Grant County Public Utility District No. 2, Washington

The 'AA' rating reflects Grant County Public Utility District No. 2's (Grant PUD) very strong financial profile assessment in the context of its 'a' revenue defensibility assessment and 'aa' operating risk assessment. The 'aa' financial profile is expected to remain stable over the next five years, with leverage, calculated as net adjusted debt/adjusted funds available for debt service, remaining between 3.2x and 4.1x, supportive of the rating. The district continues to maintain healthy liquidity and very low retail rates.

The district benefits from its sizable hydroelectric generating resources, which produce very low-cost power sufficient to meet the district's retail needs and provide the opportunity to sell surplus energy on a wholesale basis. The district's risk management strategies largely hedge revenue from hydrology-based volume risk, but the portion of wholesale energy sold under market-based pricing exposes the district to somewhat elevated revenue volatility on a meaningful portion of revenue (roughly 24% in 2022), which Fitch Ratings believes constrains the district's revenue defensibility at 'a'.

Under current load projections, significant new large-load industrial development in the district's service territory will require the procurement of additional energy resources after 2025. The addition of new resources will require compliance with state mandates requiring greenhouse gas (GHG) neutrality by 2030 and electricity from 100% renewable, GHG-free resources by 2045.

District resource planning documents project the addition of up to 1.2 gigawatts of solar, wind, solar plus battery storage and natural gas procurement through purchase agreements or district development. Management expects the costs associated with building or procuring additional resources will largely be borne by the new industrial customers driving the growth.

Security

Grant PUD's Electric System bonds are payable from the revenue of the electric system after payment of distribution system operating expenses, inclusive of Priest Rapids Project (PRP) resource costs.

The PRP bonds are payable from revenue received under unconditional power sales contracts that extend through 2052, coterminous with the expiration of the Federal Energy Regulatory Commission (FERC) license for the PRP.

Public Finance Public Power United States

Rating

Foreign Currency Long-Term IDR

AA

Outlook

Long-Term Foreign Currency IDR Stable

Applicable Criteria

Public Sector, Revenue-Supported Entities Rating Criteria (April 2023) U.S. Public Power Rating Criteria (March 2023)

Related Research

Public Power – Fitch Analytical Comparative Tool (FACT) – 2023 (June 2023) U.S. Public Power – Peer Review (June 2023) U.S. Public Power and Electric Cooperatives Outlook 2023 (December 2022)

Analysts

Kathy Masterson +1 512 215-3730 kathryn.masterson@fitchratings.com

Dennis Pidherny +1 212 908-0738 dennis.pidherny@fitchratings.com

Key Rating Drivers

Revenue Defensibility - 'a'

Significant Wholesale Sales Supported by Various Contracts; Very Low Retail Rates

The 'a' assessment factors in the revenue risks and benefits of a growing but concentrated retail load and significant surplus wholesale energy sales that are exposed to market-based price risk. The assessment also reflects Grant PUD's strategy to hedge these risks, including slice contracts that largely mitigate hydrology-based volume risk. Anticipated district load growth stemming from industrial sector expansion will reduce energy available for wholesale sales and reduce revenue subject to competitive pressure over the next five years.

Retail rates are independently set by the district's board of commissioners, and rate affordability is considered very strong. Service area demographics are mixed. Unemployment is well above the national average, and the median household income is below average, but the area was bolstered by strong customer growth of 1.4% over the last five years.

Operating Risk – 'aa'

Ample, Very Low-Cost Hydroelectric Resources

The operating risk assessment reflects the district's valuable hydropower generation resources that provide exceptionally low-cost electric power that consistently produces power at 3.0 cents/kWh or below. Operating costs are not expected to experience material upward pressure, although the district's capital spending has increased as modernization investments are made and FERC-required relicensing requirements are determined.

Operating cost flexibility is considered weaker given the concentration in hydro assets, but in Fitch's view, the assets provide significant benefits, and concentration risk does not reach a level that constrains the operating risk assessment.

The district's consolidated five-year capital improvement plan (CIP) is estimated at \$811 million, with spending on electric system improvements (59% of total) marginally higher than on PRP capital projects (41% of total). Approximately 70% of the CIP is expected to be funded with rate revenue.

