

MOODY'S

INVESTORS SERVICE

New Issue: Moody's upgrades Philadelphia Gas Works to Baa1 from Baa2; outlook revised to stable; Assigns Baa1 to \$275 million Gas Works Revenue Refunding Bonds, 13th Series

Global Credit Research - 22 Jul 2015

PHILADELPHIA (CITY OF) PA GAS WORKS
Gas Enterprise
PA

Moody's Rating

ISSUE

RATING

Gas Works Revenue Refunding Bonds Thirteenth Series (1998 General Ordinance) Baa1

Sale Amount \$275,000,000

Expected Sale Date 07/23/15

Rating Description Revenue: Government Enterprise

Moody's Outlook STA

NEW YORK, July 22, 2015 --Moody's Investors Service has assigned a Baa1 rating to the Philadelphia Gas Work's (PGW) \$275 million Gas Works Revenue Refunding Bonds, Thirteenth Series (1998 General Ordinance). Concurrently, Moody's has upgraded to Baa1 from Baa2 the rating on PGW's outstanding pre-sale 1975 and 1998 Ordinance bonds, which have approximately \$134 million and \$859 million of debt outstanding, respectively. Post-sale, the 1975 Ordinance bonds will be fully redeemed and only the 1998 Ordinance bonds will remain outstanding. PGW's rating outlook is stable.

SUMMARY RATING RATIONALE

The upgrade to Baa1 from Baa2 reflects the supportive rate regulation PGW has received over the last several years that has strengthened the utility's rate base, resulting in an improved and stabilized financial position that is expected to continue. The utility's management has simultaneously enhanced PGW's operating efficiency through favorable labor negotiations, operating cost savings, and other improvements regarding vehicle tracking and the cast iron main replacement program.

PGW's rating reflects a credit supportive regulatory environment, an improved financial position, a sizeable low income and stagnant customer base, and the utility's position as a supplier of last resort, which yields consistently above average retail rates. The rating further factors PGW's high leverage that is projected to decline over time due to the implementation of a projected new Distribution System Improvement Charge (DSIC) that reduces reliance on debt to finance capital.

PGW's state rate regulation constrains its cost recovery framework in comparison to the majority of municipally owned gas utilities in the US, which benefit from local unregulated rate setting. Thus, the rating heavily factors the constructive relationship PGW has with the Pennsylvania Public Utility Commission (PUC) and the fact that the PUC must approve rates sufficient for PGW to satisfy its indenture required 1.5 times debt service coverage ratio (DSCR) rate covenant.

OUTLOOK

The stable outlook reflects Moody's view that PGW's operations will continue to support sound financial metrics on par with those experienced over the last few fiscal years, owing to a solid rate base, the strong suite of credit supportive cost recovery mechanisms, and low natural gas prices.

WHAT COULD MAKE THE RATING GO UP

The rating could face upward rating pressure if there is greater clarity on PGW's potential Liquefied Natural Gas (LNG) expansion project and PGW's financial metrics are maintained at or near current levels.

WHAT COULD MAKE THE RATING GO DOWN

In light of today's rating upgrade, limited prospects exist for the rating to be downgraded over the outlook horizon. Longer-term, the rating could be downgraded if PGW's financial metrics narrow due to higher than expected costs, weaker revenue collections, a less credit supportive rate regulatory environment, and/or increased leverage or a material decline in liquidity.

STRENGTHS

- Supportive rate regulatory environment and history of an effective working relationship with the state regulatory board and the City of Philadelphia (A2, stable)
- Strong 1.5 times rate covenant and The Public Utility Code requires the state regulatory board to establish rates that meet bond ordinance requirements
- Ongoing operating improvements contain costs and support PGW's recent financial improvement
- Low natural gas prices, strategic location of LNG assets, and significant storage capacity allow for effective gas cost management and has already yielded new revenues from off-system LNG sales starting in 2013
- Aggressive strategy for collections of receivables has yielded strong and stable collection rates above 95%, except for a decline to 91.9% in FY 2013, reportedly due to timing differences in the calculation
- The City can only increase the \$18 million City payment by 10% or \$1.8 million without additional state legislation

