Energy Northwest, Washington and Bonneville Power Administration, Oregon

New Issue Report

Ratings

Long Term Issuer Default Rating AA–

New Issues

Approximately $275,000,000 (Columbia Generating Station) Electric Revenue & Refunding bonds, Series 2019-A and 2019-B (taxable) AA

Outstanding Debt

Details on Page 3

Rating Outlook

Stable

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New Issue Summary

Sale Date: May 8, 2019

Series: 2019A&B

Purpose: Bond proceeds will refund existing Columbia Generating Station debt, fund capex in fiscal 2020 and pay costs of issuance.

Security: Bonneville's payments to Energy Northwest (ENW) for debt service on the bonds are unconditional and are made as an operating expense from the Bonneville Fund.

Analytical Conclusion

The affirmation of the 'AA' Issuer Default Rating on nonfederal debt and the revision of the Outlook to Stable reflect the efforts of Bonneville Power Administration (Bonneville) and its customers to build liquidity and maintain minimum reserves.

While the 10-year timeline to reach the minimum 60-day reserve threshold is considered slow, the proposed reallocation of reserves between the two business lines in fiscal 2019 is expected to bring the power business line relatively near the 60-day minimum while the transmission business line will remain above 60 days.

The downgrade of the implied revenue bond rating and assignment of the IDR for Bonneville are based on the application of Fitch Ratings' new criteria that place greater emphasis on leverage in relation to an entity's overall risk framework. Despite broad, rate-setting flexibility, strong revenues from power and transmission sales across six states, and wholesale customers that exhibit healthy underlying credit quality, Bonneville's current and anticipated leverage is more consistent with the 'AA–' rating. The subsequent withdrawal of Fitch's implied-revenue bond rating is due to the assignment of an IDR, which obviates the need for the implied rating, as the two ratings convey the same assessment of Bonneville's credit quality incorporating all its obligations.

The 'AA' ratings on the nonfederal debt reflect Bonneville's obligation to make those payments ahead of its debt to the U.S. government, and the structural ability to defer federal debt repayments and interest due in the event of insufficient revenues after meeting Bonneville's other obligations, including the nonfederal debt.

Key Rating Drivers

Revenue Defensibility: 'aa'; Geographic and Operational Revenue Diversity

Bonneville's revenue defensibility is very strong. Power sales contracts with 125 customers and Bonneville's dominant role as the regional transmission provider result in long-term revenue security, notwithstanding some degree of renewal risk related to the power-supply contracts. Bonneville establishes its own rates, subject to Federal Energy Regulatory Commission (FERC) review, and adopted a consistent two-year rate-making process. Finally, the purchaser

credit quality of Bonneville's wholesale customers is strong. The largest customers exhibit favorable service-area characteristics and strong financial profiles.

Operating Risk: 'aa'; Hydroelectric Dominant Power Supply: Operating costs are very low, largely due to a predominantly hydroelectric generation fleet. Capital needs relate to reinvestment in the aging power-generation assets and transmission investments across the six-state service area.

Financial Profile: 'aa'; Highly Leveraged; Adequate Total Liquidity: Bonneville's financial profile is very strong, although highly leveraged. Given planned capex and debt issuance, Fitch expects leverage to decline slightly over the next five years, further supporting the ratings. Variability is likely in the short term as a result of variable hydroelectric sales, and is considered in the rating. Liquidity is adequate with the proposed reallocation of reserves and implementation of a financial-reserves policy.

Rating Sensitivities

Higher Leverage: Bonneville's overall leverage is near the upper end of the 'aa' range given its revenue defensibility and operating risk profile assessments. Financial projections indicate that overall leverage should remain flat or trend down slightly. However, sustained leverage that is higher than anticipated could result in downward rating pressure.

Weakened Revenue Defensibility: A potential dilution of revenue defensibility over the medium term, driven by reductions in Bonneville's power customer base during the contract renewal process, could also reduce Bonneville's ability to support existing leverage levels at the current rating.