Financial Profile – 'aa'

Very Strong Financial Profile

The district's financial profile is very strong, with coverage of full obligations (COFO) consistently above 1.5x, which includes multiple years of \$50 million cash defeasances of outstanding maturities. Operating margins were consistently above 26% over the past five years. Leverage remains very low for the risk profile, declining to a five-year low of 3.6x at YE 2022. Liquidity remains healthy, well in excess of the district's 250 days cash on hand (DCOH) target.

Fitch's forward-looking scenario indicates an increase in leverage as a result of reduced wholesale sales revenue and increased capital spending. However, leverage is expected to remain adequate for the rating at below 6.0x throughout Fitch's base and stress cases.

Rating Sensitivities

Factors that Could, Individually or Collectively, Lead to Negative Rating Action/Downgrade

- Inability to effectively manage the various hedging agreements while maintaining a strong revenue defensibility assessment could negatively affect the rating;
- Unexpected sizable increases in capital spending or higher borrowing requirements that reduce financial margins and raise leverage consistently above 6.0x.

Factors that Could, Individually or Collectively, Lead to Positive Rating Action/Upgrade

• Consistently higher funding in rates to support capex that produces a materially lower leverage profile could result in upward rating movement.

Profile

The district is a vertically integrated electric utility serving retail customers throughout Grant County, WA, with a retail customer base of approximately 54,000. The district maintains and accounts for two operating systems: the electric distribution system, comprising 4,381 miles of transmission and distribution lines, and the PRP generating assets, which include assets from Priest Rapids and Wanapum. The Priest Rapids assets consist of a dam and

hydroelectric generating station with a nameplate capacity of 950MW, while the Wanapum assets consist of a dam and hydroelectric generation station with a nameplate capacity of 1,222MW, for total combined generating capacity of 2,172MW.

The district historically issued separate debt payable from the electric system and the net revenues of each of the two generating projects. However, in 2010, the district consolidated the developments into one system called the PRP, and it now issues PRP debt payable from the combined developments. The PRP hydro developments were combined under a new power sales contract, effective Nov. 1, 2009, that extends through the life of the FERC license expiring April 1, 2052.

Fitch rates the district and its debt as a single, integrated system, which includes the debt of the electric distribution system, PRP, and the separately financed hydro development debt issued prior to 2010. PRP debt is secured entirely by unconditional payments from the electric distribution system, reduced by any revenue the PRP collects from other wholesale counterparties, making the electric distribution system the ultimate obligor on the PRP bonds. The electric system makes payments to the PRP as an operating expense, prior to payments on the electric system debt. However, if the PRP were to become inoperable or not provide any energy, the electric system payments to the PRP would become subordinate to the electric system bonds.

Revenue Defensibility

Revenue Source Characteristics

Grant PUD's revenue sources are a mix of very stable monopolistic retail electric sales (66% of total revenue in 2022), long-term contracted off-system sales with investment-grade counterparties (7%) and a meaningful portion (24%) derived from more variable wholesale sales exposed to pricing risk from auction sales. Fitch considers this revenue mix to have meaningful exposure to competitive revenue sources and a degree of concentration in off-system counterparties that factor into the midrange assessment for revenue source characteristics. A less significant portion (3%) of competitive revenue came from the district's fiber optic services, which the district continues to build out.

Retail System's 63.3% Rights to PRP Hedged to Remove Hydrology-Based Volume Risk

By law, Grant PUD is entitled to 63.3% of the physical output of the PRP to meet retail demand in its territory. However, delivery of energy from the project is highly variable over time. The project is considered a "run of the river" project, meaning that the district must generate with the water as it is released from upstream reservoirs, and there is little to no storage to shape generation output to load demand. The district has proactively hedged its PRP output against hydrological variability through various hedging agreements that sell a slice of the PRP actual output in return for paying that share of project costs and providing energy to serve a specified percentage of the district's retail load.

In low water years, such as 2019 (84% of average) and 2021 (87% of average), the hedging arrangements provided more energy to the district's retail load than was produced by that slice of the PRP. Conversely, the agreements provide upside financial potential associated with above average water conditions to the counterparties. Since 2015, when the agreements began, the hedging strategy, along with the growing retail load, has acted to stabilize revenue. Counterparties to the agreements are Morgan Stanley (A+/Stable), at 33.3% of the PRP through 2025; AVANGRID, Inc. (BBB+/Stable), at 10% of the PRP through 2024; and Shell plc (AA-/Stable), at 20% of the PRP through 2023. Management expects to replace each of these contracts as they periodically come close to the termination dates with similar terms. Each counterparty has collateral posting requirements if its ratings fall below investment grade.