CHALLENGES

- Sizable low income residential population contributes to delinquencies that may grow if federal assistance programs are cut and these residents face higher monthly bills
- Customer base remains stagnant with above average unemployment and slow regional growth
- Above average retail rates compared to peers
- High system leverage, while declining, is expected to remain above average despite increased cash funded capital expenditures
- Maintaining sufficient available liquidity to balance exposures to gas prices, variable rate debt liquidity risks, and other general liquidity needs

RECENT DEVELOPMENTS

Philadelphia's sale of PGW to UIL Holdings Corporation (UIL, Baa2, stable) was cancelled when UIL withdrew their pursuit in December 2014 due to the City Council's lack of an up or down vote on the sale, which extended beyond the dates in the original memorandum of understanding between UIL and the City of Philadelphia. There is no credit impact related to the asset sale being cancelled.

The ongoing cast iron main replacement capital program has increased over the last three years to about \$52 million in FY 2014 from an average of about \$35 million annually from 2004 to 2011 with the majority of the increased funding recovered from the PUC approved DSIC. A recent request to increase the DSIC to 7.5% from 5.0% of the customer's bill will enable PGW to accelerate its main replacement program, while also avoiding the need to issue debt to fund the program.

PGW is potentially planning to increase liquefaction capacity at one of its LNG plants in order to improve gas supply cost management while also enhancing PGW's ability to sell excess LNG into the local market. PGW commissioned a study by Pace Global to assess the potential regional LNG market demand for the expanded capacity at the Richmond LNG plant. The current LNG liquefaction facilities were put into service in 2005 to replace the older, and more energy intensive, liquefaction plant that was then at the end of its useful life. The current Richmond plant was originally planned as a two phase project with the second phase intended to increase PGW's liquefaction capacity, this was not completed during the original construction. The current construction approach and timing of the potential expansion has yet to be finalized.

The addition of a new modern liquefier with 21,000 Mcf per day of capacity will double PGW's liquefying capacity, allowing the utility to take full advantage of its 4 Bcf storage capacity that is only about 50% utilized currently. The potential new liquefier also provides redundancy with the 2005 vintage existing liquefier, but uses more energy. The new liquefier technology utilizes rapid pressure reduction to cool down the gas, thus limiting the energy usage during the liquefaction process compared to the existing liquefier that requires more energy to cool down the gas.

PGW may issue new debt to fund this potential liquefaction expansion. Given the annual principal repayment of about \$50 million and a declining debt service amortization schedule post-sale, the new debt is not expected to notably weaken coverage or leverage metrics. The next base rate increase is forecast to be effective in fiscal 2018. Forecast potential new revenues from LNG sales and cost savings from better gas supply management post the LNG expansion project completion may temper the amount of this future base rate increase, if approved by the PUC.

PGW signed a new five year collective bargaining agreement (CBA) on June 17, 2015. The new contract includes manageable wage increases between 2.0% to 2.5% annually. A key modification to the CBA allows PGW to hire outside contractors to perform work including work to replace the steel and cast iron mains. Outside contractors may also be used to perform main abandonment projects regulated by the PUC.

DETAILED RATING RATIONALE

REVENUE GENERATING BASE

PGW serves approximately 500,000 customers in the Philadelphia area by supplying, storing and transporting natural gas. As the largest municipally owned regulated gas distribution utility in the US, PGW has a distribution monopoly, yet their residents have the ability to choose their gas supplier. If customers use another gas supplier, PGW is paid a transportation fee for the use of its lines. PGW is also the regional supplier of last resort.

Per moodyseconomy.com, job growth in Philadelphia exceeds that of the region and has caught up with the US as the unemployment rate nears prerecession levels. As the labor market tightens, income growth is likely to accelerate. Cuts to federal assistance for low income customers may pressure vulnerable customers given these increased costs are passed through directly to them rather than absorbed by PGW.

