




MEMORANDUM

TO: Mayor and City Council Members

CC: Marc A. Ott, City Manager

FROM: Larry Weis, General Manager 

DATE: August 8, 2014

SUBJECT: Transfer from Working Capital Reserves to Strategic Reserves

As discussed at the last Council Work Session on August 5, I am transmitting to you several documents pursuant to your requests and other pertinent information.

Austin Energy produced the worksheet (Attachment 4) with the best available data from our industry peers in public power through direct contact, rating agency reports and Public Power Association sources. Some of this data is a year or two old, however, for comparison purposes still valid and familiar to you from our rates work and prior discussions.

When comparing public power utilities, it is very important that those comparisons are with similar size systems that have retail customers and, most importantly, own and operate a large generation fleet. Only utilities with these attributes can accurately be compared to Austin Energy.

Also attached is a recent public power peer study from Fitch Ratings and an explanation of methodology for ratings for public power from Moody's Rating Services. I would bring your attention starting on page 12 in the Fitch report and page 20 in the Moody's.

Austin Energy will be prepared to discuss this topic at the next meeting of the Council Committee on Austin Energy on August 14. We are also prepared to schedule the item requesting approval of the transfers before the end of this fiscal year to assure that we have audited financials that depict Austin Energy in the best possible financial condition.

Please contact me if you have any questions.

Attachments:

1. Slide presented at August 4, 2014 Council Work Session
2. Slide presented at April 3, 2014 meeting of the Council Committee on Austin Energy
3. Slide presented at March 7, 2012 Council Work Session on Rates
4. Internal Reserves Worksheet used during Rate Review
5. Fitch Ratings US Public Power Peer Study, June 2014
6. Moody's US Municipal Utility Revenue Debt, July 2014



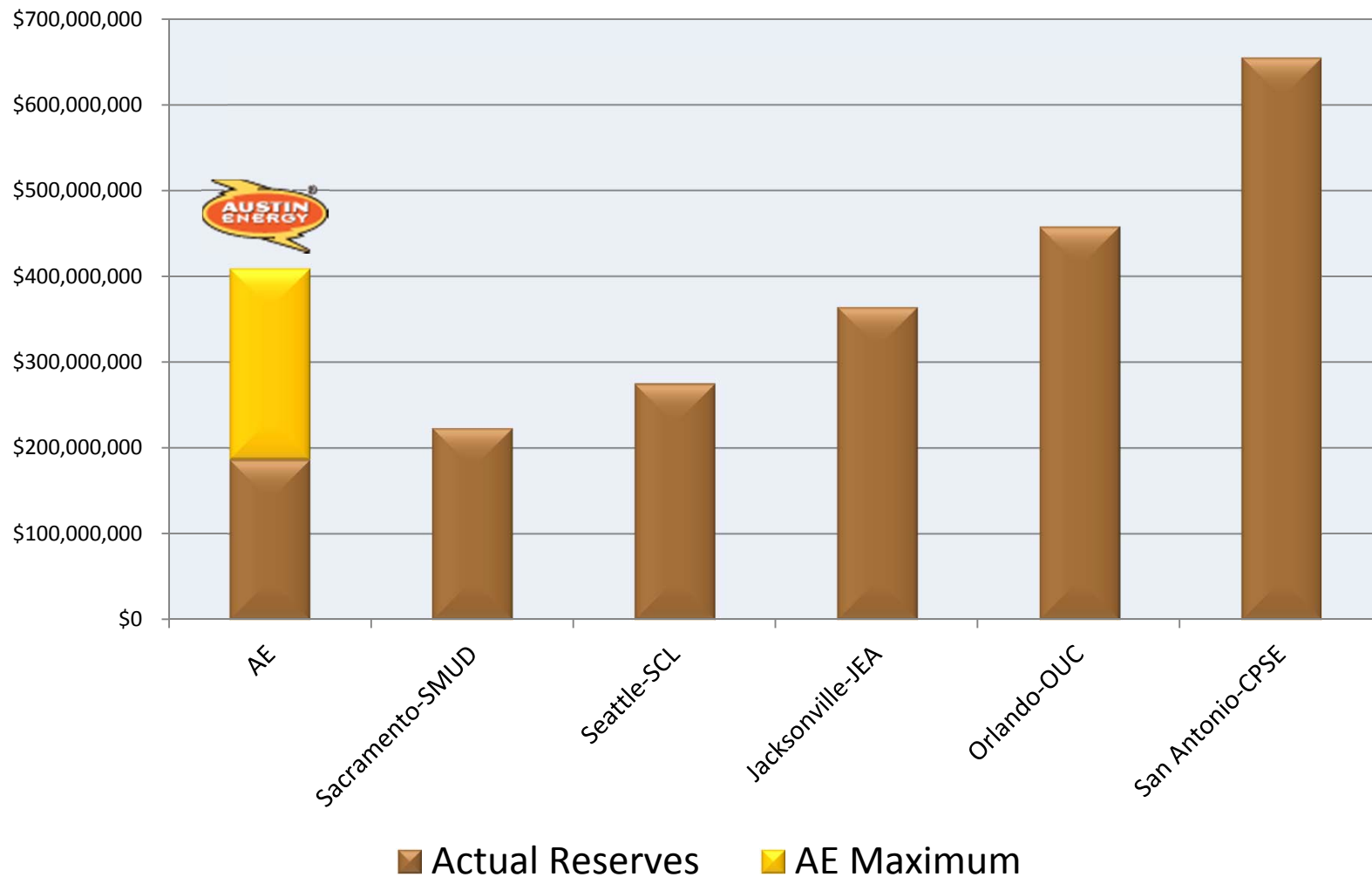
Cash Reserve Analysis

* In compliance		\$ in Millions		
Reserve Name (in order of funding)	Basis for Level of Funding	June 2014	After 2014 Transfer	Minimum Maximum
*Working Capital (Operating Cash)	Minimum requirement - 45 days of O&M less fuel & purchased power	\$ 102	\$ 72	\$ 60 min
*Strategic Reserve-Emergency	Minimum requirement -60 days of O&M less fuel & purchased power	80	80	80 min
Strategic Reserve-Contingency	Minimum requirement- 60 days of O&M less fuel & purchased power	27	57	80 min
Repair and Replacement	Maximum balance-1/2 of annual depreciation expense	0	0	75 max
Strategic Reserve-Rate Stabilization	Maximum balance-90 days of power supply costs	0	0	118 max
Non-Nuclear Decommissioning Reserve	Funding set aside over a minimum of 4 years prior to plant closure	0	0	56 min
Total Cash and Reserves		\$ 209	\$ 209	\$ 469
Days of Cash on Hand (DCOH)	Daily spending \$3.8 million Rating criteria minimum is 150 DCOH	54	54	122

08/05/2014

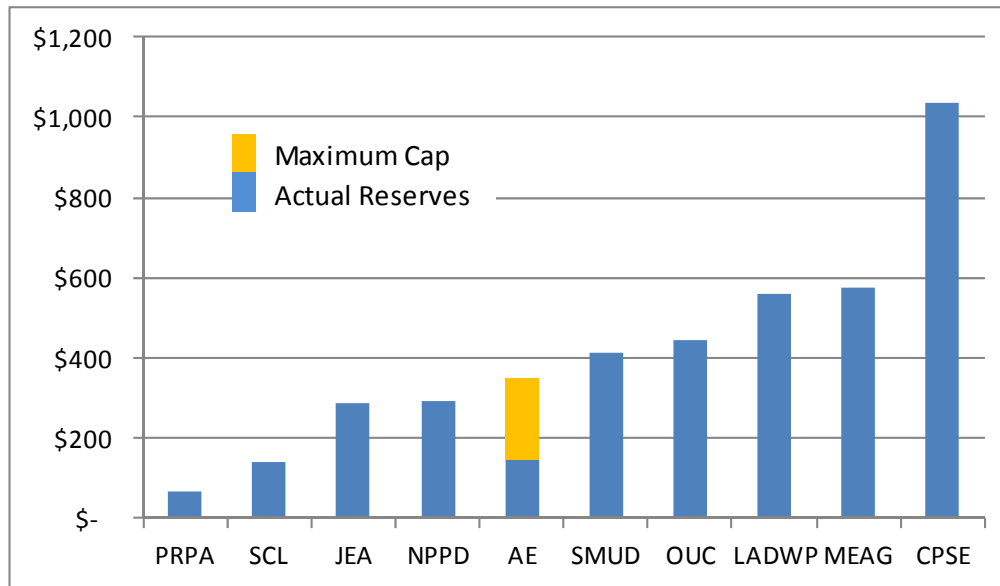


2012 Cash/Reserve Comparison

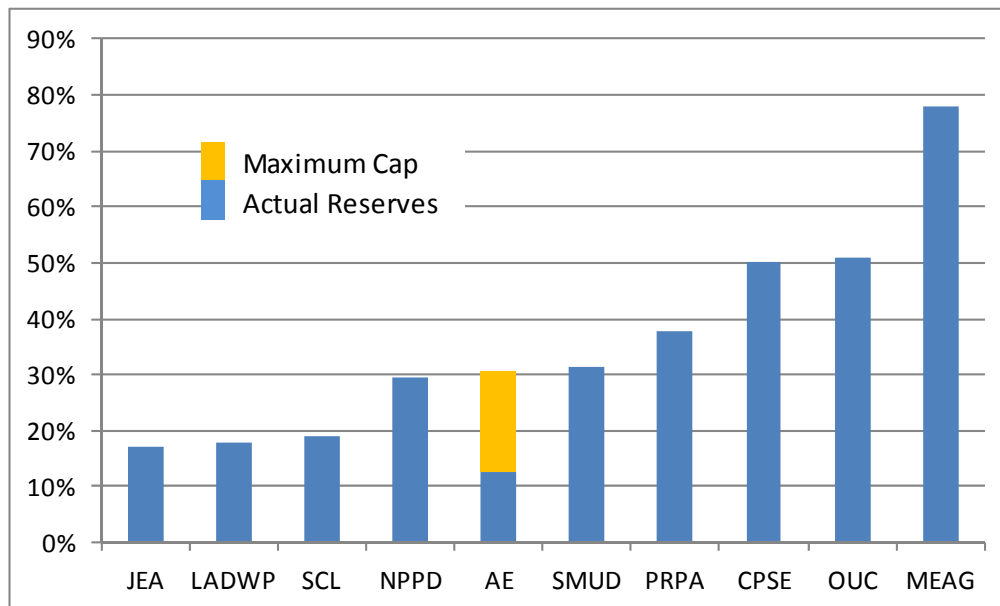




Reserve Fund Comparison



Reserve Funds
(\$ in millions)



Reserve Fund
as % of Revenues

Worksheet used during Rate Review:

Utility	Generation	Operating Revenue	Cash & Adjusted Reserves	Percent of Reserves
Austin Energy (AE) - Proposed	Generating	\$1,145,071,134	\$432,792,984	38%
Austin Energy (AE) - FY 2010	Generating	\$1,147,676,000	\$344,999,000	30%
Tacoma Public Utilities	Generating	\$366,853,260	\$377,090,585	103%
Snohomish Public Utility District	Generating	\$572,930,000	\$558,213,000	97%
Imperial Irrigation District (IID)	Generating	\$499,998,553	\$398,891,208	80%
Orlando Utilities Commission	Generating	\$863,814,000	\$529,512,000	61%
Nebraska Public Power District (NPPD)	Generating	\$925,141,000	\$472,885,000	51%
Santee Cooper	Generating	\$1,894,902,000	\$967,780,000	51%
Salt River Project (SRP)	Generating	\$2,701,613,000	\$1,169,834,000	43%
CPS Energy	Generating	\$1,930,875,000	\$828,715,000	43%
Sacramento Municipal Utility District (SMUD)	Generating	\$1,323,288,000	\$551,882,000	42%
Jacksonville Electric Authority (JEA)	Generating	\$1,909,776,000	\$676,018,000	35%
Omaha Public Power District	Generating	\$986,350,000	\$327,222,000	33%
Los Angeles Department of Water & Power	Generating	\$3,235,193,000	\$930,056,000	29%
Seattle City Light	Generating	\$732,977,819	\$197,115,141	27%
Memphis Light, Gas and Water Division	Non-generating	\$1,705,513,000	\$354,521,000	21%
Clark Public Utility District	Generating	\$497,468,000	\$85,869,000	17%
Nashville Electric Service	Non-generating	\$1,063,155,000	\$142,480,000	13%

August 2014: Austin Energy's percent of Reserves is currently 14%

U.S. Public Power Peer Study

June 2014



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Inside	Page
Overview	2
2013 Performance Highlights.....	2
Excel Addendum	2
What's New?	2
Utility Systems Included in Report	3
Wholesale Utilities	3
Retail Systems.....	3
Rural Electric Cooperatives.....	3
Commentary	3
Medians Are Not Targets	3
Comments Welcome	3
NERC Regions	4
Public Power Operating Profiles	5
Retail Electric Trends.....	9
Wholesale Electric Trends	11
Financial Ratios by Rating Category.....	12
Retail Systems.....	12
All Wholesale Systems (Includes G&T Cooperatives)	15
G&T Cooperative Systems.....	17
Wholesale Systems (Excludes G&T Cooperatives).....	18
Financial Summary Glossary of Terms	19
Ratio Definitions	20

Summary

- This report highlights the financial performance of Fitch-rated public power utilities.
- The report utilizes nine financial ratios that are calculated from the most recent annual audits.
- The ratios are presented by utility type, rating category and region.
- A utility's financial measures, relative to Fitch-designated regional and national peer groups, constitute an important component of Fitch's credit analysis.

Overview

Fitch Ratings presents the 2014 edition of its annual "U.S. Public Power Peer Study." This report compares the recent financial performance of wholesale and retail public power systems, as well as rural electric cooperatives. The ratios highlighted in this report are some of the primary financial calculations used in comparing utility systems in Fitch's committee process, and can be used by market participants to assist in making their own comparisons. It is important to note that financial metrics represent only one key component, among others, in Fitch's utility credit analysis. To review Fitch's full public power criteria, please see the report, "U.S. Public Power Rating Criteria," dated March 18, 2014.

The U.S. Public Power Peer Study is a point-in-time assessment of Fitch-rated public power utilities. The ratios for each issuer are determined using audited information. While more than half of the audits used in this study are dated Dec. 31, 2013, different audit dates may skew the distribution of the ratios.

Also, financial ratios and metrics detailed in the report may occasionally differ from those reported in new issue and full rating reports. This can be a result of adjustments made by Fitch during the rating review process to reflect additional information received from the issuer, as well as circumstances unique to the credit. In each case, Fitch seeks to highlight these adjustments for the benefit of the reader in the reports and press releases it publishes during the rating process.

2013 Performance Highlights

- Debt service coverage for wholesale systems reversed its downward trend, while coverage for retail systems weakened.
- Cash on hand medians remained relatively stable for wholesale and retail systems, affirming strong liquidity throughout the sector.
- The ratio of capex to depreciation remained consistent with the lower levels reported since 2011 for most systems. This trend, together with increased cash on hand, likely reflects slower growth and the deferral of certain capex.
- Leverage metrics remained relatively stable for both retail and wholesale systems. However, leverage medians for 'A' wholesale rated systems and 'AA' systems converged slightly.

Excel Addendum

Fitch has released the peer comparison tables in spreadsheet form to improve the peer study's use as a tool for investors and other market participants. In this year's release of the Excel addendum, financial ratios and metrics for prior fiscal years (2009–2012) and the current fiscal year will again be included to move beyond a point-in-time comparison of utilities and allow for an accessible review of historical trends.

In an effort to make the Excel addendum as useful and timely as possible, Fitch began updating the addendum in December, with audited figures from issuers whose fiscal years end between Jan. 31 and June 30. The remaining issuers are updated during the regular production of the peer study and addendum in early June, as usual.

What's New?

This year's edition of the addendum again features the Public Power Dashboard, which provides a system overview, including key rating, operational, and financial information for each of the public power and cooperative issuers included in the peer study. The Dashboard also provides users the ability to compare trends in operational and financial data between two systems, and financial metrics against rating category medians.

The addendum also features an updated dynamic charting application that allows the user to generate a quick graphic representation of how a utility's selected financial metrics compare with the respective medians and offers an updated tool for comparing a utility's key financial metrics to median calculations on a notch-specific rating basis for comparable entities rated within the same rating category (i.e. AA, A, BBB), and against the entire portfolio of Fitch-rated issuers.

Utility Systems Included in Report

The majority of utility systems rated by Fitch's public power group fall into three categories: wholesale systems, retail systems, and generation and transmission (G&T) cooperative systems. The following is a brief description of each of the sectors.

Wholesale Systems

Wholesale public power systems represent utilities whose revenues are primarily derived from sales to municipally owned retail power systems, and are typically organized as joint action agencies (JAAs). The number of members in JAAs can vary from three (Northern Illinois Municipal Power Agency) to more than 100 (American Municipal Power). Additionally, JAAs may be organized to own one generating unit or a diverse portfolio of resources. Wholesale providers that are not organized as JAAs, including state or federally owned suppliers, are also included in this category.

Retail Systems

Retail utility systems derive the majority of their revenues from sales to end-user customers. Some retail systems, typically larger entities, own and operate generating facilities to meet system power demands, while others receive contractual power supply from wholesale suppliers.

Rural Electric Cooperatives

G&T Cooperatives

G&T cooperatives typically provide wholesale power supply and transmission services to their member distribution cooperatives. G&T revenues are primarily derived from sales and services provided to members, but may also include payments from third-party market participants. G&T cooperatives are generally organized as not-for-profit entities that operate for the benefit of their owner members.

Metrics for G&T cooperatives are included in the calculation of medians for wholesale systems, and are also presented separately in this report.

Distribution Cooperatives

Distribution cooperatives sell power to their owner members (or end-user customers), and are included in the retail category.