Remaining 36.7% of PRP Sold Under Various Contracts, Further Hedging Hydro Risk

FERC license requirements stemming from federal legislation adopted in 1954 — Public Law 83-544 — requires the district to sell a "reasonable portion" (30%) of PRP energy output under market-based principles, which the district meets through an annual auction. Selling the PRP output as a slice product transfers hydro risk for the upcoming year to the off-taker, and in exchange the district receives the market price risk on this meaningful portion of revenue. The district uses the financial benefits on this 30% of the project to purchase the balance of its retail energy demand not covered by the district's physical rights to the PRP. District management estimates that in 2025, based on expected load growth, retail energy demand will outstrip the combined physical and financial rights provided by the PRP.

The remaining 6.7% slice of PRP is the minimum slice sold to 17 long-term off-system utilities in the region served under take-or-pay contracts expiring in 2052. This portion of revenue is considered less variable, as the energy is sold at cost, with the purchaser taking on the hydro volatility for its slice of PRP output. In 2022, sales to these long-term purchasers produced approximately 7% of revenue. Counterparty credit risk is factored into Fitch's revenue defensibility assessment. The top three purchasers are among the largest investor-owned utilities in the region: PacifiCorp, Portland General Electric and Puget Sound Energy, Inc. (BBB+/Stable).

Service Area Characteristics

Grant County encompasses 2,681 square miles along the Columbia River in central Washington. The county's economy is historically agricultural-based. However, a relatively recent influx of tech companies (data centers) and energy-intensive industrial manufacturing firms (chemical and aluminum processors) helped diversify the economy and bring additional jobs into the area. Very low retail power costs create a strong environment for industrial growth.

Favorable demand characteristics, including retail customer growth of 1.4% per year over the prior five years (2018–2022) and retail electric load growth near 5% per year, are strengths of the district's service area. Fitch expects this to continue in the medium term, as the district expects continued strong load growth over the next five years, driven primarily by industrial growth.

Other service area characteristics in the county, such as economic and demographic characteristics, are not as strong. Median household income and unemployment still reflect the agricultural base of the job market, with midrange income levels, at 92% of the national median in 2021, and weaker unemployment, at 167% of the national level in 2022.

Rate Flexibility

The district is governed by an elected five-member board of commissioners, serving four- and six-year staggered terms. The board of commissioners has the exclusive authority to set rates and charges for the district's services. No outside regulatory approval is required.

The exceptionally low cost of power from PRP allows the system to keep retail electric rates similarly exceptionally low, with retail rates among the lowest in the country. The district average retail revenue/kWh reported by the U.S. Energy Information Administration in 2021 was just 49% of the state average. Rate affordability is very high, as measured by average annual residential energy costs in relation to median household income, with an affordability ratio of 1.8%. The district implemented a system-wide 3% retail rate increase on April 1, 2023, its first increase since 2018.

Asymmetric Factor Considerations

Retail Customer Concentration

The district's retail customer base is concentrated, with several large industrial customers, including one crypto mining operation and four data centers. The top ten customers accounted for an elevated 46% of retail revenue and approximately 39% of total revenue in 2022. The district continues to attract new, large customers.

Fitch's revenue defensibility assessment is not further constrained by this customer concentration from the constraint presented by the meaningful revenue provided by competitive sales. The district's below-market cost of power provides the option to sell excess power into wholesale markets, reducing potential financial impact from the departure of a large customer. Fitch will monitor the growing industrial concentration as the district promotes its very low-cost industrial rates and expects to attract new large customers over the medium term.

Operating Risk

Operating Cost Burden

A key credit strength of the district is the PRP's exceptionally low-cost and sizable hydropower production. Fitch calculates a very low operating cost burden for the district at roughly 3.0 cents/kWh, anchoring the very strong 'aa' operating risk assessment. Even under adverse water conditions like the district experienced in 2019 and 2021, the district's cost burden remained below 3.0 cents/kWh. PRP's power cost continues to compare favorably with the region's largest power supplier, Bonneville Power Administration, at 3.49 cents/kWh rates for their priority firm power. The district's operating cost burden has very slowly increased over time but remains among the lowest operating cost burdens in Fitch's retail public power portfolio.