Credit Profile

Bonneville provides wholesale power to more than 14 million people in the Pacific Northwest through a resource portfolio consisting of low-cost hydropower and nuclear generation. Transmission services are provided to a similar six-state region but to a broader cast of utilities. Bonneville is the largest of four federal power marketing administrations (PMAs) within the U.S. Department of Energy (DOE). Power-supply needs are met through a fleet of hydroelectric projects and one nuclear project. Bonneville's predominantly hydroelectric generation portfolio (86% of total owned capacity) results in hydrology risk and a variable energy supply. Low market-energy prices in the region are exerting competitive pressure on Bonneville to keep rate increases as low as possible and have driven net secondary revenues lower over the past decade.

Revenue Defensibility

Bonneville exhibits very strong revenue source characteristics, as 100% of revenues come from power and transmission services. Bonneville is required by statute to sell power at cost-based rates, with a preference to public utility districts and cooperatives. These 125 publicly and cooperatively owned utilities (Bonneville's preference customers) account for around 87% of power sales and are required to purchase nearly all of their energy from Bonneville pursuant to power sales contracts that extend through 2028. Bonneville and its preference customers are expected to negotiate a contract extension in the next few years. Fitch assumes that many of Bonneville's preference customers will sign long-term contract extensions, providing revenue security for Bonneville's power business line.

Bonneville's transmission business line grew to 26% of overall system revenues in fiscal 2018 from around 16% in fiscal 2008. Transmission customers are a wider group than Bonneville's

Rating History — Bonneville (IDR)

Rating	Action	Outlook/ Watch	Date
AA–	Assigned	Stable	4/30/19

Rating History — Energy Northwest Elec Sys Revs

Rating	Action	Outlook/ Watch	Date
AA	Affirmed	Stable	4/30/19
AA	Affirmed	Negative	8/25/17
AA	Affirmed	Stable	12/9/10
AA	Upgraded	Positive	3/4/09
AA–	Affirmed	Positive	3/9/07
AA–	Downgraded	Stable	3/12/03
AA	Affirmed	RWNeg	9/9/02
AA	Upgraded	Stable	5/3/00
AA–	Downgraded	Stable	8/17/05
AA	Assigned	Stable	9/8/92

Related Research

Fitch Rates Energy Northwest, WA's Electric Rev Bonds 'AA'; Assigns 'AA-' IDR on Criteria Change (April 2019)

Related Criteria

U.S. Public Power Rating Criteria (April 2019)

Rating Criteria for Public-Sector, Revenue-Supported Debt (February 2018)

Outstanding Debt

Energy Northwest (WA) (Columbia Generating Station) Electric Revenue & Refunding Bonds	AA
Energy Northwest (WA) (Columbia Generating Station) Electric Revenue & Refunding Bonds (Taxable)	AA
Energy Northwest (WA) (Columbia Generating Station) Electric Revenue Bonds	AA
Energy Northwest (WA) (Columbia Generating Station) Electric Revenue Bonds (Taxable Build America Bonds - Direct Payment)	AA
Energy Northwest (WA) (Columbia Generating Station) Electric Revenue Bonds (Taxable)	AA
Energy Northwest (WA) (Columbia Generating Station) Electric Revenue Refunding (Taxable) Bonds	AA
Energy Northwest (WA) (Columbia Generating Station) Electric Revenue Refunding Bonds	AA
Energy Northwest (WA) (Columbia Generating Station) Electric Revenue Refunding Bonds (Taxable Build America Bonds)	AA
Energy Northwest (WA) (Columbia Generating Station) Electric Revenue Refunding Bonds (Taxable)	AA
Energy Northwest (WA) (Project1) Electric Revenue Refunding Bonds	AA
Energy Northwest (WA) (Project3) Electric Revenue Refunding Bonds	AA
Energy Northwest (WA) (Project 1) Electric Revenue Refunding Bonds (Taxable)	AA
Energy Northwest (WA) (Project 3) Electric Revenue Refunding Bonds (Taxable)	AA
Idaho Energy Resources Authority (ID) (Bonneville Cooperation Project No. 1) transmission Facilities Revenue Bonds (Taxable)	AA
Idaho Energy Resources Authority (ID) transmission Facilities Revenue Bonds	AA
Lewis County Public Utility District No. 1 (WA) (Cowlitz Falls Hydroelectric Project) Revenue Refunding Bonds	AA
Port of Morrow (OR) (Bonneville Cooperation Project No. 1) transmission Facilities Revenue Bonds	AA
Port of Morrow (OR) (Bonneville Cooperation Project No. 2) transmission Facilities Revenue Bonds (Taxable)	AA
Port of Morrow (OR) (Bonneville Cooperation Project No. 3) transmission Facilities Revenue Bonds (Taxable)	AA
Port of Morrow (OR) (Bonneville Cooperation Project No. 4) transmission Facilities Revenue Bonds (Taxable)	AA
Port of Morrow (OR) (Bonneville Cooperation Project No. 5) transmission Facilities Revenue Bonds (Taxable)	AA