Commentary

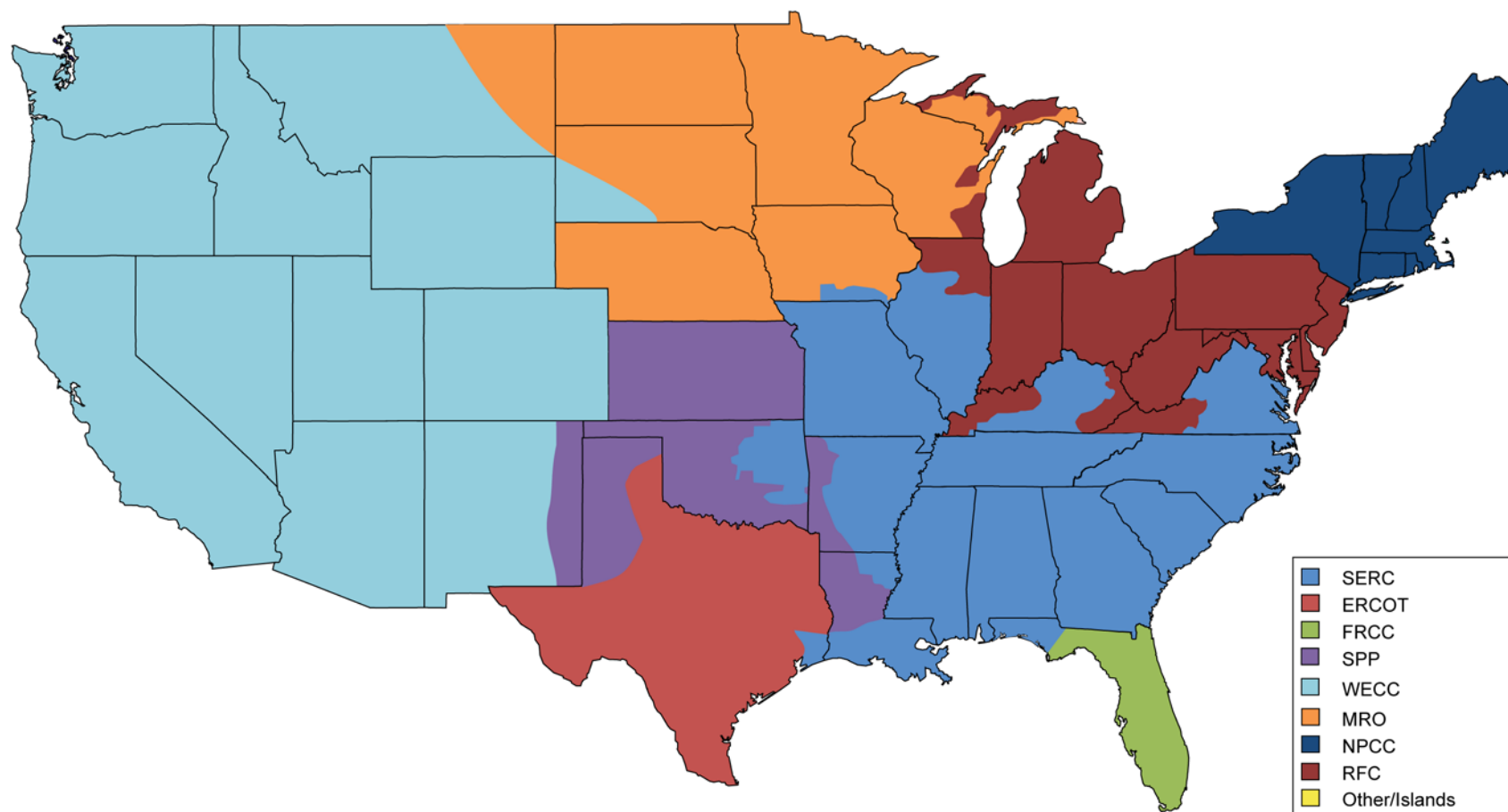
Medians Are Not Targets

While the peer study includes median calculations for financial ratios by rating category, these should not be construed as targets for specific ratios or ratings. The medians reflect a single point in time, may not reflect relevant adjustments, and in many instances are based on a small sampling of public power issuers.

Comments Welcome

As always, Fitch welcomes comments, ideas and suggestions from users to improve the value of the U.S. Public Power Peer Study.

NERC Regions



NERC – North American Electric Reliability Corporation. SERC – Southeastern Electric Reliability Council. ERCOT – Electric Reliability Council of Texas. FRCC – Florida Reliability Coordinating Council. SPP – Southwest Power Pool. WECC – Western Electricity Coordinating Council. MRO – Midwest Reliability Organization. NPCC – Northeast Power Coordinating Council. RFC – Reliability First Corporation. Other Islands – Alaska, Guam, Puerto Rico, and U.S. Virgin Islands. Note: NERC regions are shown within U.S. geographical boundaries only.
Source: Fitch and NERC.

Public Power Operating Profiles

Issuer	Rating	Outlook/Watch	Type	Self-Regulated	Primary Fuel Exposure	Total Debt 2013 (\$000)	Total Members/ Wholesale Customers ^a	Total Retail Customers ^b
Reliability First Corporation (RFC)								
Buckeye Power Inc., OH	A	RO: Negative	G&T Coop	Yes	Coal	1,550,666	25	390,000
Delaware Municipal Electric Corporation	A-	RO: Positive	Wholesale	Yes	Gas	63,914	9	64,000
Dover Electric Revenue Fund, DE	AA-	RO: Stable	Retail	Yes	Gas	26,110	—	24,254
Indiana Municipal Power Agency	A+	RO: Stable	Wholesale	Yes	Coal	1,326,702	59	190,020
Old Dominion Electric Cooperative, VA	A	RO: Stable	G&T Coop	No (FERC)	Coal/Nuclear	777,622	11	550,000
Electric Reliability Council of Texas (ERCOT)								
Austin Electric, TX	AA-	RO: Stable	Retail	Yes	Coal/Nuclear	1,400,255	—	430,582
Boerne Utility System, TX	A	RO: Stable	Retail	Yes	Coal	43,050	—	14,627
Brazos Electric Power Cooperative, TX	A	RO: Stable	G&T Coop	Yes	Gas	2,377,147	16	555,084
Brownsville Public Utilities Board, TX	A+	RO: Negative	Retail	Yes	Gas	348,761	—	46,730
Bryan Utilities City Electric System, TX	A+	RO: Stable	Retail	Yes	Coal/Gas	192,035	—	32,893
Bryan Utilities Rural Electric System, TX	A+	RO: Stable	Retail	Yes	Coal/Gas	13,680	—	16,446
CoServ Electric, TX	AA-	RO: Stable	Retail	Yes	Gas	548,062	—	176,278
Floresville Electric Light & Power System, TX	AA-	RO: Stable	Retail	Yes	Coal/Nuclear	22,649	—	14,685
Garland Electric Fund, TX	AA-	RO: Stable	Retail	Yes	Coal	352,089	—	69,126
Golden Spread Electric Cooperative, TX	A	RO: Stable	G&T Coop	No (FERC)	Gas	610,953	16	227,000
Granbury Municipal Utilities, TX	A+	RO: Stable	Retail	Yes	Coal	17,818	—	3,223
Guadalupe Valley Electric Cooperative Inc., TX	AA-	RO: Stable	Retail	Yes	Coal	191,312	—	71,164
Lower Colorado River Authority — Consolidated	A	RO: Stable	Wholesale	Yes	Coal	3,798,300	43	619,125
New Braunfels Utilities, TX	AA	RO: Stable	Retail	Yes	Coal	32,404	—	32,404
Pedernales Electric Cooperative Inc., TX	AA-	RO: Stable	Retail	Yes	Coal	686,714	—	256,072
Sam Rayburn Municipal Power Agency, TX	BBB+	RO: Stable	Wholesale	Yes	Coal	121,162	3	11,346
San Antonio City Public Service, TX (CPS Energy)	AA+	RO: Stable	Retail	Yes	Coal	5,484,662	—	735,801
San Miguel Electric Cooperative, TX	A-	RO: Stable	G&T Coop	Yes	Coal	214,736	2	—
Seguin Utility Fund, TX	A+	RO: Stable	Retail	Yes	Coal	21,082	—	8,299
South Texas Electric Cooperative Inc.	A-	RO: Stable	G&T Coop	Yes	Coal	974,468	8	252,467
Texas Municipal Power Agency	A+	RO: Stable	Wholesale	Yes	Coal	804,343	4	165,863
Florida Reliability Coordinating Council (FRCC)								
Florida Municipal Power Agency — All-Requirements Project	A+	RO: Stable	Wholesale	Yes	Gas	1,228,222	14	269,486
Fort Pierce Utilities Authority, FL	A+	RO: Stable	Retail	Yes	Gas	199,367	—	27,630
Gainesville Regional Utilities, FL	AA-	RO: Stable	Retail	Yes	Coal	974,795	—	92,907
Jacksonville Beach Combined Utility Funds, FL	AA-	RO: Stable	Retail	Yes	Gas	31,330	—	30,446
JEA — Electric System and Bulk Power Supply System, FL	AA	RO: Stable	Retail	Yes	Coal	2,909,524	—	426,772
Kissimmee Utility Authority, FL	AA-	RO: Stable	Retail	Yes	Gas	208,681	—	64,007
Lakeland Electric Utility, FL	AA-	RO: Stable	Retail	Yes	Gas	489,417	—	120,460
Leesburg Electric System, FL	A+	RO: Stable	Retail	Yes	Gas	36,340	—	22,689
Ocala, FL Combined Utility Funds	AA-	RO: Stable	Retail	Yes	Gas	149,285	—	50,769
Orlando Utilities Commission, FL	AA	RO: Stable	Retail	Yes	Coal	1,464,910	—	229,905
Reedy Creek Improvement District — Utility Fund, FL	A	RO: Stable	Retail	Yes	Gas	290,680	—	1,348
Tallahassee Electric Fund, FL	AA-	RO: Stable	Retail	Yes	Gas	605,524	—	143,969
Vero Beach Electric System, FL	A+	RO: Stable	Retail	Yes	Gas	44,130	—	34,308
Winter Park Electric Services Fund, FL	AA-	RO: Stable	Retail	Yes	Coal/Gas	68,437	—	14,479

^aTotal Members/Wholesale Customers – Most recent figures available; some figures may be estimated. ^bTotal Retail Customers – Figures for wholesale systems represent retail customers served by the members; most recent data available; some figures may be estimated. G&T – Generation and transmission. FERC – Federal Energy Regulatory Commission. *Continued on next page.*
Source: Fitch Ratings.

Public Power Operating Profiles (Continued)

Issuer	Rating	Outlook/Watch	Type	Self-Regulated	Primary Fuel Exposure	Total Debt 2013 (\$000)	Total Members/ Wholesale Customers ^a	Total Retail Customers ^b
Midwest Reliability Organization (MRO)								
Basin Electric Power Cooperative, ND	A+	RO: Stable	G&T Coop	Yes	Coal	4,029,432	134	—
Batavia Electric Fund, IL	A-	RO: Stable	Retail	Yes	Coal	25,065	—	10,866
Big Rivers Electric Corp., KY	BB	RO: Negative	G&T Coop	No	Coal	853,086	3	112,500
Central Iowa Power Cooperative	A	RO: Stable	G&T Coop	Yes	Coal	338,305	13	133,710
East Kentucky Power Cooperative	BBB+	RO: Stable	G&T Coop	No	Coal	2,777,845	16	522,523
Great River Energy, MN	A-	RO: Stable	G&T Coop	Yes	Coal	2,757,716	28	650,000
Illinois Municipal Electric Agency	A+	RO: Stable	Wholesale	Yes	Coal	1,215,675	32	162,485
Minnesota Municipal Power Agency, MN	A	RO: Stable	Wholesale	Yes	Gas	299,803	11	60,101
Municipal Energy Agency of Nebraska	A	RO: Stable	Wholesale	Yes	Coal	191,257	68	124,006
Rochester Public Utilities, MN	AA-	RO: Stable	Retail	Yes	Coal	123,343	—	50,382
Southern Illinois Power Cooperative	BBB	RO: Stable	G&T Coop	Yes	Coal	687,630	7	82,391
Western Minnesota Municipal Power Agency	AA-	RO: Stable	Wholesale	Yes	Coal	253,232	61	153,300
WPPI Energy (Wisconsin Public Power Inc.)	A+	RO: Stable	Wholesale	Yes	Coal	525,378	51	199,300
Northeast Power Coordinating Council (NPCC)								
Connecticut Municipal Electric Energy Cooperative	A+	RO: Stable	Wholesale	Yes	Gas	139,886	5	72,588
Hydro-Quebec	AA-	RO: Negative	Retail	Yes	Hydro	44,500,000	—	4,141,990
Long Island Power Authority, NY	A-	RO: Negative	Retail	Yes	Gas	10,143,744	—	1,100,000
Massachusetts Municipal Wholesale Electric Company — Consolidated	A+	RO: Stable	Wholesale	Yes	Nuclear	240,020	28	399,487
New York Power Authority	AA	RO: Stable	Wholesale	Yes	Hydro	2,910,000	—	1,057
Vermont Electric Cooperative, VT	BBB+	RO: Stable	Retail	No	Purchased	69,494	—	38,257
Southern Electric Reliability Council (SERC)								
Arkansas Electric Cooperative Corporation	A+	RO: Stable	G&T Coop	Yes	Coal	1,003,118	17	498,000
Associated Electric Cooperative Inc., MO	AA-	RO: Stable	G&T Coop	Yes	Coal	1,972,144	51	875,000
Bristol Utilities Authority, VA	A-	RO: Stable	Retail	Yes	Coal	41,604	—	17,461
Chattanooga Electric Power Board — Electric System, TN	AA	RO: Stable	Retail	Yes	Coal	284,160	—	173,418
City of Greenville (NC)	A+	RO: Stable	Retail	Yes	Coal/Nuclear	116,673	—	64,362
Concord Utility Funds, NC	AA	RO: Stable	Retail	Yes	Coal	92,836	—	28,062
Greer Commission of Public Works, SC	A+	RO: Stable	Retail	Yes	Nuclear	86,680	—	18,291
Memphis Light, Gas & Water Division — Electric Division, TN	AA+	RO: Stable	Retail	Yes	Coal	691,972	—	422,884
Municipal Electric Authority of Georgia	A+	RO: Stable	Wholesale	Yes	Coal/Nuclear	6,177,576	48	308,000
Municipal Gas Authority of Georgia	A+	RO: Stable	Wholesale	Yes	Gas	432,819	78	225,828
Nashville Electric Service, TN	AA+	RO: Stable	Retail	Yes	Coal	555,385	—	367,484
North Carolina Eastern Municipal Power Agency	A-	RO: Stable	Wholesale	Yes	Nuclear/Coal	2,094,755	32	269,000
North Carolina Electric Membership Corporation	A-	RO: Stable	G&T Coop	Yes	Nuclear	1,238,517	25	967,551
North Carolina Municipal Power Agency No. 1	A	RO: Stable	Wholesale	Yes	Nuclear	1,525,042	19	162,980
Oglethorpe Power Corporation, GA	A	RO: Negative	G&T Coop	Yes	Coal/Gas	7,386,188	38	1,800,000
Paducah Power System, KY	A-	RO: Stable	Retail	Yes	Coal/Gas	161,445	—	22,374
Piedmont Municipal Power Agency, SC	A-	RO: Stable	Wholesale	Yes	Nuclear	1,054,175	10	99,856
PowerSouth Energy Cooperative and Subsidiaries, AL	A-	RO: Stable	G&T Coop	Yes	Coal	1,365,049	20	423,783
Sikeston Board of Municipal Utilities, MO	BBB+	RO: Stable	Retail	Yes	Coal	121,743	—	9,197
South Carolina Public Service Authority (Santee Cooper)	AA-	RO: Negative	Wholesale	Yes	Coal	6,803,888	—	900,842
South Mississippi Electric Power Association	A-	RO: Stable	G&T Coop	Yes	Gas	1,165,868	11	415,000
Tennessee Valley Authority	AAA	RO: Stable	Wholesale	Yes	Coal	24,779,000	155	—

^aTotal Members/Wholesale Customers – Most recent figures available; some figures may be estimated. ^bTotal Retail Customers – Figures for wholesale systems represent retail customers served by the members; most recent data available; some figures may be estimated. G&T – Generation and transmission. FERC – Federal Energy Regulatory Commission. *Continued on next page.*

Source: Fitch Ratings.