Operating Cost Flexibility

Fitch assesses the district's operating cost flexibility as weaker due to the lack of resource diversity outside hydropower. However, the risk of hydro variability is largely offset by the significant benefits of inexpensive power, the size of the owned resources, the partial hedging of volume risks and the district's proficiency in using advantageous hydro years to financially prepare for adverse conditions. In Fitch's opinion, the risk does not rise to a level that constrains the 'aa' operating risk assessment.

The PRP largely consists of the Wanapum and the Priest Rapids hydroelectric developments, which entered service in 1961 and 1963, respectively, and operated extremely efficiently for decades until a fracture at Wanapum in 2014, which has since been repaired and is back to full operations. The PRP's operational flexibility provides significant

additional value beyond the low energy cost of the power produced. That value is monetized both in the pooling and slice contracts Grant PUD uses for its rights to 63.3% of the physical PRP project to meet its retail load and in the wholesale revenue realized for another 30% of the PRP output. Despite large capital needs for turbine replacement, licensing and powerhouse improvements, Fitch expects the cost of the project's hydropower to remain competitive.

Resource Adequacy

The district is analyzing various strategies for additional resources, both owned or purchased, to meet increasing load needs. The district is engaged in various smaller purchased power contracts used as economically effective means to balance load, meet power needs in remote areas of its large geographic service territory and make renewables investments.

Environmental Considerations and Clean Energy Transition

Under the state's renewable portfolio standards (RPS), utilities serving 25,000 customers or more, such as Grant PUD, are required to obtain 15% of their load from renewable resources, including incremental hydro, wind, solar or renewable energy credits (RECs). The district's existing resources comply with the RPS through investments in PRP incremental generation and ownership shares of the Nine Canyon Wind Project. The district is allowed to take the environmental attributes in an amount sufficient to meet RPS requirements under the distribution system's pooling agreement, with the remaining RECs going to Morgan Stanley.

Washington passed the Clean Energy Transformation Act in 2019, which requires the state to achieve a power supply free of carbon emissions by 2045. The district is well positioned to meet this mandate given its carbon-free power supply. Management estimates it is in a position to meet the GHG-neutral standard by 2030 and to achieve 100% compliance by 2045. These environmental considerations are an important aspect of the district's resource planning as it evaluates additional resources.

Capital Planning and Management

Fitch calculates the average age of plant at 17 years, with capital management appearing adequate. Favorably, the capex/depreciation ratio measured 175% over the last five years, indicating significant investment in both its generating assets and its distribution system. The 2023–2027 CIP totals \$811 million, with a majority dedicated to investment in the electric system (\$484 million) and the remainder (\$327 million) going toward the PRP. The CIP will be funded largely from ongoing revenues and an estimated 30% from debt.

Replacements and investments in the generating assets have been sizable and ongoing. At the Wanapum Dam, all 10 turbines were replaced by 2013, and all 10 generators were completed by 2020. The incremental additional capacity gained through such investment is considered renewable under the state's RPS. Importantly, the new turbine design satisfies FERC license requirements to provide greater protection for healthy fish passage through the dams. A majority of remaining work includes similar investments at Priest Rapids assets to replace turbines and generator upgrades. These upgrades are projected to be substantially complete by 2029, and the majority of the remaining costs are included in the \$327 million CIP total.

Additionally, both the Wanapum and Priest Rapids dams need work to remedy potential exposure to seismic risk. Modifications are occurring at the Priest Rapids Dam spillway, with an estimated cost of \$18.2 million. A specific portion of the Wanapum Dam may need remediation and is the subject of an in-progress engineering analysis. The analysis is scheduled to be complete by late 2024 to early 2025. A fracture discovered in the Wanapum Dam in 2014 was repaired for roughly \$62 million, with a portion covered by insurance. The dam was back to full operation in 2015.

Asymmetric Factor Considerations

There are no asymmetric operating risk factor considerations.