preference customers and include investor-owned utilities and power generators in the region. While transmission customers do not have long-term contracts, Fitch believes this business provides strong revenue defensibility given the monopolistic nature of high-voltage transmission and the absence of excess transmission capacity.

Rate Flexibility

Bonneville establishes its own power and transmission rates, and rate flexibility is viewed as very strong. Bonneville's preference rate is approximately 3.6 cents/kWh in fiscal 2019. Although the FERC reviews and approves Bonneville's rates, regulatory concerns are mitigated as oversight is provided to ensure full cost recovery and revenue sufficient to pay debt service on the nonfederal debt and federal Treasury obligations. Transmission rates are regulated by FERC to further ensure they are nondiscriminatory, as well as just and reasonable.

Bonneville establishes its power and transmission rates for two-year periods. The last rate increase consisted of a 5.4% power rate increase and 0.7% transmission rate decrease effective Oct. 1, 2017 (fiscal 2018). Bonneville released its preliminary indication for the next rate increase of 2.9% power-rate increase and 3.6% transmission rate increase that will become effective Oct. 1, 2019.

However, the rate case is still proceeding and the final adopted increase may be different than the initial indication. The power-rate increase reflects Bonneville's work to decrease O&M expenses, capex related to reinvestment in the federal generation assets, funding of the new financial reserve policy (see below), and assumptions regarding net secondary revenue provided by surplus energy sales to the market. The transmission rate increase primarily reflects increased capital costs.

Purchaser Credit Quality

Bonneville's purchaser credit quality is strong. Power and transmission customers are geographically and operationally diverse, reflecting a service area that extends across Idaho, Oregon, Washington, Wyoming, Nevada, Utah, California and portions of Montana. Bonneville's system accounts for approximately 27% of the electricity sold in the region and 75% of the transmission infrastructure.

The largest power and transmission customers, accounting for approximately 40% of Bonneville's revenues, include Snohomish County Public Utility District No. 1 (AA–/Stable), Seattle City Light (not rated by Fitch), Eugene Water and Electric Board (AA–/Stable), Tacoma (AA–/Stable), Benton County Public Utility District No. 1 (A+/Stable), Cowlitz County Public Utility District No 1 (A/Stable) and Puget Sound Energy, Inc. (BBB+). Each of the municipal utilities exhibit strong revenue defensibility, as evidenced by their independent rate setting, favorable service area characteristics, competitive rates and strong financial profiles.

Reliance on Wholesale Energy Sales

Bonneville relies on uncontracted wholesale energy sales for a portion of its revenue. While this reliance is inherent to the variable nature of its hydroelectric power supply, it creates heightened revenue variability that informs Fitch's assessment of revenue defensibility. For ratemaking and financial planning purposes, Bonneville considers the additional energy production available for sale under average water conditions. These wholesale sales, netted against market purchases made by Bonneville during certain months of the year to shape the output of the federal system, compose net secondary-system revenue.

The revenue risk in this budgeting practice is that revenues can be lower than budget if water conditions are below average. Net secondary revenues have been lower than budgeted in two of the last three years due to below-average water conditions in certain years and depressed market energy prices. These results have been one of the factors behind the decline in financial reserves for the power business over the same timeframe.

Power Supply Contract Term Considerations

Bonneville's power supply contracts expire in 2028, which is well before the final maturity of Bonneville's debt. Fitch's concern regarding the short term of the Bonneville's power supply contracts is partially mitigated by the regional depth of the existing customer base and the likelihood that many of the existing preference customers will elect to resign new contracts. However, Bonneville's ability to offer competitively priced power supply services will be a key factor during the upcoming extension of its power sales contracts, with negotiations expected to occur between 2021 and 2026.