Public Power Operating Profiles (Continued)

Issuer	Rating	Outlook/Watch	Type	Self-Regulated	Primary Fuel Exposure	Total Debt 2013 (\$000)	Total Members/ Wholesale Customers ^a	Total Retail Customers ^b
Southwest Power Pool (SPP)								
Grand River Dam Authority, OK	A	RO: Stable	Wholesale	Yes	Coal	820,449	25	—
Kansas City Board of Public Utilities, KS	A+	RO: Stable	Retail	Yes	Coal	493,123	—	63,000
Lincoln Electric System, NE	AA	RO: Stable	Retail	Yes	Coal	700,583	—	131,927
Lubbock Power & Light Fund, TX	A+	RO: Stable	Retail	Yes	Coal	129,467	—	101,165
Nebraska Public Power District	A+	RO: Stable	Wholesale	Yes	Coal	1,969,829	76	89,604
Oklahoma Municipal Power Agency	A	RO: Stable	Wholesale	Yes	Coal/Gas	744,045	39	113,291
Springfield Public Utility, MO	AA	RO: Stable	Retail	Yes	Coal	735,715	—	110,587
Western Farmers Electric Cooperative, OK	A-	RO: Stable	G&T Coop	Yes	Coal	821,155	23	281,209
Western Electric Coordinating Council (WECC)								
Alameda Municipal Power — Electric Services, CA	A+	RO: Stable	Retail	Yes	Geo/Hydro	31,147	—	34,405
Anaheim Electric Utilities Fund, CA	AA-	RO: Stable	Retail	Yes	Coal	741,670	—	115,418
Benton CO Public Utility District No. 1, WA	A+	RO: Stable	Retail	Yes	Hydro	59,391	—	47,710
Boise Kuna Irr Dist ADA and Canyon Counties (ID)	A-	RO: Stable	Retail	Yes	Hydro	20,177	—	4,040
Bonneville Power Administration, WA	AA	RO: Stable	Wholesale	Yes	Hydro	15,013,366	142	—
Bountiful Light and Power, UT	AA-	RO: Stable	Retail	Yes	Coal/Hydro	14,655	—	16,689
Chelan CO Public Utility District No. 1 — Consolidated, WA	AA+	RO: Stable	Retail	Yes	Hydro	829,098	—	48,854
Clark County Public Utility District — Electric System, WA	A+	RO: Stable	Retail	Yes	Hydro	212,325	—	189,674
Colorado Springs Utilities, CO	AA	RO: Stable	Retail	Yes	Coal	2,419,575	—	673,261
Cowlitz County Public Utility District No. 1 — Electric, WA	A	RO: Stable	Retail	Yes	Hydro	235,133	—	48,243
Eagle Mountain Electric and Gas Funds (UT)	A	RO: Stable	Retail	Yes	Coal/Gas	28,054	—	6,125
Eugene Electric Board, OR	A+	RO: Stable	Retail	Yes	Hydro	306,348	—	88,690
Glendale Electric Funds, CA	A+	RO: Negative	Retail	Yes	Coal	117,163	—	85,629
Grant County Public Utility District No. 2 — Electric System	AA	RO: Stable	Retail	Yes	Hydro	160,834	—	46,969
Grays Harbor County Public Utility District No. 1, WA	A	RO: Stable	Retail	Yes	Hydro	117,505	—	41,625
Heber Light & Power Company, UT	A+	RO: Stable	Retail	Yes	Hydro/Coal/Gas	11,058	—	11,641
Imperial Irrigation District — Energy, CA	A+	RO: Stable	Retail	Yes	Gas	573,985	—	149,800
Klickitat CO Public Utility District No. 1, WA	A-	RO: Stable	Retail	Yes	Hydro	140,352	—	12,202
Lodi Electric Fund, CA	A-	RO: Stable	Retail	Yes	Gas	70,332	—	25,556
Los Alamos County Joint Utility System Fund, NM	A	RO: Stable	Retail	Yes	Coal/Hydro	53,633	—	8,714
Los Angeles Department of Water & Power — Power System, CA	AA-	RO: Stable	Retail	Yes	Coal	7,744,021	—	1,479,000
Modesto Irrigation District, CA	A	RO: Positive	Retail	Yes	Gas	557,493	—	113,931
Overton Power District No. 5, NV	BBB+	RO: Stable	Retail	Yes	Hydro/Gas	53,114	—	14,212
Pasadena Water & Power, CA	AA	RO: Stable	Retail	Yes	Coal	134,485	—	64,926
Pend Oreille County Public Utility District No. 1 — Combined, WA	A-	RO: Stable	Retail	Yes	Hydro	29,525	—	8,782
Platte River Power Authority, CO	AA	RO: Stable	Wholesale	Yes	Coal	258,061	4	146,448
Redding Electric Utility Fund, CA	A	RO: Stable	Retail	Yes	Coal/Gas	159,001	—	43,281
Riverside Electric Utility, CA	AA-	RO: Stable	Retail	Yes	Coal	585,532	—	107,321
Roseville Electric Fund, CA	A+	RO: Stable	Retail	Yes	Gas	248,496	—	54,948
Sacramento Municipal Utility District, CA	A+	RO: Stable	Retail	Yes	Gas	3,048,222	—	610,185
Silicon Valley Power, CA	A+	RO: Stable	Retail	Yes	Gas	199,676	—	52,904
Snohomish CO Public Utility District No. 1, WA	AA-	RO: Stable	Retail	Yes	Hydro	351,328	—	327,871
Sulphur Valley Springs Electric Cooperative, AZ	A-	RO: Stable	Retail	No	Coal	175,077	—	51,443
Tacoma Power, WA	AA-	RO: Stable	Retail	Yes	Hydro	593,256	—	171,506
Tri-State Generation & Transmission Association Inc.	A	RO: Stable	G&T Coop	Yes	Coal	3,177,000	44	612,000
Turlock Irrigation District, CA	A+	RO: Stable	Retail	Yes	Gas	1,209,812	—	100,271

^aTotal Members/Wholesale Customers – Most recent figures available; some figures may be estimated. ^bTotal Retail Customers – Figures for wholesale systems represent retail customers served by the members; most recent data available; some figures may be estimated. G&T – Generation and transmission. FERC – Federal Energy Regulatory Commission. *Continued on next page.*
Source: Fitch Ratings.

Public Power Operating Profiles (Continued)

Issuer	Rating	Outlook/Watch	Type	Self-Regulated	Primary Fuel Exposure	Total Debt 2013 (\$000)	Total Members/ Wholesale Customers ^a	Total Retail Customers ^b
Other/Islands								
Anchorage Electric Utility Fund, AK	A+	RO: Stable	Retail	No	Gas	276,489	—	30,743
Chugach Electric Association Inc., AK	A	RO: Stable	Retail	No	Gas	551,597	—	82,554
Guam Power Authority	BBB-	RO: Stable	Retail	No	Oil	644,516	—	48,512
Puerto Rico Electric Power Authority	BB+	RO: Negative	Retail	Yes	Oil	8,895,692	—	1,469,541
Virgin Islands Electric System	BB	RO: Stable	Retail	No	Oil	287,864	—	54,571

^aTotal Members/Wholesale Customers – Most recent figures available; some figures may be estimated. ^bTotal Retail Customers – Figures for wholesale systems represent retail customers served by the members; most recent data available; some figures may be estimated. G&T – Generation and transmission. FERC – Federal Energy Regulatory Commission.

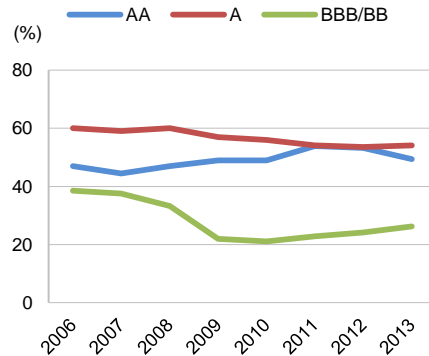
Source: Fitch Ratings.

Retail Electric Trends

Below, the trends of 'AA' and 'A' medians for retail electric systems are displayed for nine of the financial metrics used in Fitch's analysis. Also included are the trends of 'BBB/BB' medians for retail electric systems. However, the sample size is small.

Equity/Capitalization

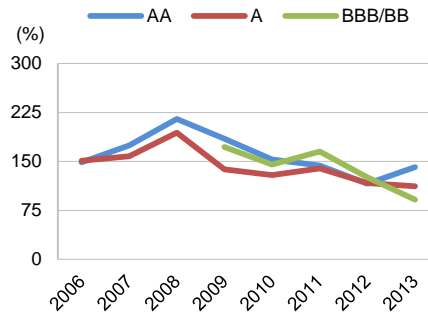
Provides a measure of cost recovery.



Source: Fitch Ratings.

Capex/Depreciation and Amortization

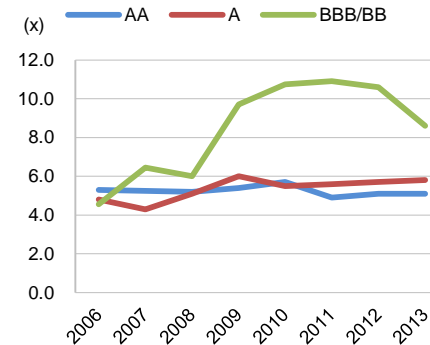
Indicates whether annual capital spending keeps pace with depreciation.



Source: Fitch Ratings.

Debt/FADS

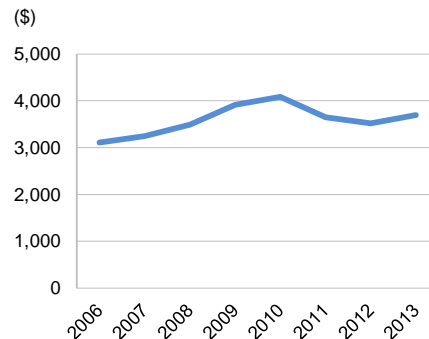
Indicates the size of debt compared to the margin available for debt service.



Source: Fitch Ratings.

Debt/Customer (Retail)

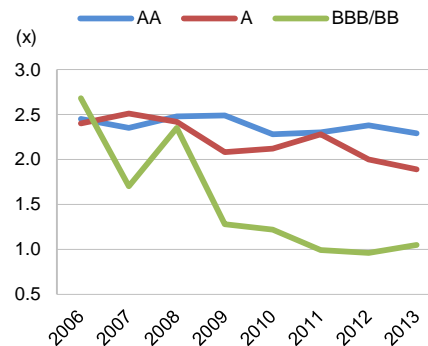
Provides a measure for relative comparison of leverage.



Source: Fitch Ratings.

Debt Service Coverage

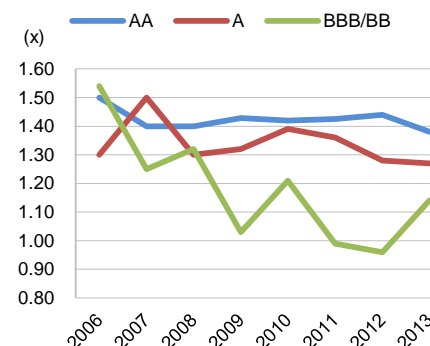
Indicates the margin available to meet current debt service requirements.



Source: Fitch Ratings.

Coverage of Full Obligations

Indicates the margin available to meet current debt service and other fixed obligations.

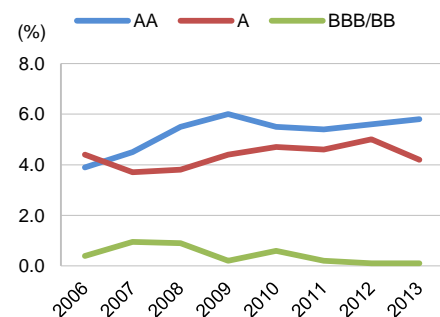


Source: Fitch Ratings.

FADS – Funds available for debt service. Note: Please see pages 19 and 20 for “Glossary of Terms” and “Ratio Definitions.”

General Fund Transfer/ Operating Revenues

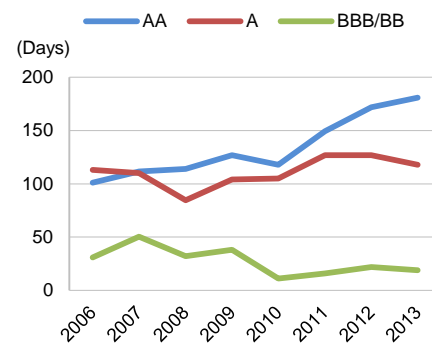
Indicates the degree to which a utility supports city or county general fund operations.



Source: Fitch Ratings.

Days Cash on Hand

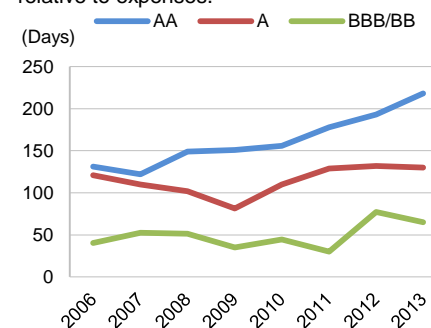
Indicates financial flexibility, specifically cash and cash equivalents, relative to expenses.



Source: Fitch Ratings.

Days Liquidity on Hand

Indicates financial flexibility, including all available sources of cash and liquidity, relative to expenses.



Source: Fitch Ratings.

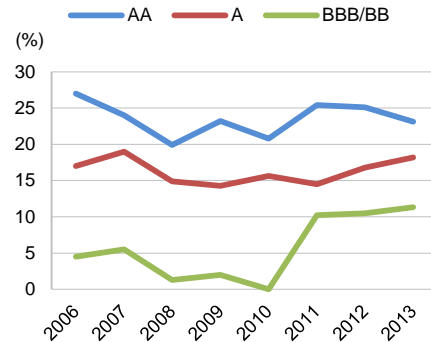
FADS – Funds available for debt service. Note: Please see pages 19 and 20 for Glossary of Terms and Ratio Definitions.

Wholesale Electric Trends

Below, the trends of 'AA' and 'A' medians for wholesale electric systems are displayed for six of the financial metrics used in Fitch's analysis. Also included are the trends of 'BBB/BB' medians for wholesale electric systems. However, the sample size is small.

Equity/Capitalization

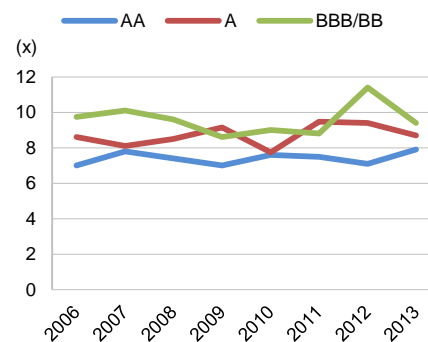
Provides a measure of cost recovery, leverage and debt capacity.



Source: Fitch Ratings.

Debt/FADS

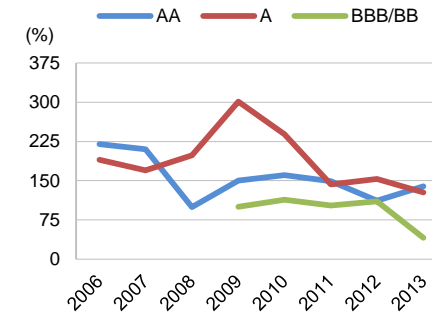
Indicates the size of debt compared to the margin available for debt service.



Source: Fitch Ratings.

Capex/Depreciation and Amortization

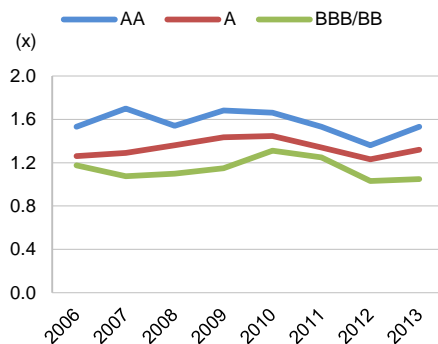
Indicates amount of capital spending relative to asset depreciation.



Source: Fitch Ratings.

Debt Service Coverage

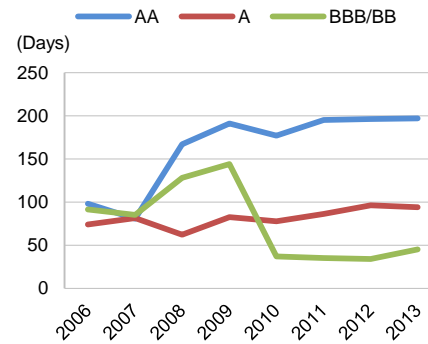
Indicates the margin available to meet current debt service requirements.



Source: Fitch Ratings.

Days Cash on Hand

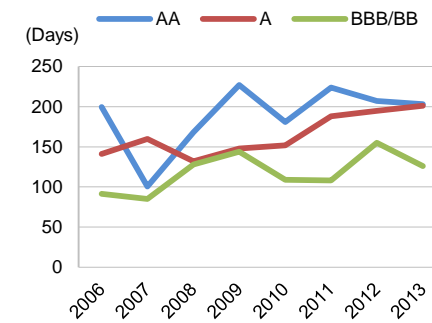
Indicates financial flexibility, specifically cash and cash equivalents, relative to expenses.



Source: Fitch.

Days Liquidity on Hand

Indicates financial flexibility, including all available sources of cash and liquidity, relative to expenses.



Source: Fitch Ratings.

FADS – Funds available for debt service. Note: Please see pages 19 and 20 for Glossary of Terms and Ratio Definitions.

