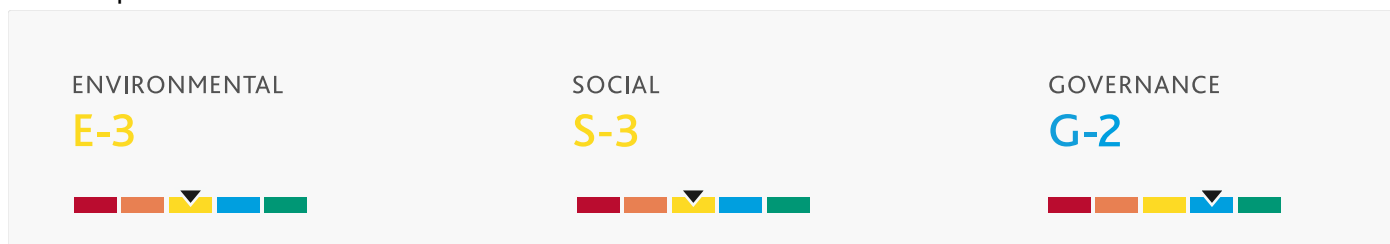


Source: Moody's Ratings

Brownsville Public Utilities Board, TX's (BPUB) ESG credit impact score of **CIS-3** indicates that ESG considerations have a limited impact on the system's current rating with potential for greater negative impact over time due to exposure to environmental and social risks.

Exhibit 6

#### ESG issuer profile scores



Source: Moody's Ratings

### Environmental

**E-3.** BPUB has moderate physical climate and water management risk primarily related to high water stress, which is balanced by BPUB's long-term investments and the system's "Superior" rating by the state regulator. The Rio Grande Valley is a major source of water supply for the region and a prolonged drought in South Texas and northern Mexico has caused significant declines in reserves in recent years. BPUB has made investments to bolster its resiliency to droughts through the development of a brackish water desalination plant with regional partner utilities. The plant's ultimate configuration allows current capacity to be doubled if needed. BPUB has moderate carbon transition risk related to fossil fuel generation exposure owing to the share of natural gas power supply in its generation mix. BPUB eliminated its reliance on coal when the Oklaunion Power Plant was closed in 2020.

### Social

**S-3.** BPUB faces moderate risk related to below average residential wealth and income levels raising affordability risks as BPUB implements rate increases to fund capital investments. That said, the board has a good track record of increasing rates as needed and uses a transparent, phased approach to avoid rate shock and curb customer pushback.

### Governance

**G-2.** Like most municipal utilities, BPUB's rate-setting is not subject to regulatory approval. BPUB faces moderately negative risk related to board structures and policies due to concentration of government ownership. The board is comprised of seven members, six of whom are appointed by the City Commission to four-year terms, and the seventh member is the City's Mayor serving in an ex-

officio capacity. Board meetings are open to the public and held every month. Transfers to the city's general fund relative to operating revenue are average for the sector and well defined by ordinance.

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.

### Rating methodology and scorecard factors

The grid is a reference tool that can be used to approximate credit profiles in the industry in most cases. However, the grid is a summary that does not include every rating consideration. Please see US Public Power Electric Utilities With Generation Ownership Exposure for information about the limitations inherent to the grid. The grid indicated outcome of A2 is same as the assigned rating.

Exhibit 7

#### Rating factors

##### Brownsville Public Utilities Board, TX

Factor	Subfactor	Score	Metric
1. Cost Recovery Framework Within Service Territory	Monopoly with unregulated rate setting. Service area characteristics- GO rating. Customer base stability	Baa	
2. Willingness and Ability to Recover Costs with Sound Financial Metrics	Rate setting record. Timeliness of recovery. Political risk. Local Government Supportiveness. General fund transfer policy	A	
3. Generation and Power Procurement Risk Exposure	Diversity of Supply. Reliability and cost of supply & distribution	A	
4. Competitiveness	Rate Competitiveness (compared to state average)	Baa	
5. Financial Strength and Liquidity	a) Adjusted days liquidity on hand (3-year avg) (days)	Aaa	317
	b) Adjusted Debt ratio (3-year avg) (%)	Aa	56.5%
	c) Adjusted Debt Service Coverage or Fixed Obligation Charge Coverage (3-year avg) (x)	A	1.7
<b>Preliminary Grid Indicated Outcome from Grid factors 1-5</b>		<b>A2</b>	
		<b>Notch</b>	
6. Operational Considerations	Construction risk, whether the utility is a vital service provider	0.0	
7. Debt Structure and Reserves	Debt service reserves, special borrowing arrangements and debt structure	0.0	
8. Revenue Stability and Diversity	Exposure to wholesale power markets, customer concentration, diversity from combined utility operations	0.0	
<b>Grid Indicated Outcome:</b>		<b>A2</b>	

Source: Moody's Ratings

© 2024 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 to Moody's Investors Service, Inc. for credit ratings opinions and services rendered by it. MCO and Moody's Investors Service also maintain policies and procedures to address the independence of Moody's Investors Service 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 [www.moody's.com](http://www.moody's.com) under the heading "Investor Relations — Corporate Governance — Charter 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 Calificadora 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 (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.



Contacts

Julie E Meyer  
AVP-Analyst  
julie.meyer@moodys.com

+1.214.979.6855

Kayla Attis  
Sr Ratings Associate  
kayla.attis@moodys.com

+1.212.553.2876

Scott Solomon  
VP-Sr Credit Officer  
scott.solomon@moodys.com

+1.212.553.4358

CLIENT SERVICES

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