Operating Risk

Bonneville sells energy produced from 31 low-cost hydroelectric plants owned and operated by the U.S. Army Corps of Engineers and the Bureau of Reclamation. The federal hydroelectric projects were constructed between 1941 and 1975. Bonneville has direct-funding agreements with both agencies to pay operating and capex costs. The direct funding of capex allows Bonneville to direct decision-making and prioritize reinvestment in the hydroelectric fleet. Bonneville also markets energy from nonfederal projects, the largest of which is the Columbia Generating Station (CGS), 1,157MW nuclear plant that commenced operation in December 1984. CGS accounts for around 10% of Bonneville's power supply Bonneville's resources, even under low water conditions, are sufficient to meet projected preference customer loads.

Bonneville's very low operating cost burden (at less than 5 cents/kWh) also includes payments related to the residential exchange program. Bonneville is legally required to provide power to meet the residential load within the Pacific Northwest, including the load served by investor-owned utilities. Bonneville makes financial payments to the investor-owned utilities to comply with this obligation.

Operating-Cost Flexibility

The reliance on hydroelectric power for over 80% of power supply reflects a weak operating flexibility, given the dominance of a single fuel type. However, Bonneville's power supply portfolio is predominately carbon free, which positions Bonneville's customers well in terms of efforts aimed at reducing greenhouse-gas emissions. The state of Washington proposed various carbon-tax initiatives but they have all been unsuccessful to date. The portfolio is relatively stable and not expected to change or grow, other than efficiency investments.

Bonneville is required to protect, mitigate and enhance fish-and-wildlife resources to the extent they are affected by federal hydroelectric projects on the Columbia River and its tributaries. Environmental costs are the subject of ongoing litigation and have generally increased over time. These costs are included in Bonneville's power rates for its preference customers. Furthermore, the power sales contracts have a cost-recovery adjustment mechanism that allows for additional rate recovery for fish-related cost increases between rate cases. This is viewed positively given ongoing uncertainty with environmental costs.

Capital Needs

Bonneville's capital planning and management is adequate with capex/depreciation averaging 172% annually over the past five years. However, Bonneville faces the issue of aging infrastructure and delayed capital reinvestment in its hydroelectric fleet and growth needs in the transmission business line. Estimated capex over the next five years is $4.16 billion, with 54%, or around $2.24 billion, occurring in the transmission business line. These amounts do not include approximately $1.2 billion ENW estimates will be needed at CGS through 2030. Although the hydroelectric assets are owned by the Bureau of Reclamation and the Army, Bonneville makes the funding decisions regarding the pace and scope of capital reinvestment.

Bonneville's historical capital-funding practice was to debt-finance nearly all of its capex. In 2018, Bonneville adopted a new leverage policy that will make a modest change to this historical practice and require the transmission business line to use revenue financing for a portion of its capital needs. Bonneville's overall goal is to reduce the debt/asset ratio from 90% to between 75% and 85% by 2028. The initial rate case proposal for 2020–2021 includes $23 million per year in revenue financing for the transmission business line, which is minimal in relation to the total planned capex. No funding is included for the power business line since scheduled amortization is outpacing new debt and the debt/asset ratio is declining. The power-generation business line will continue to debt-finance 100% of its planned capex.

Financial Profile

Bonneville's financial statements, issued as the Federal Columbia River Power System, include the accounts of Bonneville, the federal hydroelectric generating facilities of the Army and the Bureau of Reclamation dispatched by Bonneville, and the operation and maintenance costs of the U.S. Fish and Wildlife Service for the lower Snake River facilities. The statements consolidate the activity of financing corporations that finance transmission assets leased to Bonneville.

Bonneville's consolidated coverage of full obligations is typically modest at around 1.0x but fell below 1.0x in the last three fiscal years. This was due to the practice of repaying nonscheduled principal in advance as part of the regional cooperation debt strategy. Fitch's analysis of Bonneville's IDR focuses on the calculation of coverage for all obligations, including Bonneville's federal obligations.