Retail Systems

Issuer	Rating	Outlook/ Watch	Region	Total Revenues 2013 (\$000)	Debt Service Coverage 2013 (x)	Coverage of Full Obligations 2013 (x)	Debt/ FADS 2013 (x)	Days Cash on Hand 2013	Days Liquidity on Hand 2013	Transfer Payment as % of Operating Revs 2013	Capex/ Depreciation 2013 (%)	Equity/ Capitalization 2013 (%)	Debt Per Customer 2013 (\$)
AA+ Rated Senior Debt													
Chelan CO Public Utility District No. 1 — Consolidated, WA	AA+	RO: Stable	WECC	362,107	2.74	2.39	4.5	496	496	2.1	62.9	40.2	16,971
Memphis Light, Gas & Water Division — Electric Division, TN	AA+	RO: Stable	SERC	1,270,566	1.62	1.11	3.2	46	46	2.8	196.5	61.8	1,636
Nashville Electric Service, TN	AA+	RO: Stable	SERC	1,174,424	2.49	1.13	4.4	77	86	2.7	141.1	51.9	1,511
San Antonio City Public Service, TX (CPS Energy)	AA+	RO: Stable	ERCOT	2,239,586	2.13	1.32	6.1	180	289	12.1	215.4	37.7	7,454
Median				1,222,495	2.31	1.23	4.5	129	188	2.8	168.8	46.1	4,545
AA Rated Senior Debt													
Chattanooga Electric Power Board — Electric System, TN	AA	RO: Stable	SERC	554,300	3.46	1.28	5.1	91	91	0.0	163.3	49.0	1,639
Colorado Springs Utilities, CO	AA	RO: Stable	WECC	832,311	1.85	1.65	8.5	150	200	3.8	200.5	38.0	3,594
Concord Utility Funds, NC	AA	RO: Stable	SERC	115,321	2.24	1.47	3.8	376	376	0.5	39.0	72.4	3,308
Grant County Public Utility District No. 2 — Electric System	AA	RO: Stable	WECC	242,498	3.98	2.96	2.3	464	464	5.7	770.2	79.1	3,424
JEA — Electric System and Bulk Power Supply System, FL	AA	RO: Stable	FRCC	1,274,586	2.67	1.70	7.1	190	190	11.3	61.2	20.7	6,818
Lincoln Electric System, NE	AA	RO: Stable	SPP	290,121	2.08	1.46	7.2	132	293	6.5	153.7	29.5	5,310
New Braunfels Utilities, TX	AA	RO: Stable	ERCOT	110,980	5.54	1.50	2.1	219	219	5.6	248.4	86.0	1,422
Orlando Utilities Commission, FL	AA	RO: Stable	FRCC	825,358	2.01	1.54	6.1	350	350	12.3	126.1	43.0	6,372
Pasadena Water & Power, CA	AA	RO: Stable	WECC	190,071	2.49	1.15	3.9	445	445	7.4	195.1	79.8	2,071
Springfield Public Utility, MO	AA	RO: Stable	SPP	394,541	1.98	1.61	7.1	95	95	3.2	129.7	56.0	6,653
Median				342,331	2.37	1.52	5.6	205	256	5.7	158.5	52.5	3,509
AA- Rated Senior Debt													
Anaheim Electric Utilities Fund, CA	AA-	RO: Stable	WECC	451,958	2.06	1.28	6.8	129	129	3.9	108.8	32.1	6,426
Austin Electric, TX	AA-	RO: Stable	ERCOT	1,288,259	1.98	1.39	4.0	88	209	8.2	103.5	54.3	3,252
Bountiful Light and Power, UT	AA-	RO: Stable	WECC	27,181	6.17	1.75	1.8	389	389	9.0	32.4	80.7	840
CoServ Electric, TX	AA-	RO: Stable	ERCOT	413,465	2.12	1.31	7.7	67	137	0.7	225.0	40.6	3,109
Dover Electric Revenue Fund, DE	AA-	RO: Stable	RFC	90,686	6.83	1.07	1.1	275	275	11.0	71.4	82.6	1,077
Floresville Electric Light & Power System, TX	AA-	RO: Stable	ERCOT	31,174	2.07	1.15	5.5	143	143	2.9	138.2	61.9	1,542
Gainesville Regional Utilities, FL	AA-	RO: Stable	FRCC	348,776	1.93	1.43	6.9	86	168	10.3	140.1	32.9	10,492
Garland Electric Fund, TX	AA-	RO: Stable	ERCOT	297,758	2.33	1.13	6.3	336	419	7.3	391.0	52.8	5,093
Guadalupe Valley Electric Cooperative Inc., TX	AA-	RO: Stable	ERCOT	199,425	2.87	1.47	4.8	50	287	0.3	244.1	53.2	2,688
Hydro-Quebec	AA-	RO: Negative	NPCC	12,881,000	2.51	1.81	5.7	246	427	24.9	162.7	30.4	10,744
Jacksonville Beach Combined Utility Funds, FL	AA-	RO: Stable	FRCC	89,204	3.25	2.47	2.1	298	298	4.0	84.2	84.5	1,029
Kissimmee Utility Authority, FL	AA-	RO: Stable	FRCC	174,191	0.81	0.92	10.7	178	217	5.5	149.8	47.2	3,260
Lakeland Electric Utility, FL	AA-	RO: Stable	FRCC	302,056	2.07	1.55	5.1	182	182	8.0	78.1	40.5	3,997
Los Angeles Department of Water & Power — Power System, CA	AA-	RO: Stable	WECC	3,218,4586	2.41	1.51	7.6	178	178	7.7	207.9	40.1	5,236
Ocala, FL Combined Utility Funds	AA-	RO: Stable	FRCC	176,573	2.48	1.15	5.1	252	252	6.2	63.0	65.5	2,940
Pedernales Electric Cooperative Inc., TX	AA-	RO: Stable	ERCOT	597,358	2.12	1.36	4.9	50	129	2.1	141.3	41.6	2,682
Riverside Electric Utility, CA	AA-	RO: Stable	WECC	350,387	2.36	1.35	4.9	307	307	10.6	123.6	44.5	5,446
Rochester Public Utilities, MN	AA-	RO: Stable	MRO	140,978	2.83	1.18	5.5	132	132	5.9	206.6	49.7	2,448
Snohomish CO Public Utility District No. 1, WA	AA-	RO: Stable	WECC	609,003	2.54	1.37	4.5	183	183	5.4	202.2	77.5	1,072
Tacoma Power, WA	AA-	RO: Stable	WECC	414,462	2.21	1.44	4.9	318	318	10.9	105.4	56.8	3,459
Tallahassee Electric Fund, FL	AA-	RO: Stable	FRCC	282,989	1.82	1.18	7.2	336	336	9.5	155.8	42.0	4,206
Winter Park Electric Services Fund, FL	AA-	RO: Stable	FRCC	49,007	3.08	2.47	5.0	26	108	5.5	106.1	21.1	4,727
Median				299,907	2.35	1.37	5.1	180	213	6.8	139.2	48.5	3,256

FADS – Funds available for debt service. Note: Fiscal 2012 audit — Anchorage Electric Utility; Benton CO PUD, Boise Kuna Irr Dis; Grays Harbor PUD; Imperial Irr Dis; Klickitat PUD; Memphis Light, Gas & Water, Modesto Irr Dis; Pend Oreille County PUD. Draft Fiscal 2013 audit — Bristol Utilities Authority, VA. *Continued on next page.*
Source: Fitch Ratings.

Retail Systems (Continued)

Issuer	Rating	Outlook/ Watch	Region	Total Revenues 2013 (\$000)	Debt Service Coverage 2013 (x)	Coverage of Full Obligations 2013 (x)	Debt/ FADS 2013 (x)	Days Cash on Hand 2013	Days Liquidity on Hand 2013	Transfer Payment as % of Operating Revs 2013	Capex/ Depreciation 2013 (%)	Equity/ Capitalization 2013 (%)	Debt Per Customer 2013 (\$)
A+ Rated Senior Debt													
Alameda Municipal Power — Electric Services, CA	A+	RO: Stable	WECC	56,044	4.27	1.40	2.8	244	244	7.3	69.2	64.6	905
Anchorage Electric Utility Fund, AK	A+	RO: Stable	Other	119,379	1.72	1.32	5.1	106	828	10.3	281.4	47.3	8,994
Benton CO Public Utility District No. 1, WA	A+	RO: Stable	WECC	129,146	3.24	1.42	3.3	185	218	9.1	101.7	67.6	1,245
Brownsville Public Utilities Board, TX	A+	RO: Negative	ERCOT	166,172	2.06	1.48	6.5	239	239	4.3	222.2	55.2	7,463
Bryan Utilities City Electric System, TX	A+	RO: Stable	ERCOT	159,858	1.58	1.12	6.1	101	101	5.8	199.5	47.9	5,838
Bryan Utilities Rural Electric System, TX	A+	RO: Stable	ERCOT	32,257	6.06	1.48	2.7	74	74	0.0	322.7	77.5	832
City of Greenville (NC)	A+	RO: Stable	SERC	261,045	2.44	1.22	3.6	114	114	2.2	163.4	73.6	1,813
Clark County Public Utility District — Electric System, WA	A+	RO: Stable	WECC	366,902	2.40	1.35	3.5	103	126	5.7	128.3	51.1	1,119
Eugene Electric Board, OR	A+	RO: Stable	WECC	250,048	2.64	1.47	5.0	105	105	4.8	142.1	54.5	3,454
Fort Pierce Utilities Authority, FL	A+	RO: Stable	FRCC	97,033	2.35	1.39	7.7	163	163	5.5	67.6	47.3	7,216
Glendale Electric Funds, CA	A+	RO: Negative	WECC	173,701	4.78	1.11	3.6	178	178	12.0	22.8	73.0	1,368
Granbury Municipal Utilities, TX	A+	RO: Stable	ERCOT	18,615	1.84	1.24	5.4	65	65	6.7	136.4	58.1	5,528
Greer Commission of Public Works, SC	A+	RO: Stable	SERC	74,650	2.20	1.43	6.3	133	133	1.3	80.2	62.1	4,739
Heber Light & Power Company, UT	A+	RO: Stable	WECC	13,686	2.80	1.41	5.6	139	139	2.2	136.3	66.9	950
Imperial Irrigation District — Energy, CA	A+	RO: Stable	WECC	405,201	1.50	1.22	9.7	197	250	0.0	186.2	61.1	3,832
Kansas City Board of Public Utilities, KS	A+	RO: Stable	SPP	287,418	2.26	1.50	5.4	51	51	9.5	137.7	45.8	7,827
Leesburg Electric System, FL	A+	RO: Stable	FRCC	62,050	5.23	1.38	2.4	181	181	10.5	204.2	67.5	1,602
Lubbock Power & Light Fund, TX	A+	RO: Stable	SPP	212,666	1.93	1.12	3.0	113	113	6.3	85.5	57.0	1,280
Roseville Electric Fund, CA	A+	RO: Stable	WECC	159,002	2.61	1.27	5.6	166	166	9.3	32.7	50.6	4,522
Sacramento Municipal Utility District, CA	A+	RO: Stable	WECC	1,428,395	1.65	1.47	8.5	232	232	0.0	101.8	21.7	4,996
Seguin Utility Fund, TX	A+	RO: Stable	ERCOT	40,827	3.06	1.49	3.9	279	279	0.0	198.9	75.1	2,540
Silicon Valley Power, CA	A+	RO: Stable	WECC	298,751	1.05	1.00	11.3	244	244	5.4	243.9	76.6	3,774
Turlock Irrigation District, CA	A+	RO: Stable	WECC	350,395	1.38	1.31	9.5	261	398	0.0	64.7	20.1	12,065
Vero Beach Electric System, FL	A+	RO: Stable	FRCC	90,958	2.31	1.12	2.9	77	77	6.2	93.3	71.7	1,286
Median				159,430	2.33	1.37	5.3	151	165	5.6	136.4	59.6	3,614
A Rated Senior Debt													
Boerne Utility System, TX	A	RO: Stable	ERCOT	21,591	1.80	1.35	8.0	249	249	9.3	240.6	52.1	2,943
Chugach Electric Association Inc., AK	A	RO: Stable	Other	305,308	1.60	1.51	7.2	7	227	0.0	89.5	24.2	6,682
Cowlitz County Public Utility District No. 1 — Electric, WA	A	RO: Stable	WECC	263,404	1.59	1.18	6.6	144	144	3.8	69.0	52.4	4,874
Eagle Mountain Electric and Gas Funds (UT)	A	RO: Stable	WECC	13,265	0.95	0.99	11.0	228	228	0.0	484.9	31.5	4,580
Grays Harbor County Public Utility District No. 1, WA	A	RO: Stable	WECC	105,637	1.51	0.88	7.7	69	108	8.0	89.4	53.7	2,823
Los Alamos County Joint Utility System Fund, NM	A	RO: Stable	WECC	64,501	1.44	1.26	3.4	111	111	1.1	149.1	75.4	6,155
Modesto Irrigation District, CA	A	RO: Positive	WECC	366,601	1.71	1.38	5.8	239	239	0.0	103.8	14.8	4,893
Redding Electric Utility Fund, CA	A	RO: Stable	WECC	160,924	2.06	1.60	5.8	113	113	3.7	38.6	40.1	3,651
Reedy Creek Improvement District — Utility Fund, FL	A	RO: Stable	FRCC	189,816	1.07	1.05	6.4	38	38	0.0	84.5	20.0	215,638
Median				160,924	1.59	1.26	6.6	113	144	1.1	89.5	40.1	4,874

FADS – Funds available for debt service. Note: Fiscal 2012 audit — Anchorage Electric Utility; Benton CO PUD, Boise Kuna Irr Dis; Grays Harbor PUD; Imperial Irr Dis; Klickitat PUD; Memphis Light, Gas & Water, Modesto Irr Dis; Pend Oreille County PUD. Draft Fiscal 2013 audit — Bristol Utilities Authority, VA. *Continued on next page.*
Source: Fitch Ratings.

Retail Systems (Continued)

Issuer	Rating	Outlook/ Watch	Region	Total Revenues 2013 (\$000)	Debt Service Coverage 2013 (x)	Coverage of Full Obligations 2013 (x)	Debt/ FADS 2013 (x)	Days Cash on Hand 2013	Days Liquidity on Hand 2013	Transfer Payment as % of Operating Revs 2013	Capex/ Depreciation 2013 (%)	Equity/ Capitalization 2013 (%)	Debt Per Customer 2013 (\$)
A- Rated Senior Debt													
Batavia Electric Fund, IL	A-	RO: Stable	MRO	45,107	2.45	1.22	6.1	122	122	0.0	143.1	66.5	2,307
Boise Kuna Irr Dist ADA and Canyon Counties (ID)	A-	RO: Stable	WECC	45,852	2.94	1.26	4.4	38	78	1.2	107.0	63.7	4,994
Bristol Utilities Authority, VA	A-	RO: Stable	SERC	82,559	5.38	1.82	2.6	83	83	0.0	209.7	77.5	2,209
Klickitat CO Public Utility District No. 1, WA	A-	RO: Stable	WECC	38,589	1.06	1.04	13.1	165	165	4.1	50.9	49.0	11,502
Lodi Electric Fund, CA	A-	RO: Stable	WECC	63,230	0.98	0.83	8.8	79	79	16.0	95.9	4.8	2,752
Long Island Power Authority, NY	A-	RO: Negative	NPCC	3,755,832	1.30	1.14	17.2	44	72	9.1	114.4	3.6	9,222
Paducah Power System, KY	A-	RO: Stable	SERC	67,629	1.22	1.11	10.8	28	28	3.2	89.6	16.2	7,216
Pend Oreille County Public Utility District No. 1 — Combined, WA	A-	RO: Stable	WECC	46,170	1.75	1.25	4.0	125	125	5.0	109.4	65.2	3,362
Sulphur Springs Valley Electric Cooperative, AZ	A-	RO: Stable	WECC	108,949	1.61	1.24	8.6	5	73	0.0	157.5	32.7	3,403
Median				63,230	1.61	1.22	8.6	79	79	3.2	109.4	49.0	3,403
BBB+ Rated Senior Debt													
Overton Power District No. 5, NV	BBB+	RO: Stable	WECC	36,775	1.42	1.17	7.4	88	149	0.0	60.9	39.4	3,737
Sikeston Board of Municipal Utilities, MO	BBB+	RO: Stable	SERC	74,331	1.15	1.13	6.1	261	261	0.0	86.3	34.8	13,237
Vermont Electric Cooperative, VT	BBB+	RO: Stable	NPCC	74,521	1.66	1.21	7.4	8	101	4.3	325.9	46.1	1,817
Median				74,331	1.42	1.17	7.4	88	149	0.0	86.3	39.4	3,737
BBB- Rated Senior Debt													
Guam Power Authority	BBB-	RO: Stable	Other	450,733	1.15	1.15	9.7	17	17	0.0	181.0	17.8	13,286
BB+ Rated Senior Debt													
Puerto Rico Electric Power Authority	BB+	RO: Negative	Other	4,843,016	1.24	0.80	12.3	20	28	6.1	91.6	(9.8)	6,053
BB Rated Senior Debt													
Virgin Islands Electric System	BB	RO: Stable	Other	339,885	1.06	1.06	10.1	11	11	0.1	91.8	16.4	5,275

FADS – Funds available for debt service. Note: Fiscal 2012 audit — Anchorage Electric Utility; Benton CO PUD, Boise Kuna Irr Dis; Grays Harbor PUD; Imperial Irr Dis; Klickitat PUD; Memphis Light, Gas & Water, Modesto Irr Dis; Pend Oreille County PUD. Draft Fiscal 2013 audit — Bristol Utilities Authority, VA.

Source: Fitch Ratings.