Favorably, low natural gas prices have helped keep bills relatively low and the weather normalization adjustment (WNA) mechanism has also helped keep margins stable. The weather normalization adjustment is key to the utility's financial stability. While the WNA tempers PGW's revenue upside during cold periods, it also limits the downside risk during warm years. For example, the 2012 year was reportedly the warmest year on record and the WNA added \$45 million of revenues in 2012 that helped mitigate the loss of \$121 million of top line revenue due to the notably lower demand. Conversely, in the colder 2014 year, the WNA resulted in a refund to customers of \$12.3 million. We view the WNA as a favorable driver of credit stability.

In addition to the WNA, PGW's current rate structure benefits from historic regulatory support that has provided the utility with a demand side management (DSM) program, the DSIC, and an Other Post Employment Benefit (OPEB) rate to fund the outstanding OPEB liability. The combination of these adjustment mechanisms and prudent fiscal management does not require another base rate increase until fiscal 2018. This credit supportive rate regulatory history and PGW's current rate structure is considered to be satisfactory and right sized for full cost recovery and the generation of adequate excess cash flow to fund capital reinvestment.

The PUC support of PGW grew post 2000 when the PUC and PGW settled an appeal and the PUC adopted a new provision when setting PGW's rates. The provision requires the PUC to allow PGW to charge sufficient rates to satisfy its bond covenants, including the 1.5 times debt service coverage ratio rate covenant. Moody's calculation of net revenue debt service coverage treats the \$18 million annual payment to the city as an operating expense, which results in a lower DSCR than the bond ordinance calculation.

PGW received temporary approval to extend its DSM phase 1 program for about \$10.6 million, while the PUC decides on the DSM phase 2 proposal this summer. The PUC DSM phase 2 hearing is scheduled for mid-August of 2015. Given the PUC's inquiry report concluded that the main line replacement program should be accelerated and paid for with an increase in the DSIC, we believe approval is likely. This additional 2.5% would allow PGW to recover up to about \$33 million per year, up from about \$22 million.

PGW also requested a continuation of the OPEB surcharge, and settled with various interested parties. This settlement is subject to PUC approval.

FINANCIAL OPERATIONS AND POSITION

FY 2014 operating revenues were their highest since 2011 driven by increases in heating demand and revenues associated with gas transportation services. This increase in demand lead to an increase in operating expenses particularly for gas processing, field services and distribution departments; all of which are correlated with demand. Net revenues before debt service, were marginally up year-over-year just over 3%. Built into these numbers is the cost of natural gas utilized, which increased notably over 2013.

Moody's calculated total net revenue debt service coverage on all PGW revenue bonds in 2014 was 1.55 times, a decline from a one-time DSCR high of 1.88 times in 2013. This was driven in part by lower debt service due to early debt redemption in 2012. Moody's DSCR includes the \$18 million payment to the city as an operating expense, which lowers Moody's DSCR compared to the bond ordinance DSCR of 2.11 times for FY 2014.

Estimated FY 2015 DSCR results are forecast to be about 1.45 times coverage following a return to normal pattern for heating revenues. Beyond FY 2015, we calculate fixed obligation DSCRs in the 1.45 times to 1.7 times range as margins are expected to improve, yet no base rate increase is forecast until FY 2018.

Liquidity

Days Cash on Hand decreased modestly to 65 days in FY 2014 from 69 days in FY 2013. However, given an increase in available commercial paper to \$120 million from \$90 million that is supported by a letter of credit, total available liquidity increased to 138 days in FY 2014 from 110 days in FY 2013. The commercial paper program is currently supported by letters of credit in the amount of \$50 million from JP Morgan Chase Bank, N.A. (Aa2(cr), stable) and \$70 million from PNC Bank, N.A. (A1(cr), stable). Moody's forecast for days liquidity on hand will likely remain in the 100 to 125 days range with direct cash liquidity remaining in the 60 to 70 days range, depending on the amount of excess cash flow or commercial paper used to fund capital investments.