Debt service coverage (DSC) of the ENW debt is increasing as a result of the regional debt cooperation strategy. DSC, as calculated by Bonneville, increased to over 5.0x as a result of the refunding and restructurings performed for all three ENW projects on principal payments.

Bonneville's total debt is significant at $15 billion, but lower than $16 billion at FYE 2015. Net adjusted debt/adjusted funds available to debt service was 9.7x a decline from 10.7x over the same time period. Even with the sizable capital needs and additional debt, leverage is slowly declining.

Fitch Base Case and Rating Case

Fitch's analysis indicates that Bonneville's financial performance should be stable through the base and rating cases, including variability that can occur on Bonneville's hydroelectric system. Leverage should continue to decline slightly over time. Fitch assumed 0% growth in total wholesale sales in the base case. The rating case includes large declines in total wholesale sales in the first two years of 9.1% and 3.5%, respectively, followed by a recovery to positive sales growth. The rating case imposes a moderate stress case based on Bonneville's historical movement in total sales, which can be large based on hydrological conditions, although the

ultimate impact to revenues will be determined by wholesale market prices at the time. In the rating case, leverage would be elevated in the initial years but return to between 8x and 9x in the later years. Additional assumptions used in both the base and rating cases include Bonneville's planned capex, debt funding of nearly all capex, and rate increases in line with historical levels.

Liquidity

Bonneville's liquidity profile is neutral. Overall cash reserves provided 136 days cash at FYE 2018 and the liquidity cushion was 257 days, including the $750 million line of credit with the U.S. Treasury Department. Cash reserves play a key role in managing aspects of Bonneville's revenue variability related to wholesale energy sales. Bonneville's risk of revenue variability is managed primarily through power-business line cash reserves, which are a subset of the overall reserves. The trajectory and pace of declines in recent years in the power business line's reserves have been a credit concern and resulted in a Negative Outlook placed on the ratings in 2017. The reserves are all comingled in the Bonneville fund and total reserves are healthy but the declines indicate the extent of under-recovery in the power business due to underperformance of net secondary sales and declining preference customer load.

Power-business reserves declined again to $13 million in fiscal 2018 from $105 million in fiscal 2017 and from a high of $395 million two years prior in fiscal 2015. However, two factors result in shoring up the power business line's financial reserve position in fiscals 2019 and 2020.

First, power reserves will receive a one-time boost from the proposed reallocation of $330 million from transmission reserves to the power business in fiscal 2019. The decision stems from an internal study Bonneville performed that concluded an error occurred in prior years regarding the allocations of reserves between the two business lines. Since transmission reserves were very strong, the proposed reallocation should leave the transmission business with continued adequate reserves. Bonneville projects that, with the proposed reallocation, reserves for the power business line could end fiscal 2019 at $288 million, up from $13 million at FYE 2018. Transmission business reserves could end at $207 million (down from $538 million at FYE 2018). Total reserves are still projected to be down from fiscal 2018 ($495 million versus $551 million).

Second, and more importantly for long-term credit quality, Bonneville and its customers worked diligently in 2018 to adopt a financial reserves policy. The policy established a minimum threshold of 60-day reserves for risk at each business line, or approximately $300 million for power and $100 million for transmission. The proposed power rate increase includes funding of $30 million per year in fiscals 2020 and 2021 if power reserves are below the minimum threshold. Transmission reserves are above the threshold, even with the proposed reallocation. Finally, the policy includes a recovery mechanism to replenish reserves in a more rapid manner than the prior cost-recovery adjustment clause.

Debt Profile

Bonneville had approximately $15 billion in outstanding total debt obligations at FYE 2018, including all of its nonfederal obligations, which accounted for 51% of total debt, and is almost entirely fixed-rate. Bonneville has no authority to issue its own debt to the public and has a $7.7 billion statutory limit on the bonds it may issue to the Treasury, complicating capex decisions. Idaho Energy Resources Authority and the Port of Morrow financing structures provide financing for transmission assets while the regional cooperation debt strategy frees up ongoing Treasury capacity.