All Wholesale Systems (Includes G&T Cooperatives)

Issuer	Rating	Outlook/ Watch	Region	Total Revenues 2013 (\$000)	Debt Service Coverage 2013 (x)	Coverage of Full Obligations 2013 (x)	Debt/FADS 2013 (x)	Days Cash on Hand 2013	Days Liquidity on Hand 2013	Capex/ Depreciation 2013 (%)	Equity/ Capitalization 2013 (%)
AAA Rated Senior Debt											
Tennessee Valley Authority	AAA	RO: Stable	SERC	10,956,000	0.85	0.89	7.9	75	198	139.2	18.6
AA Rated Senior Debt											
Bonneville Power Administration, WA	AA	RO: Stable	WECC	3,346,281	1.88	1.05	10.9	256	393	181.2	13.9
New York Power Authority	AA	RO: Stable	NPCC	3,030,000	2.77	2.15	4.2	195	203	72.4	56.1
Platte River Power Authority, CO	AA	RO: Stable	WECC	194,938	1.53	1.44	4.7	200	200	37.4	65.0
Median				3,030,000	1.88	1.44	4.7	200	203	72.4	56.1
AA- Rated Senior Debt											
Associated Electric Cooperative Inc., MO	AA-	RO: Stable	SERC	1,129,752	1.29	1.24	8.6	36	202	99.3	21.7
South Carolina Public Service Authority (Santee Cooper)	AA-	RO: Negative	SERC	1,816,576	1.48	1.36	12.9	197	317	324.0	23.1
Western Minnesota Municipal Power Agency	AA-	RO: Stable	MRO	178,393	1.61	1.61	5.8	293	293	957.8	35.3
Median				1,129,752	1.48	1.36	8.6	197	293	324.0	23.1
A+ Rated Senior Debt											
Arkansas Electric Cooperative Corporation	A+	RO: Stable	SERC	736,207	1.77	1.47	8.7	63	253	92.5	34.0
Basin Electric Power Cooperative, ND	A+	RO: Stable	MRO	2,021,493	1.27	1.27	10.2	85	243	169.2	24.0
Connecticut Municipal Electric Energy Cooperative	A+	RO: Stable	NPCC	174,720	1.09	1.03	7.6	73	178	9.2	18.6
Florida Municipal Power Agency — All-Requirements Project	A+	RO: Stable	FRCC	481,573	0.98	0.98	11.8	91	183	17.3	16.9
Illinois Municipal Electric Agency	A+	RO: Stable	MRO	304,483	1.24	1.16	12.0	77	152	62.6	8.3
Indiana Municipal Power Agency	A+	RO: Stable	RFC	437,404	1.44	1.27	10.4	99	144	53.9	14.3
Massachusetts Municipal Wholesale Electric Company — Consolidated	A+	RO: Stable	NPCC	310,262	1.33	1.21	2.5	94	133	76.0	0.0
Municipal Electric Authority of Georgia	A+	RO: Stable	SERC	714,363	0.92	0.92	14.8	138	187	254.7	0.0
Municipal Gas Authority of Georgia	A+	RO: Stable	SERC	364,019	1.47	1.47	2.6	113	159	2.2	9.5
Nebraska Public Power District	A+	RO: Stable	SPP	1,106,291	1.68	1.56	5.6	212	259	85.1	37.4
Texas Municipal Power Agency	A+	RO: Stable	ERCOT	271,120	1.39	1.07	5.1	109	237	127.8	6.4
WPPI Energy (Wisconsin Public Power Inc.)	A+	RO: Stable	MRO	487,060	1.32	1.08	10.9	76	104	128.2	28.8
Median				459,489	1.33	1.19	9.5	93	181	80.6	15.6
A Rated Senior Debt											
Brazos Electric Power Cooperative, TX	A	RO: Stable	ERCOT	941,043	1.26	1.07	9.8	117	409	149.4	19.5
Buckeye Power Inc., OH	A	RO: Negative	RFC	639,876	1.10	1.10	10.2	19	176	42.1	19.7
Central Iowa Power Cooperative	A	RO: Stable	MRO	191,489	1.56	1.46	5.3	189	458	81.6	35.4
Golden Spread Electric Cooperative, TX	A	RO: Stable	ERCOT	453,118	2.39	1.48	6.7	168	402	379.9	37.8
Grand River Dam Authority, OK	A	RO: Stable	SPP	430,427	1.07	1.06	5.8	151	151	152.0	40.7
Lower Colorado River Authority — Consolidated	A	RO: Stable	ERCOT	1,125,000	1.55	1.49	7.8	189	189	350.7	24.9
Minnesota Municipal Power Agency, MN	A	RO: Stable	MRO	106,104	1.35	1.21	10.5	191	214	341.8	12.1
Municipal Energy Agency of Nebraska	A	RO: Stable	MRO	160,032	1.00	1.00	21.5	75	122	52.0	19.3
North Carolina Municipal Power Agency No. 1	A	RO: Stable	SERC	514,164	1.74	1.65	6.2	220	220	130.1	3.3
Oglethorpe Power Corporation, GA	A	RO: Negative	SERC	1,245,376	1.44	1.42	13.5	204	669	221.4	8.8
Oklahoma Municipal Power Agency	A	RO: Stable	SPP	842,069	1.24	1.17	14.6	102	102	243.0	3.4
Old Dominion Electric Cooperative, VA	A	RO: Stable	RFC	1,304,199	1.32	1.10	7.8	37	282	75.8	32.6
Tri-State Generation & Transmission Association Inc.	A	RO: Stable	WECC	180,364	1.03	1.03	9.5	71	236	194.1	23.6
Median				514,164	1.32	1.17	9.5	151	220	152.0	19.7

G&T – Generation and Transmission. FADS – Funds available for debt service. Note: Fiscal 2012 audit — Delaware Municipal Electric Energy Coop. *Continued on next page.*
Source: Fitch Ratings.

All Wholesale Systems (Includes G&T Cooperatives) (Continued)

Issuer	Rating	Outlook/ Watch	Region	Total Revenues 2013 (\$000)	Debt Service Coverage 2013 (x)	Coverage of Full Obligations 2013 (x)	Debt/FADS 2013 (x)	Days Cash on Hand 2013	Days Liquidity on Hand 2013	Capex/ Depreciation 2013 (%)	Equity/ Capitalization 2013 (%)
A- Rated Senior Debt											
Delaware Municipal Electric Corporation	A-	RO: Positive	RFC	144,110	6.60	1.57	2.5	57	66	999.1	28.6
Great River Energy, MN	A-	RO: Stable	MRO	980,442	1.21	1.17	8.9	148	330	112.6	15.0
North Carolina Eastern Municipal Power Agency	A-	RO: Stable	SERC	699,099	1.36	1.30	6.4	251	251	227.3	3.5
North Carolina Electric Membership Corporation	A-	RO: Stable	SERC	1,039,867	1.75	1.23	7.7	82	201	87.3	10.4
Piedmont Municipal Power Agency, SC	A-	RO: Stable	SERC	219,861	1.20	1.20	10.4	193	193	110.0	3.2
PowerSouth Energy Cooperative and Subsidiaries, AL	A-	RO: Stable	SERC	609,742	1.19	1.14	9.9	54	165	133.1	17.1
San Miguel Electric Cooperative, TX	A-	RO: Stable	ERCOT	134,753	1.10	1.10	8.7	26	452	82.9	18.2
South Mississippi Electric Power Association	A-	RO: Stable	SERC	802,145	1.52	1.25	7.4	11	151	79.5	21.1
South Texas Electric Cooperative Inc.	A-	RO: Stable	ERCOT	359,766	1.43	1.20	12.3	89	577	975.4	15.8
Western Farmers Electric Cooperative, OK	A-	RO: Stable	SPP	525,860	1.32	1.18	8.3	31	231	237.2	22.7
Median				567,801	1.34	1.20	8.5	70	216	122.9	16.5
BBB+ Rated Senior Debt											
East Kentucky Power Cooperative	BBB+	RO: Stable	MRO	903,243	1.34	1.29	10.0	133	263	48.2	13.4
Sam Rayburn Municipal Power Agency, TX	BBB+	RO: Stable	ERCOT	33,927	1.08	1.06	7.1	15	15	2.3	(2.2)
Median				468,585	1.21	1.18	8.6	74	139	25.3	5.6
BBB Rated Senior Debt											
Southern Illinois Power Cooperative	BBB	RO: Stable	MRO	209,872	1.02	1.02	8.8	6	144	33.6	9.2
BB Rated Senior Debt											
Big Rivers Electric Corp., KY	BB	RO: Negative	MRO	562,447	0.59	0.68	12.5	74	107	60.0	33.1

G&T – Generation and Transmission. FADS – Funds available for debt service. Note: Fiscal 2012 audit — Delaware Municipal Electric Energy Coop.

Source: Fitch Ratings.

G&T Cooperative Systems

Issuer	Rating	Outlook/ Watch	Region	Total Revenues 2013 (\$000)	Debt Service Coverage 2013 (x)	Coverage of Full Obligations 2013 (x)	Debt/FADS 2013 (x)	Days Cash on Hand 2013	Days Liquidity on Hand 2013	Capex/ Depreciation 2013 (%)	Equity/ Capitalization 2013 (%)
AA- Rated Senior Debt											
Associated Electric Cooperative Inc., MO	AA-	RO: Stable	SERC	1,129,752	1.29	1.24	8.6	36	202	99.3	21.7
A+ Rated Senior Debt											
Arkansas Electric Cooperative Corporation	A+	RO: Stable	SERC	736,207	1.77	1.47	8.7	63	253	92.5	34.0
Basin Electric Power Cooperative, ND	A+	RO: Stable	MRO	2,021,493	1.27	1.27	10.2	85	243	169.2	24.0
Median				1,378,850	1.52	1.37	9.5	74	248	130.9	29.0
A Rated Senior Debt											
Brazos Electric Power Cooperative, TX	A	RO: Stable	ERCOT	941,043	1.26	1.07	9.8	117	409	149.4	19.5
Buckeye Power Inc., OH	A	RO: Negative	RFC	639,876	1.10	1.10	10.2	19	176	42.1	19.7
Central Iowa Power Cooperative	A	RO: Stable	MRO	191,489	1.56	1.46	5.3	189	458	81.6	35.4
Golden Spread Electric Cooperative, TX	A	RO: Stable	ERCOT	453,118	2.39	1.48	6.7	168	402	379.9	37.8
Oglethorpe Power Corporation, GA	A	RO: Negative	SERC	1,245,376	1.44	1.42	13.5	204	669	221.4	8.8
Old Dominion Electric Cooperative, VA	A	RO: Stable	RFC	1,304,199	1.32	1.10	7.8	37	282	75.8	32.6
Tri-State Generation & Transmission Association Inc.	A	RO: Stable	WECC	180,364	1.03	1.03	9.5	71	236	194.1	23.6
Median				639,876	1.32	1.10	9.5	117	402	149.4	23.6
A- Rated Senior Debt											
Great River Energy, MN	A-	RO: Stable	MRO	980,442	1.21	1.17	8.9	148	330	112.6	15.0
North Carolina Electric Membership Corporation	A-	RO: Stable	SERC	1,039,867	1.75	1.23	7.7	82	201	87.3	10.4
PowerSouth Energy Cooperative and Subsidiaries, AL	A-	RO: Stable	SERC	609,742	1.19	1.14	9.9	54	165	133.1	17.1
San Miguel Electric Cooperative, TX	A-	RO: Stable	ERCOT	134,753	1.10	1.10	8.7	26	452	82.9	18.2
South Mississippi Electric Power Association	A-	RO: Stable	SERC	802,145	1.52	1.25	7.4	11	151	79.5	21.1
South Texas Electric Cooperative Inc.	A-	RO: Stable	ERCOT	359,766	1.43	1.20	12.3	89	577	975.4	15.8
Western Farmers Electric Cooperative, OK	A-	RO: Stable	SPP	525,860	1.32	1.18	8.3	31	231	237.2	22.7
Median				609,742	1.32	1.18	8.7	54	231	112.6	17.1
BBB+ Rated Senior Debt											
East Kentucky Power Cooperative	BBB+	RO: Stable	MRO	903,243	1.34	1.29	10.0	133	263	48.2	13.4
BBB Rated Senior Debt											
Southern Illinois Power Cooperative	BBB	RO: Stable	MRO	209,872	1.02	1.02	8.8	6	144	33.6	9.2
BB Rated Senior Debt											
Big Rivers Electric Corp., KY	BB	RO: Negative	MRO	562,447	0.59	0.68	12.5	74	107	60.0	33.1

G&T – Generation and Transmission. FADS – Funds available for debt service.
Source: Fitch Ratings.

Wholesale Systems (Excludes G&T Cooperatives)

Issuer	Rating	Outlook/ Watch	Region	Total Revenues 2013 (\$000)	Debt Service Coverage 2013 (x)	Coverage of Full Obligations 2013 (x)	Debt/FADS 2013 (x)	Days Cash on Hand 2013	Days Liquidity on Hand 2013	Capex/ Depreciation 2013 (%)	Equity/ Capitalization 2013 (%)
AAA Rated Senior Debt											
Tennessee Valley Authority	AAA	RO: Negative	SERC	10,956,000	0.85	0.89	7.9	75	198	139.2	18.6
AA Rated Senior Debt											
Bonneville Power Administration, WA	AA	RO: Stable	WECC	3,346,281	1.88	1.05	10.9	256	393	181.2	13.9
New York Power Authority	AA	RO: Stable	NPCC	3,030,000	2.77	2.15	4.2	195	203	72.4	56.1
Platte River Power Authority, CO	AA	RO: Stable	WECC	194,938	1.53	1.44	4.7	200	200	37.4	65.0
Median				3,030,000	1.88	1.44	4.7	200	203	72.4	56.1
AA- Rated Senior Debt											
South Carolina Public Service Authority (Santee Cooper)	AA-	RO: Negative	SERC	1,816,576	1.48	1.36	12.9	197	317	324.0	23.1
Western Minnesota Municipal Power Agency	AA-	RO: Stable	MRO	178,393	1.61	1.61	5.8	293	293	957.8	35.3
Median				997,485	1.55	1.49	9.4	245	305	640.9	29.2
A+ Rated Senior Debt											
Connecticut Municipal Electric Energy Cooperative	A+	RO: Stable	NPCC	174,720	1.09	1.03	7.6	73	178	9.2	18.6
Florida Municipal Power Agency — All-Requirements Project	A+	RO: Stable	FRCC	481,573	0.98	0.98	11.8	91	183	17.3	16.9
Illinois Municipal Electric Agency	A+	RO: Stable	MRO	304,483	1.24	1.16	12.0	77	152	62.6	8.3
Indiana Municipal Power Agency	A+	RO: Stable	RFC	437,404	1.44	1.27	10.4	99	144	53.9	14.3
Massachusetts Municipal Wholesale Electric Company — Consolidated	A+	RO: Stable	NPCC	310,262	1.33	1.21	2.5	94	133	76.0	0.0
Municipal Electric Authority of Georgia	A+	RO: Stable	SERC	714,363	0.92	0.92	14.8	138	187	254.7	0.0
Municipal Gas Authority of Georgia ^a	A+	RO: Stable	SERC	364,019	1.47	1.47	2.6	113	159	2.2	9.5
Nebraska Public Power District	A+	RO: Stable	SPP	1,106,291	1.68	1.56	5.6	212	259	85.1	37.4
Texas Municipal Power Agency	A+	RO: Stable	ERCOT	271,120	1.39	1.07	5.1	109	237	127.8	6.4
WPPI Energy (Wisconsin Public Power Inc.)	A+	RO: Stable	MRO	487,060	1.32	1.08	10.9	76	104	128.2	28.8
Median				400,712	1.33	1.12	9.0	97	169	69.3	11.9
A Rated Senior Debt											
Grand River Dam Authority, OK	A	RO: Stable	SPP	430,427	1.07	1.06	5.8	151	151	152.0	40.7
Lower Colorado River Authority — Consolidated	A	RO: Stable	ERCOT	1,125,000	1.55	1.49	7.8	189	189	350.7	24.9
Minnesota Municipal Power Agency, MN	A	RO: Stable	MRO	106,104	1.35	1.21	10.5	191	214	341.8	12.1
Municipal Energy Agency of Nebraska	A	RO: Stable	MRO	160,032	1.00	1.00	21.5	75	122	52.0	19.3
North Carolina Municipal Power Agency No. 1	A	RO: Stable	SERC	514,164	1.74	1.65	6.2	220	220	130.1	3.3
Oklahoma Municipal Power Agency	A	RO: Stable	SPP	842,069	1.24	1.17	14.6	102	102	243.0	3.4
Median				472,296	1.30	1.19	9.2	170	170	197.5	15.7
A- Rated Senior Debt											
Delaware Municipal Electric Corporation	A-	RO: Positive	RFC	144,110	6.60	1.57	2.5	57	66	999.1	28.6
North Carolina Eastern Municipal Power Agency	A-	RO: Stable	SERC	699,099	1.36	1.30	6.4	251	251	227.3	3.5
Piedmont Municipal Power Agency, SC	A-	RO: Stable	SERC	219,861	1.20	1.20	10.4	193	193	110.0	3.2
Median				219,861	1.36	1.30	6.4	193	193	227.3	3.5
BBB+ Rated Senior Debt											
Sam Rayburn Municipal Power Agency, TX	BBB+	RO: Stable	ERCOT	33,927	1.08	1.06	7.1	15	15	2.3	(2.2)

^aFiscal 2011 audit – Municipal Gas Authority of Georgia. G&T – Generation and Transmission. FADS – Funds available for debt service.
Source: Fitch Ratings.

Financial Summary Glossary of Terms

Capitalization

Total debt plus total equity.

Debt to Customer

Total debt divided by total customers. This ratio represents a measure of leverage per end user.

Fund Available for Debt Service (FADS)

Operating income, plus depreciation and amortization (taken from cash flow statement), plus interest income (taken from income statement). FADS does not include any benefit from the use of (or deposit to) the rate-stabilization funds, non-operating connection fees, or capital contributions.

Full Obligations

An obligation proxy that includes annual debt service plus a fixed charge related to purchase power expense. The fixed charge is calculated as 30% of purchase power expense and is an estimate of the portion of purchase power costs that are associated with debt service.

Transfer Payments

Transfer payments include payments to the general fund, payments in lieu of taxes (PILOT), free services provided and other taxes paid.

Operating Income

Operating revenue less operating expenses.

Restricted Funds

Cash and investments that are restricted in use (e.g. debt service reserve funds, debt service funds, and construction funds) and not deemed to be available to meet short-term liquidity needs.

Total Annual Debt Service

Sum of scheduled long-term principal and total annual cash interest payments (includes interest on long-term and short-term debt). Does not generally include principal amounts paid as a part of a refinancing or voluntary prepayments. Additionally, capitalized interest may be excluded for systems undertaking large construction programs.

Unrestricted Funds

Cash and short-term investments that are available for short-term liquidity needs with no limitations on use. Funds restricted solely by board or management policy may also be included.

Total Debt

Sum of long-term debt, capital leases, outstanding commercial paper, notes payable, and current maturities of long-term debt and capital leases. No adjustments are made for unamortized discounts or premiums.

Total Equity

Net assets (retained earnings plus contributed capital plus patronage capital).

Ratio Definitions

Ratio	Calculation	Significance
Cash Flow		
FADS (\$)	Operating Revenues – Operating Expenses + Depreciation + Amortization + Interest Income	Provides a measure of cash flow from operations.
Debt Service Coverage (x)	FADS/Total Annual Debt Service	Indicates the margin available to meet current debt service requirements.
Coverage of Full Obligations (x)	(FADS + Fixed Charges – General Fund Transfer and/or PILOT Payments Excluded from Operating Expenses)/(Total Annual Debt Service + Fixed Charges)	Indicates the margin available to meet current debt service requirements and other fixed obligations.
Debt to FADS (x)	Total Debt/FADS	Indicates the size of debt compared to the margin available for debt service.
Liquidity		
Days Cash on Hand	Unrestricted Cash and Investments/(Operating Expenses – Depreciation+ Amortization)*365	Indicates financial flexibility, specifically cash and short-term investments, relative to expenses.
Days Liquidity on Hand	(Unrestricted Cash and Investments + Available Lines of Credit and Commercial Paper Capacity)/(Operating Expenses – Depreciation – Amortization)*365	Indicates financial flexibility, including all available sources of cash, short-term investments and liquidity, relative to expenses.
Capital Structure		
Equity to Capitalization (%)	Total Equity/Capitalization	Provides a measure of cost recovery, leverage and debt capacity.
Debt to Customer (\$)	Total Debt/Total Customers	Provides a measure for relative comparison of leverage.
Other		
Capex to Depreciation and Amortization (%)	Capex/(Depreciation + Amortization)	Indicates the relationship between capital spending and the depreciation of existing assets.
Transfer Payments to Operating Revenues (%)	(General Fund Transfers + PILOT + Other taxes)/Operating Revenues	Indicates the degree to which a utility provides city or county general fund support.