Financial Profile

Financial Profile and FAST Analysis

Grant PUD's consolidated financial profile is very strong, producing operating margins ranging from 26% to 35% since 2018. Recent financial performance remained healthy in spite of poor hydro conditions in 2021 and the pandemic in 2020, demonstrating the benefit of the district proactively insulating financial performance from volume risk.

The remaining price risk produces some fluctuation in margins and leverage, but leverage continued to trend lower in recent years. Factors contributing to the leverage decline include the district's increasing retail load and retail rate increases shifting revenue to the more stable retail base, hedging hydro risk, and limited debt funding needs despite a higher capex environment. Leverage in 2022 declined to a five-year low of 3.6x, which is considered very low relative to the revenue defensibility and operating risk assessments. Fitch's leverage calculation includes cash balances in

bond sinking funds and debt service reserve funds. The district has sizable balances in these funds (\$232 million in 2022), which Fitch nets against the district's fixed obligations, including outstanding debt and pension obligations.

Liquidity is strong and considered neutral to the rating, given the district's 304 DCOH available in 2022. The unrestricted cash balance of \$167 million includes the electric system reserve and contingency fund. Cash remains well above the district's liquidity targets of \$105 million, or 250 DCOH, for the electric system. Fitch-calculated COFO was consistently over 1.5x through 2022, with a slight decline to a still-healthy 1.6x in 2020 and 1.5x in 2021, when two \$50 million private placement maturities (2017-M in 2020 and 2019-P in 2021) came due and were paid off with cash reserves.

Fitch Analytical Stress Test (FAST) – Base and Stress Cases

The FAST model considers the district's base case financial forecast as a starting point, which assumes continued strong growth in retail energy sales, no rate increases, and wholesale revenue from average water condition market prices. The district assumes continued retail sales growth driven by new industrial loads, which Fitch considers reasonable given the new customers added in recent years and advantageous industrial rates the district can offer to attract new customers. The increase in retail load should contribute to stability, and the district will need to add new purchased power to continue to grow retail load.

In both Fitch's base and stress cases, key financial ratios remain supportive of the rating. In the stress case, which posits a two-year decline in both retail and wholesale revenues followed by recovery, leverage increases to close to 6.0x as margins are squeezed, but leverage and liquidity remain supportive of the 'AA' rating. The diversity of revenues helps alleviate a single stress, like a retail load decline, where the district would be able to profitably sell excess capacity, given the very low-cost resources. Limited new debt is expected given the district's plans to continue to use revenue to fund 70% of capital plans totaling roughly \$811 million for 2023–2027.

Debt Profile

Fitch considers the debt profile neutral to the rating. The district's consolidated debt outstanding was approximately \$1.2 billion at YE 2022. The majority of debt is outstanding for the PRP system. The consolidated PRP revenue bonds issued since 2010 account for \$864 million of total debt. The large majority of the district's debt is fixed-rate debt, with only roughly \$50 million in variable-rate debt left outstanding.

Asymmetric Additive Risk Considerations

There are no overall asymmetric additive risk considerations.

ESG Considerations

Grant PUD's ESG Relevance Score of '2' for GHG Emissions & Air Quality varies from the public power sector guidance score of '3' because carbon-free systems (hydro, wind, nuclear, biomass and biowaste, and geothermal) are not significantly exposed to the generation of GHG emissions from operations.

Unless otherwise disclosed in this section, the highest level of ESG credit relevance is a score of '3'. This means ESG issues are credit-neutral or have only a minimal credit impact on the entity, either due to their nature or the way in which they are being managed by the entity. For more information on Fitch's ESG Relevance Scores, visit www.fitchratings.com/esg.