Bonneville and ENW collectively manage Bonneville's nonfederal and federal obligations to minimize debt costs and maximize access to capital. The regional cooperation debt plan that extends the maturity of outstanding ENW debt (CGS and project Nos. 1 and 3) and uses revenues freed up from not paying debt service costs on those projects prepay, dollar for dollar, higher interest-rate debt to the U.S. Treasury.

While this plan effectively accelerates payment of Bonneville's subordinate-lien obligations by extending the structurally senior ENW debt maturity, it frees up federal borrowing capacity and provides economic benefit to Bonneville's customers, who are the ultimate ratepayers that repay both types of debt.

Financial Summary

($000, Audited Fiscal Years Ended Sept. 30)	2014	2015	2016	2017	2018
Net Adjusted Debt/Adjusted FADS (x)	**9.36**	**10.72**	**11.29**	**10.93**	**9.68**
Net Adjusted Debt Calculation					
Total Current Maturities of Long Term Debt	1,097,829	1,034,515	933,700	1,481,000	1,173,200
Total Long-Term Debt	14,473,801	15,055,336	14,707,700	13,819,400	13,858,800
Total Debt	**15,571,630**	**16,089,851**	**15,641,400**	**15,300,400**	**15,032,000**
+ Capitalized Fixed Charge — Purchased Power	477,734	183,036	268,080	353,760	382,800
– Total Unrestricted Cash	1,223,540	1,186,644	724,400	765,700	839,600
Adjusted FADS for Leverage Calculation					
Total Operating Revenue	3,600,346	3,404,432	3,432,600	3,569,800	3,710,300
Total Operating Expenses	2,540,868	2,483,521	2,608,100	2,743,100	2,765,500
Operating Income	**1,059,478**	**920,911**	**824,500**	**826,700**	**944,800**
+ Depreciation and Amortization	440,524	447,984	471,100	485,000	507,300
+ Interest Income	23,446	15,345	15,400	6,100	6,300
Funds Available for Debt Service	**1,523,448**	**1,384,240**	**1,311,000**	**1,317,800**	**1,458,400**
+ Adjustment for Purchased Power	59,717	22,880	33,510	44,220	47,850
Coverage of Full Obligations (x)	**1.22**	**1.01**	**0.82**	**0.90**	**0.80**
Funds Available for Debt Service	1,523,448	1,384,240	1,311,000	1,317,800	1,458,400
+ Adjustment for Purchased Power	59,717	22,880	33,510	44,220	47,850
Full Obligations Calculation					
Cash Interest Paid	479,528	473,048	575,800	534,240	344,142
Prior Year Current Maturities	754,865	897,829	1,034,515	933,700	1,481,000
Total Annual Debt Service	**1,234,393**	**1,370,877**	**1,610,315**	**1,467,940**	**1,825,142**
+ Adjustment for Purchased Power	59,717	22,880	33,510	44,220	47,850
Liquidity Cushion (Days)	**343**	**347**	**252**	**245**	**257**
Unrestricted Cash (Days)	**213**	**213**	**124**	**124**	**136**
Liquidity Calculation					
+ Total Unrestricted Cash	1,223,540	1,186,644	724,400	765,700	839,600
+ Total Borrowing Capacity	750,000	750,000	750,000	750,000	750,000
Cash Operating Expense Calculation					
Total Operating Expense	2,540,868	2,483,521	2,608,100	2,743,100	2,765,500
– Depreciation and Amortization	440,524	447,984	471,100	485,000	507,300
Cash Operating Expenses	**2,100,344**	**2,035,537**	**2,137,000**	**2,258,100**	**2,258,200**

FADS – Funds available to debt service.
Source: Fitch Ratings, Bonneville Power Administration (OR).