Source: Fitch Ratings.

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US Municipal Utility Revenue Debt

This Request for Comment (RFC) describes our proposed rating methodology for revenue bonds issued by various types of municipal utilities in the US.

The proposed methodology includes:

- 1) A scorecard that assigns weights and values to the factors we consider most important in utility revenue bond analysis
- 2) A framework for approaching the relationship between a municipality's revenue bonds and its General Obligation bonds, in cases when these securities exhibit disparate credit quality

If the proposed methodology is adopted, we expect a single-digit percentage of our ratings to change, with changes roughly split between upgrades and downgrades.

We invite market participants to comment on the RFC by September 30, by submitting their comments on the [Request for Comment Page](#) on www.moodys.com.

The revised Credit Rating Methodology is presented in draft form during the RFC period. Upon appropriate consideration of received comments, unless such comments lead to further changes, the revised Credit Rating Methodology will be adopted and published. Once published, the Credit Rating Methodology will update and replace two methodologies governing our municipal utility revenue ratings: the Analytical Framework for Water and Sewer System Ratings, August 1999, and US Public Power Electric Utilities, April 2008.

Rating Methodology: US Municipal Utility Revenue Debt

This methodology explains how Moody's evaluates the credit quality of essential service US municipal utility revenue bonds. The approach described in the methodology applies to six basic categories of municipal utilities: water distribution, gas distribution, electric distribution, sanitary sewerage, stormwater disposal, and solid waste disposal. The methodologies used to assign ratings to municipal utility districts, global regulated water utilities, regulated electric and gas utilities, electric generation and transmission cooperatives, waste-to-energy projects can be found in the methodology index on moody.com.

The primary factors that drive our credit analysis for these types of utilities are the size and health of the system and its service area, the financial strength of its operations, the legal provisions governing its management, and the strength of its rate management and regulatory compliance.

We intend for this document to help investors, municipalities, utilities, and other interested market participants understand how key quantitative and qualitative risk factors are likely to affect ratings in the municipal utility sector. This document does not offer an exhaustive treatment of all factors that are reflected in our ratings, but should enable the reader to understand the considerations that are usually most important for ratings in this sector.

This methodology updates and replaces two methodologies governing our municipal utility revenue ratings: the [Analytical Framework for Water and Sewer System Ratings](#), August 1999, and [US Public Power Electric Utilities](#), April 2008. While reflecting many of the same core principles that we have used in assigning ratings to this sector for years, this updated methodology introduces a scorecard that quantifies several factors that we previously evaluated in qualitative ways. A modest number of ratings are expected to change as a result of the implementation of this methodology.

The purpose of the scorecard is to provide a reference tool that market participants can use to approximate most credit profiles within the US municipal utility sector. The scorecard provides summarized guidance for the factors that we generally consider most important in assigning ratings to these issuers. However, the scorecard is a summary that does not include every rating consideration. The weights the scorecard shows for each factor represent an approximation of their importance for rating decisions. In addition, the scorecard was built based on historical results, while our ratings are based on forward-looking expectations. As a result, we would not expect the scorecard-indicated rating to match the actual rating in every case.

Introduction

This methodology covers debt secured by the revenues generated by US municipal utilities providing monopolistic services essential to public health and functional economies.

The security for a municipal utility revenue bond is typically defined in a bond resolution or a trust indenture, which acts as a contract between the utility and bondholders. The resolution or indenture most often identifies the bond's security as a lien on the net revenues of the system after the payment of regular operating and maintenance expenses.

The sector is varied and fragmented. US municipal utilities provide many different services whose rates or fees can secure debt. The utilities rated under this methodology mostly fall into one or more of six basic categories:

- 1) **Water utilities** take water from the ground, a river, a lake, or in special cases the ocean, treat it to a potable standard, and distribute it to customers for drinking, cleaning, and commercial, industrial,

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moody.com for the most updated credit rating action information and rating history.

or agricultural uses. These utilities can be involved in any or all of the functions of water supply: water treatment, long-distance transmission, and retail water distribution. Some water utilities have no treatment capacity and purchase potable water wholesale.

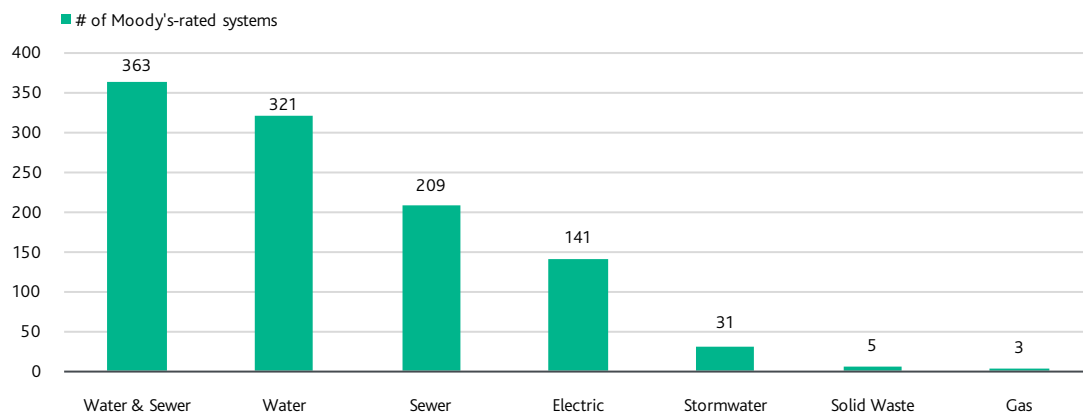
- 2) **Gas utilities** take natural gas from a wholesale¹ pipeline, odorize it for safety detection, and pressurize it and deliver it to customers through a pipe network for uses such as heating, cooking, or commercial and industrial applications. Some municipal gas systems may encompass their own natural gas supplies.
- 3) **Electric utilities** purchase electricity² from the grid and deliver it to residential, commercial, and industrial customers for a wide range of power uses.
- 4) **Sanitary sewer** utilities collect and treat wastewater, discharging it into a waterway or injecting it underground, and landfilling or incinerating the residual sludge. Some sewer utilities with no treatment capacity gather wastewater and transmit it to another utility that treats it.
- 5) **Stormwater** utilities collect and treat rainwater before discharging it into a body of water such as an ocean or a river. While every city or county addresses stormwater drainage as an integral element of its streets and highways, the stormwater systems that require capital markets financing are typically large in scale and are necessary to avert flooding from heavy seasonal rainfall in hilly areas.
- 6) **Solid waste** utilities collect residential or commercial refuse and dispose of it through landfills, waste-to-energy plants, or other waste-disposal processes. A solid waste system can be complete or collection-only, relying on another municipal or private entity for long-haul removal and disposal through landfill or incineration.

Defining the municipal utility universe

This methodology covers essential-service utilities that operate as departments, boards, or independent authorities of states or local governments. We rate approximately 1,100 utilities in this category (see Exhibit 1). More than 80% of these utilities are water and/or sewer systems. Many of these are distribution or collection systems with no treatment capacity of their own.

EXHIBIT 1

Municipal Utility System Overview



Source: Moody's

¹ This methodology covers gas distribution utilities. These utilities purchase their supply from providers covered under the [Regulated Electric and Gas Utilities](#) methodology, or other providers.

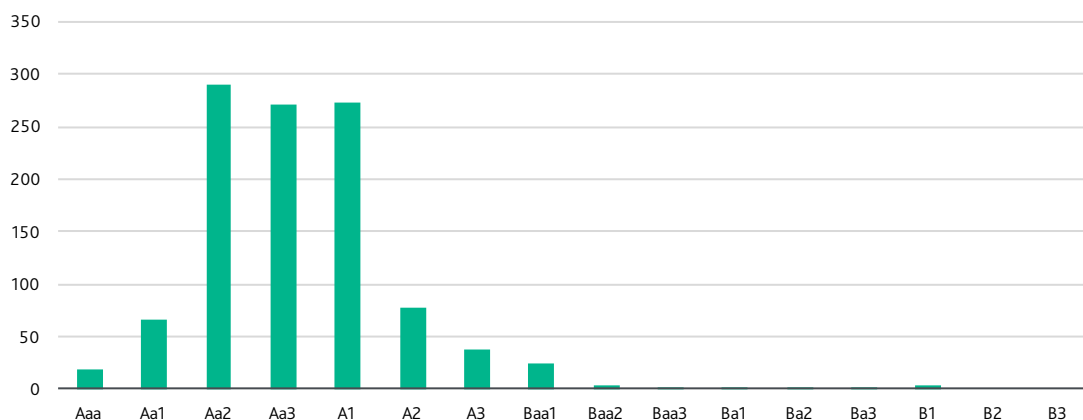
² Only those municipal electric utilities that generate less than 20% of their own power are covered by this methodology. For more information on how we rate electric generation utilities, see [US Public Power Electric Utilities with Generation Ownership Exposure](#) and [US Municipal Joint Action Agencies](#)

States and subdivisions of states, such as counties and cities, often issue bonds secured by the net revenues generated by a system operated directly under their auspices, such as a county water department. Other times, states or state subdivisions create an independent authority or special purpose district that operates the system and issues the bonds. This distinction is usually unimportant for rating purposes, although in some cases a separate authority has beneficial management expertise.

This methodology focuses on revenue bonds for essential-service functions. Other types of public utilities issue bonds backed by revenues charged for services such as telephone, cable television, or even city parking services. These services are typically highly competitive and subject to great elasticity in pricing and utilization. Bonds secured by revenues generated by these services are not rated under this methodology. Also not rated under this methodology are utility revenue bonds whose rating is ultimately [based on a General Obligation guaranty](#). Lastly, the electric utilities covered under this methodology are retail distributors of electricity mostly generated elsewhere.

The credit quality of essential-service utility revenue bonds is generally quite strong. The median rating for this sector is Aa3 (see Exhibit 2), and with very few exceptions these bonds have strong investment grade ratings. More than 85% of essential-service revenue bonds are rated A1 or higher. Half of the eight municipal utilities with speculative-grade ratings as of publication are affiliated with a local government in Chapter 9 bankruptcy³ (see “The Relationship Between General Obligation and Revenue Bond Ratings” below).

EXHIBIT 2
Municipal Utility Rating Distribution



Source: Moody's

The generally high ratings of the sector are a testament to numerous fundamental strengths, including:

- 1) The provision of essential services, usually in a government-protected monopoly
- 2) Typically unregulated and independent rate-setting
- 3) The ability to discontinue service to delinquent accounts and in many cases to put a lien on the property for nonpayment
- 4) Utility cost burdens that are typically low relative to household income and to tax burdens

³ E.g., the Detroit Water Enterprise, the Stockton Water Enterprise, the Detroit Sewer Enterprise, and the Stockton Sewer Enterprise

- 5) A generally strong federal and state regulatory framework that is designed to keep utilities functioning in order to achieve environmental goals
- 6) A “special revenue” designation that may insulate a utility from a parent’s bankruptcy

A sparse history of default, bankruptcy, and serious financial distress helps to underpin the high ratings in this sector. Since 1970, only four Moody’s-rated essential-service utility systems have [defaulted](#)⁴.

EXHIBIT 3

Rated Municipal Utility Defaults Since 1970⁵

Default	Type of System	Year of default	Recovery
Washington Public Power Supply System	Electric Generation	1983	40%
Vanceburg, KY	Electric Generation	1987	100%
Jefferson County, AL	Sewer	2008	54%
Oakdale, CA	Water and sewer	2012	94%

Source: Moody's

We see each of these default situations as unusual and idiosyncratic, with limited relevance to the sector as a whole. We expect the very low rate of default in the sector to continue. For more information, see [US Municipal Bond Defaults and Recoveries, 1970-2013](#).

The Relationship Between General Obligation (GO) and Utility Revenue Bond Ratings

A local government’s GO credit quality may directly affect the strength of its associated utility systems. This section outlines the broad principles that apply when assessing the credit linkages between a local government’s GO and utility debt. These broad principles are meant to enhance transparency around our view of the relationship between related ratings and explain why, in most cases, the ratings of GO and associated utility revenue debt are and will remain relatively close.

Municipal utility debt is generally exposed to similar credit strengths and pressures as the GO and can thus expect to experience simultaneous credit improvement or deterioration. Examples of credit linkages between the GO and utility debt include:

- » Economy: Utility systems usually rely on a coterminous or overlapping economic base and service area.
- » Finances and Debt: Cash can often flow between the two entities, sometimes with a formal funding mechanism. Debt and other long-term liabilities are often paid by the same group of constituents. GO and utility issuers may also be exposed to the same pension plan.
- » Management and Governance: Management of the city and the utility may be the same or have close ties. For instance, city management may appoint the board of the utility or have the power to affect enterprise rates.
- » Capital Markets: The GO and the utility issuer may need to access the same capital markets for funding.

⁴ The Harrisburg Authority, PA’s Resource Recovery Facility bonds [defaulted](#) in 2009. We did not rate these as revenue bonds, but as General Obligation bonds backed by the City of Harrisburg’s GO pledge. Similarly, a [City of Menasha](#), WI default on a steam plant project was rated as a GO credit and not as a municipal utility. Detroit’s water and sewer bonds are under negotiation in the city’s Chapter 9 bankruptcy, though as of this writing those bonds have not defaulted.

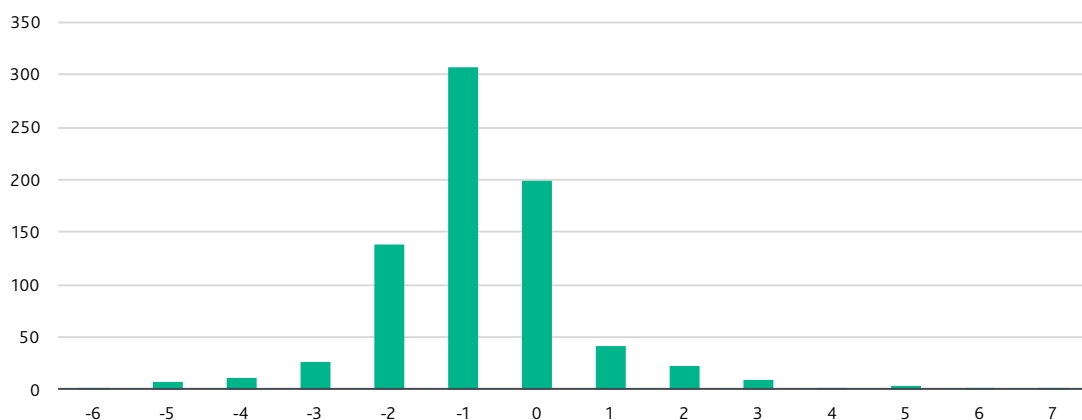
⁵ As electric generation utilities, the Washington Public Power Supply System and Vanceburg electric revenue bonds would not have been rated under the current methodology.

Because of these linkages, in most cases, ratings of a local government's utility debt will be within two notches of its GO rating. Our current rating distribution highlights this relationship, with few utility ratings varying from their respective GO ratings by more than two notches.

EXHIBIT 4

Relationship Between Municipal and Parent GO Ratings

(Negative means utility rating is lower than the GO, positive means it is higher; not all rated utilities have rated parent governments)



Source: Moody's

- » There are, however, cases where a utility may be sufficiently independent from its associated GO rating to justify a larger notching difference. We expect these cases to be rare, and they would likely include several of the following characteristics: An unusually weak GO rating which is driven by idiosyncratic factors less relevant to the utility's credit strength. A non-coterminous service area, so that utility revenues are coming from a larger and more diversified base.
- » A closed loop flow of funds, wherein the GO issuer is unable to access utility revenues.
- » A strict separation of accounts and assets.
- » The absence of rating triggers tied to the GO credit quality in utility financings.
- » Separation of management and governance.

An example of a utility rated more than two notches above its parent government is Detroit Water and Sewerage Department, which benefits from a much larger and diverse service area than the city of Detroit, has separate accounts, and bond indenture that precludes distributions of excess cash flow to the city's general fund. However, Detroit's GO and water and sewerage bonds have become more closely tied due to potential contagion risk that the city's bankruptcy filing would lead to a water and sewerage bonded debt restructuring as part of a plan to restore the city's financial solvency.

Conversely, a utility rating more than two notches below its associated GO generally has one or more of the following characteristics:

- » An unusually weak utility rating which is driven by factors less relevant to the general government's credit strength.
- » A utility service area that is narrower and less diverse than the municipality as a whole
- » A lack of expectation that the general government would transfer funds to assist a utility experiencing financial distress.
- » A strict separation of accounts and assets.
- » The absence of rating triggers tied to the utility credit quality in GO financings.
- » Separation of management and governance.

An example of a utility revenue bond rated more than two notches below the parent's GO is the [St. George Electric Enterprise](#), UT. While the [City of St. George](#) (Aa3) holds healthy reserves and has demonstrated steady operating performance, the electric distribution system has exhibited an unwillingness to raise electric rates fast enough to keep up with rising power supply costs. The electric system maintains narrow liquidity and has failed to generate enough net revenues to cover debt service in multiple years, justifying a significantly lower revenue rating than the related GO. We did, however, [downgrade the city](#) from Aa2 in 2013 partially because of the relationship to the utility funds, illustrating that these relationships are important even in cases when a wider disparity between GO and utility ratings is warranted.