Financial Summary

(\$000, Audited Years Ended Dec. 31)	2018	2019	2020	2021	2022
Net Adjusted Debt to Adjusted FADS (x)	4.63	4.39	4.21	4.10	3.58
Net Adjusted Debt Calculation		· · ·	· · ·		
Total Current Maturities of Long-Term Debt	29,240	80,580	79,295	29,795	31,969
Total Long-Term Debt	1,306,064	1,221,069	1,134,536	1,152,344	1,119,061
Total Debt	1,335,304	1,301,649	1,213,831	1,182,139	1,151,030
+ Capitalized Fixed Charge — Purchased Power & Gas	_	_	_	_	30,955
+ Total Pension Obligation (GASB Fitch-Adjusted NPL + FASB PBO)	95,006	89,923	93,883	14,956	46,971
- Total Unrestricted Cash	280,057	245,465	196,801	158,590	167,154
- Restricted Funds for Debt Service	205,085	218,802	220,778	230,330	232,029
Net Adjusted Debt	945,168	927,305	890,135	808,175	829,774
Adjusted FADS for Leverage Calculation					
Total Operating Revenue	311,270	321,174	332,044	359,737	409,779
Total Operating Expenses	202,707	220,344	231,069	265,319	281,430
Operating Income	108,563	100,830	100,975	94,418	128,349
+ Adjustment for Deferred and Subsidy Revenue	10,552	10,545	10,616	10,484	10,427
+ Depreciation and Amortization	73,234	76,050	78,677	80,144	80,710
+ Interest Income	11,391	22,324	19,569	2,578	_
+ Other Noncash Charges	_	_	_	595	403
FADS	203,740	209,749	209,837	187,624	219,486
+ Adjustment for Purchased Power	_	_	_	_	3,869
+ Pension Expense	423	1,339	1,669	9,253	8,413
Adjusted FADS for Leverage	204,163	211,088	211,506	196,877	231,768
Coverage of Full Obligations (x)	2.34	2.35	1.60	1.51	2.85
FADS	203,740	209,749	209,837	187,624	219,486
+ Adjustment for Purchased Power	_	_	_	_	3,869
Adjusted FADS for Coverage	203,740	209,749	209,837	187,624	223,355
Full Obligations Calculation					
Cash Interest Paid	55,503	60,069	50,423	45,014	44,798
Prior Year Current Maturities	31,635	29,240	80,580	79,295	29,795
Total Annual Debt Service	87,138	89,309	131,003	124,309	74,593
+ Adjustment for Purchased Power	_	_	_	_	3,869
Total Fixed Obligations	87,138	89,309	131,003	124,309	78,462
Liquidity Cushion (Days)	790	621	471	313	304
Unrestricted Cash (Days)	790	621	471	313	304
Liquidity Calculation					
+ Total Unrestricted Cash	280,057	245,465	196,801	158,590	167,154
Total Liquidity	280,057	245,465	196,801	158,590	167,154
Cash Operating Expense Calculation	· · · · · · · · · · · · · · · · · · ·		· · · · · ·	· · · · · · · · · · · · · · · · · · ·	
Total Operating Expense	000 707	220,344	231,069	265,319	281,430
	202,707	220,344	201,007	200,017	
- Depreciation and Amortization	73,234	76,050	78,677	80,144	80,710

FADS – Funds available for debt service. PBO – Pension benefit obligation. Source: Fitch Ratings; Fitch Solutions; Lumesis; Energy Information Administration; Grant County Public Utility District No. 2, Washington

For information on the solicitation status of the ratings included within this report, please refer to the solicitation status shown in the relevant entity's summary page of the Fitch Ratings website.

For information on the participation status in the rating process of an issuer listed in this report, please refer to the most recent rating action commentary for the relevant issuer, available on the Fitch Ratings website.

DISCLAIMER & DISCLOSURES

All Fitch Ratings (Fitch) credit ratings are subject to certain limitations and disclaimers. Please read these limitations and disclaimers by following this link: https://www.fitchratings.com/understandingcreditratings. In addition, the following https://www.fitchratings.com/rating-definitions-document details Fitch's rating definitions for each rating scale and rating categories, including definitions relating to default. Published ratings, criteria, and methodologies are available from this site at all times. Fitch's code of conduct, confidentiality, conflicts of interest, affiliate firewall, compliance, and other relevant policies and procedures are also available from the Code of Conduct section of this site. Directors and shareholders' relevant interests are available at https://www.fitchratings.com/site/regulatory. Fitch may have provided another permissible or ancillary service to the rated entity or its related third parties. Details of permissible or ancillary service(s) for which the lead analyst is based in an ESMA-or FCA-registered Fitch Ratings company (or branch of such a company) can be found on the entity summary page for this issuer on the Fitch Ratings website.