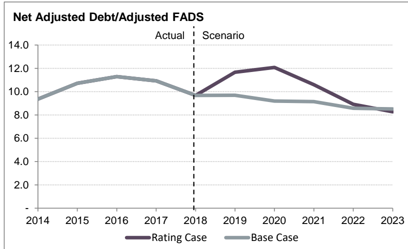
Bonneville Power Administration (OR)

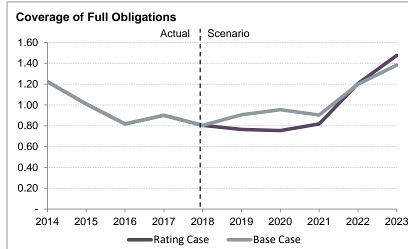
Version 7

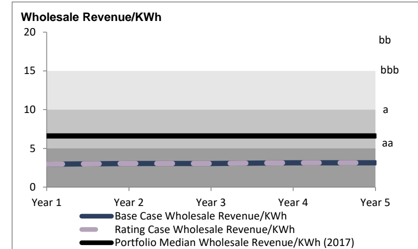
FAST Public Power - Fitch Analytical Stress Test - Scenario Analysis

Analytical Summary:

Fitch's FAST model assumes a non-standard base case of 0% annual growth in total MWh sales as compared to the standard case that indicated 2.6% growth annually based on Bonneville's past 20 years of load trends. The 0% growth scenario is considered more consistent with recent trends in the region and continued energy efficiency gains across the industry. The rating case stress includes declines of 9.1% and 3.5% in Year 1 and Year 2, respectively, followed by a sales recovery. The magnitude of the rating case stress is in line with historical movement that can happen to sales based on hydrological conditions. While leverage in the early years of the rating case are elevated, the recovery in Year 3 through 5 are more indicative of Bonneville's leverage profile through the business cycle.







Key Financial Metrics	Base Case					Rating Case				
	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
Net Adjusted Debt/Adjusted FADS (Leverage)	9.7	9.2	9.1	8.6	8.5	11.7	12.1	10.6	8.9	8.3
Coverage of Full Obligations	0.9	1.0	0.9	1.2	1.4	0.8	0.8	0.8	1.2	1.5
Days Cash & Investments on Hand	107	90	60	93	149	72	7	0	36	109
Debt Service Coverage	0.9	1.0	0.9	1.2	1.4	0.8	0.7	0.8	1.2	1.5

Assumptions	Base Case					Rating Case				
	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
Retail Electric Sales Assumption (% Change)										
Wholesale Electric Sales Assumption (% Change)	0.0%	0.0%	0.0%	0.0%	0.0%	(9.1%)	(3.5%)	7.8%	6.4%	3.6%
Gas Sales Assumption (% Change)										

NOTE: Non-Standard Base Case Used!