Essential service revenue bonds in bankruptcy

An important property of public utility revenue bonds is that they enjoy a potential moat from a parent's bankruptcy. Under Chapter 9 of the bankruptcy code, a lien on "special revenue" bonds remains valid and enforceable even if the issuer is granted bankruptcy protection.

The potential survival through bankruptcy of a lien on the net revenues of a utility system is a key strength. When a debtor is granted bankruptcy protection, its unsecured assets are subject to an automatic stay, which freezes outflows unless approved by the bankruptcy judge. An asset secured by a lien that is not subject to the automatic stay enjoys a credit advantage over a related General Obligation credit that is subject to the stay.

Further, a special revenue bond is less susceptible to adjustment in bankruptcy if its lien leads to an interpretation of the bonds as enjoying secured status.

Although the bankruptcy code establishes these strengths of a special revenue bond, Chapter 9 remains largely untested. Case law offers few precedents, and only a handful of examples to support the assertion that a special revenue designation protects revenue bonds in bankruptcy.

The political reality is that utility systems are often major cash-generating assets that other stakeholders frequently would like to bring into bankruptcy negotiations. Moreover, bankruptcy judges in some cases have allowed the cash flows generated by special revenue systems to pay the legal costs of related parents in bankruptcy.

It is premature to conclude that utility revenue bonds are completely insulated from Chapter 9 bankruptcies, and the risks and costs of a parent bankruptcy remain considerable.

For more information, please refer to our Special Comment, [Key Credit Considerations for Municipal Governments in Bankruptcy](#).

The Scorecard

The municipal utility scorecard (see Exhibit 5) is a tool providing a composite score of a utility's credit profile based on the weighted factors we consider most important, universal and measurable, as well as possible notching factors dependent on individual credit strengths and weaknesses. The scorecard is designed to enhance the transparency of our approach by identifying critical factors as a starting point for analysis, along with additional considerations that may affect the final rating assignment.

The scorecard is not a calculator. Its purpose is not to determine the final rating, but rather to provide a standard platform from which to begin viewing and comparing municipal utility credits. It therefore acts as a starting point for a more thorough and individualistic analysis.

The scorecard-indicated rating will not match the actual rating in every case, for a number of reasons including the following:

- » Our methodology considers forward-looking expectations that may not be captured in historical data
- » The scorecard is a summary that does not include every rating consideration

- » In some circumstances, the importance of one factor may escalate and transcend its prescribed weight in this methodology

EXHIBIT 5

Municipal Utility Scorecard Factors

Broad Rating Factors	Factor Weighting	Rating Sub-Factor	Sub-factor Weighting
System Characteristics	35%	Asset Condition (Remaining Useful Life)	15%
		Service Area Wealth (Median Family Income)	12.5%
		System Size (O&M)	7.5%
Financial Strength	35%	Annual Debt Service Coverage	15%
		Days Cash on Hand	12.5%
		Debt to Operating Revenues	7.5%
Management	20%	Rate Management	10%
		Regulatory Compliance and Capital Planning	10%
Legal Provisions	10%	Rate Covenant	5%
		Debt Service Reserve Requirement	5%
Total	100%	Total	100%

We intentionally limited our scorecard metrics to major rating drivers that are common to most issuers. Outside of these drivers, we may adjust the grid score for a variety of “below-the-line” adjustments, which are more idiosyncratic factors that are likely not to apply to all issuers, but that can impact credit strength. The scorecard score is the result of the “above-the-line” score based quantitatively on the above-the-line ratings factors, combined with any “below-the-line” notching adjustments. The scorecard score is a guideline for discussion, but does not determine the final rating. The rating is determined by a committee, which considers, but is not bound by, the scorecard score.

Discussion of Key Scorecard Factors

To arrive at a scorecard-indicated rating, we begin by assigning a score for each subfactor. We’ve chosen measures that act as proxies for a variety of different service area characteristics, financial conditions, and governance behaviors that can otherwise be difficult to measure objectively and consistently. Based on the scores and weights for each subfactor, a preliminary score is produced that translates to a given rating level.

We may then move the score up or down a certain number of rating notches based on additional “below-the-line” factors that we believe impact a particular utility’s credit quality in ways not captured by the statistical portion of the scorecard. This is where analytical judgment comes into play. We may also choose to make adjustments to the historical inputs to reflect our forward-looking views of how these statistics may change.

The scorecard score, combined with below-the-line notching, then provides an adjusted score. This adjusted score is not necessarily the final rating. Because some utilities’ credit profiles are idiosyncratic, one factor, regardless of its scorecard weight, can overwhelm other factors, and other considerations may prompt us to consider final ratings that differ from the scorecard-indicated rating.

Below, we discuss each factor and subfactor, as well as the below-the-line adjustments and other considerations we analyze within each category of the methodology.

Factor 1: System Characteristics (35%)

EXHIBIT 6

System Characteristics (35%)

	Aaa	Aa	A	Baa	Ba	B and Below
Asset Condition (15%)	Net Fixed Assets/Annual Depreciation: > 75 years	Net Fixed Assets/Annual Depreciation: 75 years ≥ n > 25 years	Net Fixed Assets/Annual Depreciation: 25 years ≥ n > 12 years	Net Fixed Assets/Annual Depreciation: 12 years ≥ n > 9 years	Net Fixed Assets/Annual Depreciation: 9 Years ≥ n > 6 Years	Net Fixed Assets/Annual Depreciation: ≤ 6 Years
Service Area Wealth (12.5%)	> 150% of US median	150% ≥ US median > 90%	90% ≥ US median > 75%	75% ≥ US median > 50%	50% ≥ US median > 40%	≤ 40% of US median
System Size (7.5%)	Water Only / Sewer Only / Water & Sewer / Combined Utility / Solid Waste: O&M > \$70M	Water Only / Sewer Only / Water & Sewer / Combined Utility / Solid Waste: \$70M ≥ O&M > \$40M	Water Only / Sewer Only / Water & Sewer / Combined Utility / Solid Waste: \$40M ≥ O&M > \$17M	Water Only / Sewer Only / Water & Sewer / Combined Utility / Solid Waste: \$17M ≥ O&M > \$10M	Water Only / Sewer Only / Water & Sewer / Combined Utility / Solid Waste: \$10M ≥ O&M > \$5M	Water Only / Sewer Only / Water & Sewer / Combined Utility / Solid Waste: O&M ≤ \$5M
	Stormwater: O&M > \$15M	Stormwater: \$15M ≥ O&M > \$7.5M	Stormwater: \$7.5M ≥ O&M > \$4M	Stormwater: \$4M ≥ O&M > \$2M	Stormwater: \$2M ≥ O&M > \$1M	Stormwater: O&M ≤ \$1M
	Gas or Electric: O&M > \$115M	Gas or Electric: \$115M ≥ O&M > \$65M	Gas or Electric: \$65M ≥ O&M > \$30M	Gas or Electric: \$30M ≥ O&M > \$15M	Gas or Electric: \$15M ≥ O&M > \$8M	Gas or Electric: O&M ≤ \$8M

Why it matters

This factor on the scorecard measures a utility's capacity to fund its operations and capital needs based on the health of its capital assets, the size and diversity of its operations, and the strength and resources of its service base.

The scope of this factor is broad. Each of the subfactors contributes to an analysis of what magnitude of expenditures is necessary to keep the system functioning, and how large, diverse, and flexible are the resources available to meet those expenditures.

Subfactor 1a: Asset condition (15%)

Input: Net fixed assets divided by most recent year's depreciation, expressed in years

The condition of a utility's capital assets determines its ability to comply with environmental regulations and continue delivering adequate service with existing resources.

Depreciation is an accounting concept that acts as a proxy for the rate at which a utility's plant and equipment are aging. Central to our analysis of capital adequacy is an assessment of how utilities "fund depreciation," meaning make capital replacements and repairs to address aging plant and equipment.

The consequences of failing to fund depreciation can be costly. Implicit in this measure is the concept of deferred capital investment. Utilities that delay investing in their systems, replacing aging plant and equipment, and modernizing their facilities often find it more expensive to do so later. Capital investments are ordinarily more expensive when deferred.

Further, systems whose facilities deteriorate often run afoul of environmental regulations. The failure to fund depreciation, which will manifest as a declining useful remaining life, can lead to sewage overflows, inflow and infiltration problems, or non-compliant wastewater discharges, resulting in civil fines, litigation, or regulatory consent decrees. These are usually more expensive than funding depreciation through a prudent multi-year capital plan that replaces assets as they deteriorate or break down.

The inherent differences between types of utilities are manifest in their component parts, which can have very different useful lives. Because a solid waste utility is largely automotive-based, with collection vehicles and earthmoving equipment at the landfill, the useful life of its assets will be well under 20 years, compared to a water utility whose distribution mains and reservoir have useful lives of 40 to 100 years. We generally acknowledge and address these differences below the line.

Subfactor 1b: Service area wealth (12.5%)

Input: Median family income of the service area, expressed as a percentage of the US median

Most of the costs of operating a utility and maintaining its capital assets are borne by ratepayers. The income of the residents of the service base conveys the capacity of its ratepayers to bear higher rates to fund operations and capital upgrades. The median family income breakpoints in this scorecard are aligned with the ones in our [US Local Government General Obligation Debt](#) methodology.

Utilities that serve lower-income ratepayers may have more difficulty implementing higher rates, if utility costs consume a considerable share of residents' budgets. The US Environmental Protection Agency (EPA) considers wastewater costs exceeding 2% of median household income to be excessive heavy burden, for example, a threshold that would be reached more quickly for a utility serving lower-income ratepayers.

We believe MFI is the best proxy for the wealth of a service base, but other indicators such as the poverty rate, unemployment, home foreclosures, per capita income, and median home value supplement our analysis of ratepayer capacity.

Subfactor 1c: System size (7.5%)

Input: Most recent year operations and maintenance expenditures, expressed in dollars

Larger systems tend to be more diverse and enjoy economies of scale. The size of a system implies the flexibility and resilience not only of its operations, but of its service base.

Small systems present a number of risks. They are less likely to have redundancies, which allow a system to shut down some of its operations in an emergency or to make repairs without interrupting service. A small stand-alone water or sewer system will typically depend upon a single supply of water or a single sewage treatment plant. They are more likely to be exposed to a concentrated customer base. They are more susceptible to the departure of a single large customer. An unexpected capital need is likely to be more costly relative to its annual budget. The engineering and scientific staff is likely to be less sophisticated than a larger system's.

We use different breakpoints for different types of systems in this subfactor, recognizing that not all types of utilities have the same cost structure. For instance, an electric distribution system is more expensive to run than a stormwater system. A distribution-only water system is likely to have a lower, more predictable cost base, but also depend on an external system for water supply and pay prices largely out of their control.

Below-the-line adjustments

Additional service area economic strength or diversity: We would use this adjustment, up or down, if the MFI statistic incompletely or inaccurately depicts that capacity of the service base to bear higher rates.

Significant customer concentration: A large exposure to a single user or industry, or a small number of users, poses substantial risks that might not be captured in MFI. We may adjust the scorecard rating down if a large share of a utility's revenues comes from one or a small number of customers, or from a single industry. We would be more likely to use this adjustment for volatile, unpredictable, and mobile industries than for longer-standing, more stable ones.

Revenue per customer greatly over/under regional average: Revenue per customer conveys additional information about users' capacity for higher rates that might not be captured in MFI. We might adjust the above-the-line rating, up or down, if revenue per customer implies higher or lower ability to increase rates than MFI suggests.

Exposure to weather volatility, extreme conditions or market fluctuations: Large amounts of rain that infiltrate pipes or storms that destroy equipment are examples of credit risks that could result in below-the-line adjustments. Weather can also affect the prices that distribution systems pay third-party providers for electricity or natural gas.

Resource vulnerability: Water, gas, and electric distribution utilities sell a product whose availability can be limited or expensive in some cases. For instance, a water provider in a [drought-stricken region](#) may have to purchase expensive third-party water, and see declines in billable flow due to conservation efforts. We may adjust the scorecard rating down if the availability of water, an adequate gas supply, or a dependable source of electricity is vulnerable or in doubt.

Sizeable or insufficient capacity margin: Our useful remaining life calculation is designed to assess the quality of existing capital assets, but it does not measure the adequacy of a system's capacity relative to demand. Areas that are growing need more water, gas, and electricity, and place greater demands on wastewater and trash disposal utilities. Systems that are close to capacity may face greater capital costs to expand in the future, suggesting larger debt burdens and posing additional risks that we may adjust the scorecard downward for. Alternately, systems with ample capacity may be notched up, given the lack of capital spending requirements implied by the excess capacity. Further, excess capacity can sometimes imply a revenue-generating opportunity, since utilities can often sell their product or service to other parties.

Weak depreciation practices relative to industry norms: Utilities typically have some flexibility to determine the depreciation schedules of their assets. Utilizing unreasonably long useful lives or employing other practices that distort depreciation schedules would also distort our remaining useful life calculation. We may notch a score down if an unreasonable depreciation schedule is inflating a utility's remaining useful life. Less likely, we may notch a score up if an unusually rapid depreciation schedule understates remaining useful life.

Other

Factor 2: Financial Strength (35%)

EXHIBIT 7

Financial Strength (35%)	Aaa	Aa	A	Baa	Ba	B and Below
Annual Debt Service Coverage (15%)	> 2.00x	2.00x ≥ n > 1.70x	1.70x ≥ n > 1.25x	1.25x ≥ n > 1.00x	1.00x ≥ n > 0.70x	≤ 0.70x
Days Cash on Hand (12.5%)	> 250 Days	250 Days ≥ n > 150 Days	150 Days ≥ n > 35 Days	35 Days ≥ n > 15 Days	15 Days ≥ n > 7 Days	≤ 7 Days
Debt to Operating Revenues (7.5%)	< 2.00x	2.00x < n ≤ 4.00x	4.00x < n ≤ 7.00x	7.00x < n ≤ 8.00x	8.00x < n ≤ 9.00x	≥ 9.00x

Why it matters

The financial health of a utility determines its flexibility to respond to contingencies, its resilience against a short-term shock, and its cushion against a long-term unfavorable trend.

We measure utilities' financial health by looking at cash and other liquid reserves, the burden that debt places on operations, and the magnitude by which revenues are sufficient to meet expenditures.

Subfactor 2a: Annual debt service coverage (15%)

Input: Most recent year's net revenues divided by most recent year's debt service, expressed as a multiple

Debt service coverage is a core statistic assessing the financial health of a utility revenue system. The magnitude by which net revenues are sufficient to cover debt service shows a utility's margin to tolerate business risks or declines in demand while still assuring repayment of debt. Higher coverage levels indicate greater flexibility to withstand volatile revenues, unexpected outflows, or customer resistance to higher rates.

Utilities usually enter into a debt service coverage covenant under which they pledge to achieve a given level of coverage each year. The covenant ensures that the utility utilizes its assets to generate sufficient income to pay bondholders.

The analysis of a utility system's debt service coverage demands ample context. If debt service escalates in future years, then the utility's current net revenues may be sufficient to cover debt service this year, but not in the future. Systems with greater revenue stability can operate comfortably at lower coverage levels. Systems with greater capital needs are likely to incur more debt, which will lead to increased debt service and decreased coverage. The debt service coverage calculation is the basis for a comprehensive analysis of a utility's financial flexibility and trend over the long term.

Debt service coverage covenants define a calculation method. These calculation methods vary, for example in the inclusion or exclusion of connection fees. Our coverage calculation will frequently differ from the coverage utilities report for purposes of complying with their rate covenants. Frequently, our analysis will consider several types of coverage, including maximum annual debt service (MADS) coverage, annual debt service coverage, coverage with and without connection fees, and coverage as calculated for the coverage covenant. For entry on the scorecard, we include connection fees in revenues, recognizing that these are pledged revenues that are usually generated annually and are an important source of funding for expansion. If connection fees are particularly volatile, or if they represent an inordinate share of revenues, we may adjust below the line.

Subfactor 2b: Days cash on hand (12.5%)

Input: Unrestricted cash and liquid investments times 365 divided by operating expenses, expressed in days

Cash is the paramount resource utilities have to meet expenses, cope with emergencies, and navigate business interruptions. Utilities with a lot of cash and cash equivalents are able to survive temporary disruptions and cash flow shortfalls without missing important payments. A low cash balance indicates poor flexibility to manage contingencies.

We include in this measure any cash or cash-equivalent that is both unrestricted and liquid. The measure does not include cash held in a debt service reserve fund, unspent bond proceeds, or cash that is restricted for capital.

Subfactor 2c: Debt to operating revenues (7.5%)

Input: Net debt divided by most recent year's operating revenues, expressed as a multiple

A utility's debt profile determines its leverage and fixed costs. Systems that carry a lot of debt have less ability to reduce costs if demand shrinks, and are generally more challenged to achieve higher debt service coverage.

A greater debt burden may also prohibit a utility from funding necessary capital upgrades, if a covenant prevents the issuer from incurring the debt necessary to fund those upgrades.

Below-the-line adjustments

Debt service coverage (annual or MADS) below key thresholds: A debt service coverage ratio below 1 times is an important threshold, because coverage below 1 times indicates the utility is not fully covering debt service with income generated from operations. If a utility fails to achieve 1 times coverage, we may adjust the score down to reflect the financial imbalance of the utility's operations. Another key threshold that would likely prompt us to adjust the score down is if coverage were to fall below the utility's coverage covenant, even if that covenant is higher than 1 times. Management's willingness and ability to operate the system for bondholders' benefit is a crucial credit consideration, and a breach of covenant calls that willingness and ability into question. A coverage level that impedes the issuance of additional bonds under the utility's additional bonds covenant could also prompt us to adjust the score down, if we think it would prevent the utility from funding necessary capital upgrades.