DEBT AND OTHER LIABILITIES

PGW's debt ratio declined to 68.5% in FY 2014 from 74.9% in FY 2013, which is PGW's lowest debt level in about two decades. Despite this reduction, PGW still has relatively high leverage compared to other gas utilities. PGW's six year capital plan from FY 2016 to FY 2021 totals about \$680 million with the majority (82% or \$557 million) dedicated to the distribution system, which is primarily the cast iron main replacement program. The plan is forecast to be about 45% debt funded, depending on the level of DSIC approval from the PUC.

DEBT STRUCTURE

Given PGW repays about \$50 million in debt principal annually, the new debt for the LNG expansion project and for other capital improvements of about \$250 million in FY 2017 and \$100 million in FY 2020 is not expected to notably increase the utility's leverage on a net basis. In addition, post this refunding, PGW will have an annually declining debt service repayment schedule for several years and it notably declines after 2028. This amortization profile provides PGW with the flexibility to layer in new debt service payments for new debt without notably raising annual debt service costs that would require a base rate increase.

PGW's debt is primarily fixed rate with about 25% of variable rate demand bonds that are fully hedged. Post the current refunding, the 1975 Ordinance bonds will be fully redeemed and the indenture retired so all remaining outstanding and future debt will be issued under the 1998 Ordinance.

DEBT-RELATED DERIVATIVES

PGW currently has one outstanding floating-to-fixed rate swap with JP Morgan Chase Bank, N.A. (Aa2(cr), stable) for a \$225.5 million notional amount that synthetically fixes the variable interest rate on \$225.5 million of outstanding variable rate demand bonds. Under the swap agreement, PGW pays JP Morgan semiannual fixed rate payments of 3.6745% and receives floating payments based on 70% of 1-month LIBOR. The mark-to-market value on the swap was a negative \$37.7 million as of July 1, 2015. PGW has no collateral posting requirement and the swap is insured by Assured Guaranty Municipal Corp (A2, stable), whose rating is considered under the swap's additional termination events should the insurer's rating fall below A2/A and PGW's rating would also have to fall below Baa2/BBB.

PENSIONS AND OPEB

The City of Philadelphia sponsors PGW's single employer defined-benefit pension plan, the Philadelphia Gas Works Pension plan. In December 2011, the City passed an ordinance to offer all new PGW employees a one-

time option of entering into a deferred compensation plan with an employer contribution equal to 5.5% of applicable wages or the defined-benefit pension plan with an employee contribution of 6% of applicable wages. As of FY 2014, PGW's defined-benefit pension funded ratio was 74.2% and has remained at this level for the last three years, but is up from a post-recession low of 68.4% in FY 2010. While PGW continues to pay its annual actuarial required contribution (ARC), the current funded ratio remains below pre-recession levels that averaged about 86%.

Given the PUC approved OPEB rate surcharge, PGW's OPEB funded ratio has increased to 20% as of August 31, 2014 from zero four years prior. We would expect this ratio to continue to annually improve if the PUC extends the OPEB surcharge which would correspondingly lower the annual OPEB costs to the utility, as has been the case over the last four years. PGW's OPEB plan includes healthcare and life insurance benefits in accordance with their retiree medical program.

MANAGEMENT AND GOVERNANCE

PGW is municipally owned by the City of Philadelphia, but unlike other municipally owned utilities, PGW's rates are regulated by the state. PGW has a monopoly over gas distribution in its 129 square mile service territory. PGW is responsible for the day-to-day operation, management and maintenance of the gas system, yet several other entities have oversight over PGW's operations, including budgetary and rate approval. The state PUC regulates PGW's rates, services and safety, while the seven member board of the Philadelphia Facilities Management Corporation (PMFC) is the executive management and operational director of PGW. The Philadelphia Gas Commission (PGC) is a five member oversight board who approves PGW's operating budget and some PMFC personnel, as well as reviewing the capital budget, real estate transactions and gas supply contracts for approval by the City Council. The five member PGC board is made up of the City Controller, two mayoral appointees, and two city council appointees. The City Council enacts legislation to approve PGW's capital budget and gas supply contracts, as well as other material operating changes, real estate transactions and capital investments.