In issuing and maintaining its ratings and in making other reports (including forecast information), Fitch relies on factual information it receives from issuers and underwriters and from other sources. Fitch believes to be credible. Fitch conducts a reasonable investigation of the factual information relied upon by it in accordance with its ratings methodology, and obtains reasonable verification of that information from independent sources, to the extent such sources are available for a given security or in a given jurisdiction. The manner of Fitch's factual investigation and the scope of the third-party verification it obtains will vary depending on the nature of the rated security and its issuer, the requirements and practices in the jurisdiction in which the rated security is offered and sold and/or the issuer is located, the availability and nature of relevant public information, access to the management of the issuer and its advisers, the availability of pre-existing third-party verifications such as audit reports, agreed-upon procedures letters, appraisals, actuarial reports, engineering reports, legal opinions and other reports provided by third parties, the availability of independent and competent third-party verification sources with respect to the particular security or in the particular jurisdiction of the issuer, and a variety of other factors. Users of Fitch's ratings and reports should understand that neither an enhanced factual investigation nor any third-party verification can ensure that all of the information flex provide to Fitch and to the market in offering documents and other reports. In issuing its ratings and its reports, Fitch must rely on the work of experts, including independent auditors with respect to financial statements and attorneys with respect to legal and tax matters. Further, ratings and forecasts of financial and other information free motily forward-looking and embody assumptions and predictions about future events that by their nature cannot be verified as facts. As a

The information in this report is provided "as is" without any representation or warranty of any kind, and Fitch does not represent or warrant that the report or any of its contents will meet any of the requirements of a recipient of the report. A Fitch rating is an opinion as to the creditworthiness of a security. This opinion and reports made by Fitch are based on established criteria and methodologies that Fitch is continuously evaluating and updating. Therefore, ratings and reports are the collective work product of Fitch and no individuals, is solely responsible for a rating or a report. The rating does not address the risk of loss due to risks other than credit risk, unless such risk is specifically mentioned. Fitch is not engaged in the offer or sale of any security. All Fitch reports have shared authorship. Individuals is entitled in a Fitch report were involved in, but are not solely responsible for, the opinions stated therein. The individuals are named for contact purposes only. A report providing a Fitch rating is neither a prospectus nor a substitute for the information assembled, verified and presented to investors by the issuer and its agents in connection with the sale of the securities. Ratings may be changed or withdrawn at any time for any reason in the sole discretion of Fitch. Fitch does not provide investment advice of any sort. Ratings are not a recommendation to buy, sell, or hold any security. Ratings do not comment on the adequacy of market price, the suitability of any security for a particular investor, or the tax-exempt nature or taxability of payments made in respect to any security. Fitch receives fees from issuers, insurers, guarantors, other obligors, and underwriters for rating securities. Such fees generally vary from US\$1,000 to US\$15,000 (or the applicable currency equivalent) per issue. In certain cases, Fitch will rate all or a number of issues issued by a particular issuer, for a single annual fee. Such fees are expected to vary from US\$1,000 to US\$1,500,000 (or the appli

For Australia, New Zealand, Taiwan and South Korea only: Fitch Australia Pty Ltd holds an Australian financial services license (AFS license no. 337123) which authorizes it to provide credit ratings to wholesale clients only. Credit ratings information published by Fitch is not intended to be used by persons who are retail clients within the meaning of the Corporations Act 2001.

Fitch Ratings, Inc. is registered with the U.S. Securities and Exchange Commission as a Nationally Recognized Statistical Rating Organization (the "NRSRO"). While certain of the NRSRO's credit rating subsidiaries are listed on Item 3 of Form NRSRO and as such are authorized to issue credit ratings on behalf of the NRSRO (see https://www.fitchratings.com/site/regulatory), other credit rating subsidiaries are not listed on Form NRSRO (the "non-NRSRO") and therefore credit ratings issued by those subsidiaries are not issued on behalf of the NRSRO. However, non-NRSRO personnel may participate in determining credit ratings used by or on behalf of the NRSRO.

Copyright © 2023 by Fitch Ratings, Inc., Fitch Ratings Ltd. and its subsidiaries. 33 Whitehall Street, NY, NY 10004. Telephone: 1-800-753-4824, (212) 908-0500. Fax: (212) 480-4435. Reproduction or retransmission in whole or in part is prohibited except by permission. All rights reserved.