Constrained liquidity position due to oversized transfers: It is [common for utilities to transfer cash](#) to their parent governments regularly, either to share overhead costs, make payments in lieu of taxes for occupied property, or to help fund shared infrastructure. It is also common for parent governments to tap utilities' cash to fund General Fund operations. We may notch a utility's score down if these types of transfers are large and begin to strain its own liquidity. We are more likely to make this adjustment if the parent government is operationally reliant on utility transfers and has the authority to increase them, particularly if the parent is struggling financially. Even if a utility has never transferred cash to its parent, such transfers remain a possibility⁶, one of the reasons for the relationship between a revenue rating and the GO rating of its parent.

Outsized capital needs: A utility with significant capital needs will likely need to incur additional debt not communicated in the existing debt burden. We may adjust the score downward for utilities under regulatory consent decree, or otherwise with great capital needs, that are likely to increase their debt burdens.

⁶ Unless the utility's flow of funds is closed-loop. A closed-loop flow of funds is stronger than an open one for this very reason.

Oversized adjusted net pension liability relative to debt, or significant actuarial required contribution underpayment: Employees of public utilities are usually members of a municipal pension plan. Most utilities either sponsor their own plan or participate in another entity's plan, and are responsible for funding their share of the plan's pension liabilities. We may adjust the score down if this liability is especially large, or if the utility has underfunded its contributions.

Significant exposure to puttable debt and/or swaps, or other unusual debt structure: The risks of a debt portfolio can be magnified if it is significantly composed of puttable debt. Utilities generally set rates with the intention of covering operating expenses and debt service in the current year. A debt put, accelerated amortization under a term-out, or other unexpected call on a utility's resources can impose immediate and substantial, unbudgeted cash outflows and upend that intention. We may notch a score down, potentially by several notches, if the composition of a debt portfolio, or cash-flow demands or unfavorable valuation of a swap, communicates a greater degree of risk than the existing debt burden. The lesson of Jefferson County, Alabama, which defaulted on puttable sewer warrants in 2008 when they were tendered to their liquidity banks, applies here.

Factor 3: Management (20%)

EXHIBIT 8

Management (20%)	Aaa	Aa	A	Baa	Ba	B and Below
Rate Management (10%)	Excellent rate-setting record; Rates and cost adjustments in 20 days or less;	Strong rate-setting record; Rates and cost adjustments in 21 - 50 days; Small and well-defined General Fund transfers governed by policy	Average rate-setting record; Rates and cost adjustments 51 - 80 days; Moderate General Fund transfers governed by policy	Adequate rate-setting record; Rates and cost adjustments 81 - 120 days; Large General Fund transfer not governed by policy	Below average rate-setting record; Sizeable General Fund transfer not governed by policy	Record of insufficiently adjusting rates; Large General Fund transfer not governed by policy
Regulatory Compliance and Capital Planning (10%)	Fully compliant OR proactively addressing compliance issues; Maintains sophisticated and manageable Capital Improvement Plan that addresses more than a 10-year period	Actively addressing minor compliance issues; Maintains comprehensive and manageable 10-year Capital Improvement Plan	Moderate violations with adopted plan to address issues; Maintains manageable 5-year Capital Improvement Plan	Significant compliance violations with limited solutions adopted; Maintains single year Capital Improvement Plan	Not fully addressing compliance issues; Limited or weak capital planning	Not addressing compliance issues; No capital planning

Why it matters

If the legal provisions establish the minimum level of financial margin at which a utility must be run, the utility's management determines the actual level at which it is run.

Utility management refers to the dynamics of setting rates, planning for capital spending, budgeting for annual expenditures, and complying with environmental regulations. All of these factors interplay with one another to determine the credit strength of a utility system.

The scorecard captures two crucial aspects of management: rate-setting and capital planning. These two aspects encompass most of what is important in running a utility: keeping the system in good working order, and paying for it.

Subfactor 3a: Rate management (10%)

User rates are the primary, and sometimes only, mechanism utilities employ to pay for their operations.

Ideally, rates increase marginally and steadily, rather than choppily. It is common for utilities to split their rates into a “base” charge (flat rate charged to all users) plus a “volumetric” charge (per unit costs based on flow/usage). Utilities funded to a greater extent by the volumetric charge face greater risks, since volume can be economically sensitive or decline because of a shift in consumption patterns.

Management’s track record at setting rates appropriately and increasing them when necessary drives this score. We tend to give higher scores to utilities that set rate structures under which increases are automatic, and do not require annual approval for implementation.

Embedded into this factor is the length of time required to implement a rate increase. Many public utilities enjoy the [authority to set their own rates](#), and can enact a rate increase in short order by majority vote of the governing board. Some utilities must give the public a few weeks or months notice before increasing rates, or choose to do so by policy or practice. Some utilities require state approval to increase rates. Utilities that need state approval often have to file a rate case subject to public objection, and in some cases the state takes a long time to approve them or [denies the full rate increase](#).

The longer it takes a utility to implement a rate increase, the less flexibility it has to quickly generate new revenues when faced with cash flow shortfalls.

Subfactor 3b: Regulatory compliance and capital planning (10%)

The public utility sector is heavily regulated. Most public utilities are regulated by federal as well as state agencies.

The EPA enforces the Safe Drinking Water Act for water distribution utilities, the Clean Water Act for sanitary sewer and stormwater utilities, the Resource Conservation and Recovery Act for solid waste disposal systems, and the Clean Air Act for electric utilities. These statutes, and the methods employed to enforce them, are continually evolving, often intensifying over time. Additionally, many states have passed their own environmental regulations and are active enforcers.

This scorecard factor assesses utilities’ compliance with relevant regulations and their plans for the capital expenditures required to comply in the future.

In addition to achieving environmental compliance, proper capital planning ensures the continued delivery of the product or service and the ongoing generation of revenues.

During our reviews, we look for indications of potential compliance gaps, such as environmental litigation, a delay in renewing a permit, or a [consent decree](#) with a state or federal enforcement body.

Below-the-line adjustments

Unusually strong or weak capital planning: Continued violations of environmental laws and the associated litigation can impose extraordinary costs on utilities. We may notch the score down if these

costs threaten to overwhelm a system's resources, in the form of a large consent decree, lawsuit, or other costs. Alternately, we may notch the score up if a utility's capital planning is particularly sophisticated or forward-looking.

Factor 4: Legal provisions (10%)

EXHIBIT 9

US Municipal Utility Revenue Debt

Legal Provisions (10%)	Aaa	Aa	A	Baa	Ba	B and Below
Rate Covenant (5%)	> 1.30x	$1.30x \geq n > 1.20x$	$1.20x \geq n > 1.10x$	$1.10x \geq n > 1.00x$		$\leq 1.00x$
Debt Service Reserve Requirement (5%)	DSRF funded > MADS	DSRF funded at MADS	DSRF funded at lesser of standard 3-prong test	DSRF funded at less than 3-prong test OR springing DSRF	NO explicit DSRF; OR funded with speculative grade surety	

Why it matters

The legal provisions of a public utility revenue bond form the backbone of its security.

When a municipality assigns its General Obligation pledge to a bond, it has promised to do whatever it has to do to cover debt service, in most cases from any revenues or resources at its disposal.

A utility revenue bond enjoys no such open-ended pledge, making the legal edifice of the bond critical to bondholder security. Most commonly, the legal security for municipal utility revenue bonds is a lien on the net revenues of the system. Occasionally, bondholders enjoy a lien on the gross revenues of a system. We ordinarily do not see a gross revenue pledge as materially stronger than a net revenue pledge, because systems need to pay operating and maintenance costs in order to remain functional.

The linchpin of a bond's legal structure is its covenants: the legal compulsions the public utility agrees to when issuing the bonds.

Utilities abide by many different types of covenants. We consider three to be the most important: the debt service coverage covenant, the additional bonds test, and the debt service reserve fund. Also crucial in the analysis of a revenue bond's legal structure is whether the flow of funds is open-loop (accessible by another government entity) or closed.

Strong covenants bind the utility to utilize its assets to benefit bondholders by operating with a comfortable financial margin, not taking on too much debt, and maintaining adequate cash available to pay debt service. Weak or nonexistent covenants allow the utility to operate on a thin margin or even at a net loss, incur a lot of leverage, transfer its money to other government entities, or maintain inadequate cash, in ways that are detrimental to bondholders.

Covenants specify the minimum factors management must legally abide by. Utilities frequently exceed the minimum. Many of our ratings represent the expectation of performance at levels that exceed the covenants.

Subfactor 4a: Rate covenant (5%)

Input: Covenant governing net revenues (operating revenues minus operating expenditures net of depreciation) divided by annual debt service, expressed as a multiple

The rate covenant is a legal pledge to set rates such that net revenues will be sufficient to cover debt service at a prescribed level. For example, a covenant may bind a utility to ensure that net revenues cover debt service by 1.2 times. If net revenues fall short of this covenant in one year, the utility must raise rates to achieve a compliant coverage level the following year.

The coverage covenant takes many forms. Some utilities pledge for net revenues to cover current year annual debt service by a given level, others pledge to cover average annual debt service throughout the life of the bonds at that level. A strong coverage requirement would be for net revenues to cover maximum annual debt service (MADS) by a certain level.

Some coverage covenant formats are materially weaker than this. Some utilities allow a “rolling” calculation, which includes outstanding cash from prior years’ surpluses as part of the resources available to cover debt service. Many rate covenants allow connection fees to be included in available operating revenues.

The above-the-line coverage factor assumes the covenant is an annual debt service coverage calculation. We can adjust for any departures from this format below the line, up or down.

Subfactor 4b: Debt service reserve requirement (5%)

Input: Debt service reserve requirement

Many issuers agree to hold a specified amount of cash or other resources in a debt service reserve fund (DSRF), which the trustee can tap to pay debt service in the event that net revenues are inadequate. The DSRF covenant ordinarily requires the utility to replenish any draws from the DSRF.

The DSRF protects bondholders by assuring the payment of debt service even if net revenues fall short in one year.

DSRF funds can be funded with cash, or with surety policies from an insurer. We generally consider cash to be superior to a surety, although this is unlikely to materially affect the rating as long as the surety provider is rated investment grade.

One commonly used DSRF requirement is known as the “three-pronged test.” Under tax law, the Internal Revenue Service limits the earning of interest on proceeds of a tax-exempt bond unless the invested proceeds comply with the three-pronged test. Under that test, the DSRF must be the lesser of 10% of principal, MADS, or 1.25 times average annual debt service. A DSRF set at the three-pronged test is usually weaker than one funded at MADS.

Recent years have seen a trend of revenue bonds issued without a DSRF. This has resulted in a number of utilities with some bonds secured by a DSRF and other parity bonds secured by the same lien but no DSRF. We have rarely distinguished ratings between these parity bonds. The DSRF is a last-resort security measure, and most utilities comply with their coverage covenants and never have to tap their DSRF. We are most likely to distinguish between DSRF-secured bonds and bonds with no DSRF if the system holds narrow liquidity. A system operating with abundant liquidity can use its operating cash to meet debt service shortfalls, effectively executing a similar function to the DSRF. The

combination of narrow liquidity and no DSRF exposes bondholders to greater risks of interrupted debt service payments, and is therefore more likely to be reflected in ratings.

For a utility whose debt is mostly, but not all, secured by a DSRF, we will still enter the DSRF requirement into the scorecard. For a utility whose debt is mostly not secured by a DSRF, we will adjust the DSRF entry downward⁷.

Below-the-line adjustments

Coverage covenant other than annual debt service: Our input for the coverage covenant assumes the coverage refers to net revenue coverage of annual debt service. A “rolling” coverage covenant that includes outstanding cash, or some other modification that weakens the meaning of the covenant, may prompt us to notch the score down. Conversely, a MADS coverage covenant may prompt us to notch the score up.

Structural enhancements/complexities: The scorecard is designed to capture covenants as they are most commonly constituted, but cannot account for the myriad structures and complexities that arise in bond transactions throughout the sector. Enhancements such as a lock-box structure for debt service may lead us to notch the score up. Other shortcomings, such as a weak additional bonds test or the inclusion of cash in a coverage covenant, may lead us to notch the score down. Any characteristic of the legal provisions of a bond transaction may lead us to conclude that the scorecard does not adequately capture its risk profile.

⁷ For example, if 1/3 of a utility's debt is secured by a DSRF funded at MADs and 2/3 is not secured by a DSRF at all, we may enter the DSRF requirement as a Baa.

Appendix A: Municipal Utility Revenue Bond Scorecard

EXHIBIT 10

	Aaa	Aa	A	Baa	Ba	B and Below
System Characteristics (35%)						
Asset Condition (15%)	Net Fixed Assets/Annual Depreciation: > 75 years	Net Fixed Assets/Annual Depreciation: 75 years ≥ n > 25 years	Net Fixed Assets/Annual Depreciation: 25 years ≥ n > 12 years	Net Fixed Assets/Annual Depreciation: 12 years ≥ n > 9 years	Net Fixed Assets/Annual Depreciation: 9 Years ≥ n > 6 Years	Net Fixed Assets/Annual Depreciation: ≤ 6 Years
Service Area Wealth (12.5%)	> 150% of US median	150% ≥ US median > 90%	90% ≥ US median > 75%	75% ≥ US median > 50%	50% ≥ US median > 40%	≤ 40% of US median
System Size (7.5%)	Water Only / Sewer Only / Water & Sewer / Combined Utility / Solid Waste:	Water Only / Sewer Only / Water & Sewer / Combined Utility / Solid Waste:	Water Only / Sewer Only / Water & Sewer / Combined Utility / Solid Waste:	Water Only / Sewer Only / Water & Sewer / Combined Utility / Solid Waste:	Water Only / Sewer Only / Water & Sewer / Combined Utility / Solid Waste:	Water Only / Sewer Only / Water & Sewer / Combined Utility / Solid Waste:
	O&M > \$70M	\$70M ≥ O&M > \$40M	\$40M ≥ O&M > \$17M	\$17M ≥ O&M > \$10M	\$10M ≥ O&M > \$5M	O&M ≤ \$5M
	Stormwater:	Stormwater:	Stormwater:	Stormwater:	Stormwater:	Stormwater:
	O&M > \$15M	\$15M ≥ O&M > \$7.5M	\$7.5M ≥ O&M > \$4M	\$4M ≥ O&M > \$2M	\$2M ≥ O&M > \$1M	O&M ≤ \$1M
	Gas or Electric:	Gas or Electric:	Gas or Electric:	Gas or Electric:	Gas or Electric:	Gas or Electric:
	O&M > \$115M	\$115M ≥ O&M > \$65M	\$65M ≥ O&M > \$30M	\$30M ≥ O&M > \$15M	\$15M ≥ O&M > \$8M	O&M ≤ \$8M
Financial Strength (35%)						
Annual Debt Service Coverage (15%)	> 2.00x	2.00x ≥ n > 1.70x	1.70x ≥ n > 1.25x	1.25x ≥ n > 1.00x	1.00x ≥ n > 0.70x	≤ 0.70x
Days Cash on Hand (12.5%)	> 250 Days	250 Days ≥ n > 150 Days	150 Days ≥ n > 35 Days	35 Days ≥ n > 15 Days	15 Days ≥ n > 7 Days	≤ 7 Days
Debt to Operating Revenues (7.5%)	< 2.00x	2.00x < n ≤ 4.00x	4.00x < n ≤ 7.00x	7.00x < n ≤ 8.00x	8.00x < n ≤ 9.00x	≥ 9.00x
Management (20%)						
Rate Management (10%)	Excellent rate-setting record; Rates and cost adjustments in 20 days or less;	Strong rate-setting record; Rates and cost adjustments in 21 - 50 days; Small and well-defined General Fund transfers governed by policy	Average rate-setting record; Rates and cost adjustments 51 - 80 days; Moderate General Fund transfers governed by policy	Adequate rate-setting record; Rates and cost adjustments 81 - 120 days; Large General Fund transfer not governed by policy	Below average rate-setting record; Sizeable General Fund transfer not governed by policy	Record of insufficiently adjusting rates; Large General Fund transfer not governed by policy
Regulatory Compliance and Capital Planning (10%)	Fully compliant OR proactively addressing compliance issues; Maintains sophisticated and manageable Capital Improvement Plan that addresses more than a 10-year period	Actively addressing minor compliance issues; Maintains comprehensive and manageable 10-year Capital Improvement Plan	Moderate violations with adopted plan to address issues; Maintains manageable 5-year Capital Improvement Plan	Significant compliance violations with limited solutions adopted; Maintains single year Capital Improvement Plan	Not fully addressing compliance issues; Limited or weak capital planning	Not addressing compliance issues; No capital planning
Legal Provisions (10%)						
Rate Covenant (5%)	> 1.30x	1.30x ≥ n > 1.20x	1.20x ≥ n > 1.10x	1.10x ≥ n > 1.00x		≤ 1.00x
Debt Service Reserve Requirement (5%)	DSRF funded > MADS	DSRF funded at MADS	DSRF funded at lesser of standard 3-prong test	DSRF funded at less than 3-prong test OR springing DSRF	NO explicit DSRF; OR funded with speculative grade surety	

Adjustments/Notching Factors

Factor 1: System Characteristics

Additional service area economic strength or diversity

Significant customer concentration

Revenue-per-customer greatly over/under regional average

Exposure to weather volatility or extreme conditions

Resource vulnerability (1/3 or greater)

Sizable or insufficient capacity margin

Weak depreciation/reinvestment practices relative to industry norms

Other analyst adjustment to System Characteristics (Specify)

Factor 2: Financial Strength

Debt Service Coverage (Annual or MADS) below key thresholds: Additional Bonds Test and 1.00x coverage

Constrained liquidity position due to oversized transfers

Oversized capital needs

Oversized ANPL relative to debt or significant ARC under-payment

Significant exposure to puttable debt and/or swaps or other unusual debt structure

Other analyst adjustment to Financial Strength factor (Specify)

Factor 3: Legal Provisions

Structural Enhancements/Complexities

Other analyst adjustment to Legal Provisions factor (Specify)

Factor 4: Management

Unusually strong or weak operational or capital planning

Other analyst adjustment to Management factor (Specify)

Other

Credit Event/Trend not yet reflected in existing data set

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