OBLIGOR PROFILE

PGW is a municipally owned regulated gas distribution utility that supplies and transports natural gas to 500,000 primarily residential customers within the City of Philadelphia. PGW has a distribution monopoly in the City and serves as the supplier of last resort given there is gas supplier choice in Pennsylvania. If customers use another gas supplier, PGW is paid a transportation fee for the use of its lines. PGW's gas distribution system consists of approximately 3,024 miles of gas mains, 475,800 service lines, and 202 regulator stations. Approximately 50% (by length) of the gas mains are cast iron, 33% are steel, 4% are ductile iron and 13% are plastic. Of the steel lines, 50% are wrapped, coated and cathodically protected. About 31% of the service lines are steel and 69% are plastic. PGW also operates two LNG facilities for liquefaction, storage, and regasification of natural gas, which is used during the winter in addition to the utility's firm take from two interstate pipelines. The utility has laddered firm gas supply contracts and has a relatively balanced gas supply mix with half coming from the Spectra pipeline and the other half coming from the Transco-Williams pipeline. The proposed expansion to the LNG facility will further enable PGW to manage fluctuations in demand due to weather while also providing a physical hedge against price fluctuations.

LEGAL SECURITY

The 1998 Ordinance bonds and the 1975 Ordinance bonds are secured by net natural gas system revenues. The 1975 Ordinance bonds have a superior lien position to the 1998 Ordinance bonds. However, after the refinancing of the entire outstanding 1975 Ordinance bonds, they will be fully redeemed with new 1998 Ordinance bonds and the 1975 Ordinance bond indenture will be retired. The security provisions for the 1975 and 1998 Ordinance bonds are relatively the same. There is a strong rate covenant and additional bonds test requiring net revenues to be 150% of annual debt service costs and a cash funded debt service reserve fund at maximum annual debt service. The indentures for both the 1975 and 1998 Ordinance bonds require PGW to operate and maintain the Gas Works System as long as any bonds or notes are outstanding, effectively restricting the sale of PGW's assets unless the outstanding debt is paid in full.

USE OF PROCEEDS

Bond proceeds will be used to refinance all of the outstanding 1975 Ordinance bonds, as well as certain maturities of various series of the 1998 Ordinance bonds. The refunding is estimated to be about \$126 million to refinance the 1975 Ordinance bonds and \$178 million to refund the 1998 Ordinance bond maturities for an estimated net present value savings of 7.6% taken over the life of the debt.

ISSUER CONTACT: Joseph F. Golden Jr. - 215-684-6464

RATING METHODOLOGY

The principal methodology used in this rating was US Municipal Utility Revenue Debt published in December 2014. Please see the Credit Policy page on www.moodys.com for a copy of this methodology.

REGULATORY DISCLOSURES

For ratings issued on a program, series or category/class of debt, this announcement provides certain regulatory disclosures in relation to each rating of a subsequently issued bond or note of the same series or category/class of debt or pursuant to a program for which the ratings are derived exclusively from existing ratings in accordance with Moody's rating practices. For ratings issued on a support provider, this announcement provides certain regulatory disclosures in relation to the rating action on the support provider and in relation to each particular rating action for securities that derive their credit ratings from the support provider's credit rating. For provisional ratings, this announcement provides certain regulatory disclosures in relation to the provisional rating assigned, and in relation to a definitive rating that may be assigned subsequent to the final issuance of the debt, in each case where the transaction structure and terms have not changed prior to the assignment of the definitive rating in a manner that would have affected the rating. For further information please see the ratings tab on the issuer/entity page for the respective issuer on www.moodys.com.