Scenario	Base Case					Rating Case				
NOTE: Dollar amounts ($) in thousands	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
Total Retail Electric Revenue ($)	-	-	-	-	-	-	-	-	-	-
Total Wholesale Electric Revenue ($)	2,639,100	2,715,634	2,715,634	2,797,103	2,797,103	2,399,100	2,383,381	2,569,857	2,816,729	2,917,962
Total Gas Revenue ($)	-	-	-	-	-	-	-	-	-	-
All Other Utility Operating Revenue	1,092,624	1,114,476	1,136,766	1,159,501	1,182,691	1,092,624	1,114,476	1,136,766	1,159,501	1,182,691
Non-Utility Operating Revenue	-	-	-	-	-	-	-	-	-	-
Total Operating Revenue	3,731,724	3,830,110	3,852,400	3,956,604	3,979,794	3,491,724	3,497,858	3,706,623	3,976,230	4,100,653
Total Operating Expenses	2,817,620	2,870,782	2,925,008	2,980,318	3,036,735	2,803,115	2,851,268	2,916,446	2,981,437	3,043,626
Operating Income	914,104	959,328	927,392	976,286	943,060	688,609	646,590	790,177	994,793	1,057,027
FADS	1,416,416	1,465,882	1,444,454	1,504,886	1,485,084	1,190,075	1,150,279	1,303,738	1,520,474	1,596,582
Adjustment for Purchased Power	47,850	47,850	47,850	47,850	47,850	43,499	41,996	45,281	48,186	49,918
Adjustment for Transfer / PILOT / Dividend as O&M Expense	-	-	-	-	-	-	-	-	-	-
Adjusted FADS (Coverage of Full Obligations)	1,464,266	1,513,732	1,492,304	1,552,736	1,532,934	1,233,574	1,192,275	1,349,020	1,568,660	1,646,499
Adjusted FADS (Leverage)	1,464,266	1,513,732	1,492,304	1,552,736	1,532,934	1,233,574	1,192,275	1,349,020	1,568,660	1,646,499
Operating Income/Net Income	914,104	959,328	927,392	976,286	943,060	688,609	646,590	790,177	994,793	1,057,027
Proceeds from Issuance of Debt	698,000	826,000	830,000	839,000	876,000	698,000	826,000	1,110,518	839,000	876,000
Principal Payments on Total Long Term Debt	1,230,600	1,210,500	1,286,700	935,000	747,700	1,230,600	1,210,500	1,286,700	935,000	747,700
Cash Interest Paid	338,045	327,547	317,918	311,591	311,961	338,045	327,547	317,918	318,014	318,383
Construction / Acquisition of Utility Capital Assets	698,000	849,000	853,000	862,000	899,000	698,000	849,000	853,000	862,000	899,000
Transfers Out	-	-	-	-	-	-	-	-	-	-
Net Increase (Decrease) in Cash & Cash Equivalents	(157,937)	(99,905)	(186,829)	231,463	396,236	(383,432)	(412,643)	(43,525)	243,547	503,781
Unrestricted Funds (Cash & Liquid Investments)	681,663	581,758	394,929	626,392	1,022,628	456,168	43,525	0	243,547	747,328
Restricted Funds (Debt Service or Debt Service Reserve)	-	-	-	-	-	-	-	-	-	-
Total Debt	14,499,400	14,114,900	13,658,200	13,562,200	13,690,500	14,499,400	14,114,900	13,938,718	13,842,718	13,971,018
Adjustment for Purchased Power	382,800	382,800	382,800	382,800	382,800	347,988	335,965	362,251	385,486	399,340
Adjustment for Operating Lease Payments	-	-	-	-	-	-	-	-	-	-
Fitch Adjusted Net Pension Liability	-	-	-	-	-	-	-	-	-	-
Net Adjusted Debt (Adj. for Purchased Power) + Adjusted NPL	14,200,537	13,915,942	13,646,071	13,318,608	13,050,672	14,391,220	14,407,340	14,300,969	13,984,657	13,623,030
Total Annual Debt Service	1,568,645	1,538,047	1,604,618	1,246,591	1,059,661	1,568,645	1,538,047	1,604,618	1,253,014	1,066,083

Interpretive Notes:

The FAST scenario results are not a forecast. The results are intended only to illustrate performance under a given set of assumptions made by Fitch for a specific issuer that fall within the range of performance that is consistent with a stable rating. The rating case scenario is intended to depict a rating sensitivity and suggests the level of change in performance under stress since an issuer may elect to respond to lower sales in multiple ways. Actual metrics may vary from those depicted in the FAST.

Key Definitions

Terms	Definition	Significance
Issuer Default Rating (IDR)	An expression of overall enterprise risk and relative vulnerability to default.	Provides an opinion of the relative ability of an entity to meet financial commitments, expressed as an ordinal measure of credit risk.
Net Adjusted Debt	Adjusted debt – unrestricted cash – funds restricted for debt service	Provides an inclusive evaluation of long-term liabilities offset by funds available for debt service.
Adjusted FADS	EBITDA + interest income + 30% of purchase power expense + operating lease expense – transfers/distributions + pension expense	Provides an indication of cash flow available for the payment of debt service, adjusting for purchased power, operating lease and pension obligations.
Net Adjusted Debt to Adjusted FADS	Net adjusted debt / adjusted FADS	Provides an indication of net total leverage position against available operating cash flow.
Full Obligations	Cash interest paid + scheduled long-term principal payments + 30% of purchase power expense	Provides an indication of inclusive fixed and debt service obligations.
Coverage of Full Obligations	(EBITDA + interest income + 30% of purchase power expense + operating lease expense – transfers/distributions) / full obligations	Provides an indication of the relative cushion of operating cash flow to fixed charges.
Base Case	The expected forward-looking case in the current macro-economic environment.	Provides the analytical starting point in the forward-looking analysis, and also informs the rating case.
Rating Case	The potential performance under a common set of assumptions.	Illustrates how cycles affect individual issuers differently, and informs the level of rating stability and credit resiliency.

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