The following information supplements Disclosure 10 ("Information Relating to Conflicts of Interest as required by Paragraph (a)(1)(ii)(J) of SEC Rule 17g-7") in the regulatory disclosures made at the ratings tab on the issuer/entity page on www.moodys.com for each credit rating:

Moody's was not paid for services other than determining a credit rating in the most recently ended fiscal year by the person that paid Moody's to determine this credit rating.

Regulatory disclosures contained in this press release apply to the credit rating and, if applicable, the related rating outlook or rating review.

Please see www.moodys.com for any updates on changes to the lead rating analyst and to the Moody's legal entity that has issued the rating.

Please see the ratings tab on the issuer/entity page on www.moodys.com for additional regulatory disclosures for each credit rating.

Analysts

John Medina
Lead Analyst
Public Finance Group
Moody's Investors Service

Dan Aschenbach
Backup Analyst
Public Finance Group
Moody's Investors Service

Chee Mee Hu
MANAGING DIRECTOR
Public Finance Group
Moody's Investors Service

A.J. Sabatelle
Additional Contact
Public Finance Group
Moody's Investors Service

Contacts

Journalists: (212) 553-0376
Research Clients: (212) 553-1653

Moody's Investors Service, Inc.
250 Greenwich Street
New York, NY 10007
USA



© 2015 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 INVESTORS SERVICE, INC. AND ITS RATINGS AFFILIATES ("MIS") ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND CREDIT RATINGS AND RESEARCH PUBLICATIONS PUBLISHED BY MOODY'S ("MOODY'S PUBLICATIONS") MAY INCLUDE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. 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. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS AND MOODY'S OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. MOODY'S PUBLICATIONS MAY ALSO INCLUDE QUANTITATIVE MODEL-BASED ESTIMATES OF CREDIT RISK AND RELATED OPINIONS OR COMMENTARY PUBLISHED BY MOODY'S ANALYTICS, INC. CREDIT RATINGS AND MOODY'S PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. NEITHER CREDIT RATINGS NOR MOODY'S PUBLICATIONS COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS AND PUBLISHES MOODY'S PUBLICATIONS 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 AND MOODY'S PUBLICATIONS ARE NOT INTENDED FOR USE BY RETAIL INVESTORS AND IT WOULD BE RECKLESS FOR RETAIL INVESTORS TO CONSIDER MOODY'S CREDIT RATINGS OR MOODY'S PUBLICATIONS IN MAKING ANY 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.

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 rating process or in preparing the Moody's Publications.

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 SUCH RATING OR 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 rating, agreed to pay to Moody's Investors Service, Inc. for appraisal and rating services rendered by it fees ranging from \$1,500 to approximately \$2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moody.com under the heading "Investor Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

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 clients. It would be dangerous for "retail clients" to make any investment decision based on MOODY'S credit rating. If in doubt you should contact your financial or other professional adviser.

For Japan only: MOODY'S Japan K.K. ("MJKK") is a wholly-owned credit rating agency subsidiary of MOODY'S Group Japan G.K., which is wholly-owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO. Moody's SF Japan K.K. ("MSFJ") is a wholly-owned credit rating agency subsidiary of MJKK. MSFJ is not a Nationally Recognized Statistical Rating Organization ("NRSRO"). Therefore, credit ratings assigned by MSFJ are Non-NRSRO Credit Ratings. Non-NRSRO Credit Ratings are assigned by an entity that is not a NRSRO and, consequently, the rated obligation will not qualify for certain types of treatment under U.S. laws. MJKK and MSFJ are credit rating agencies registered with the Japan Financial Services Agency and their registration numbers are FSA Commissioner (Ratings) No. 2 and 3 respectively.

MJKK or MSFJ (as applicable) hereby disclose that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MJKK or MSFJ (as applicable) have, prior to assignment of any rating, agreed to pay to MJKK or MSFJ (as applicable) for appraisal and rating services rendered by it fees ranging from JPY200,000 to approximately JPY350,000,000. MJKK and MSFJ also maintain policies and procedures to address Japanese regulatory requirements.