

CREDIT OPINION

9 April 2020

Update

✓ Rate this Research

RATINGS

Spire Missouri Inc.

Domicile	St. Louis, Missouri, United States
Long Term Rating	A1
Type	First Mortgage Bonds - Dom Curr
Outlook	Stable

Please see the [ratings section](#) at the end of this report for more information. The ratings and outlook shown reflect information as of the publication date.

Analyst Contacts

Jeffrey F. Cassella +1.212.553.1665
VP-Sr Credit Officer
jeffrey.cassella@moodys.com

Dexter East +1.212.553.3260
Associate Analyst
dexter.east@moodys.com

Michael G. Haggarty +1.212.553.7172
Associate Managing Director
michael.haggarty@moodys.com

Jim Hempstead +1.212.553.4318
MD-Utilities
james.hempstead@moodys.com

CLIENT SERVICES

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

Spire Missouri Inc.

Update to credit analysis

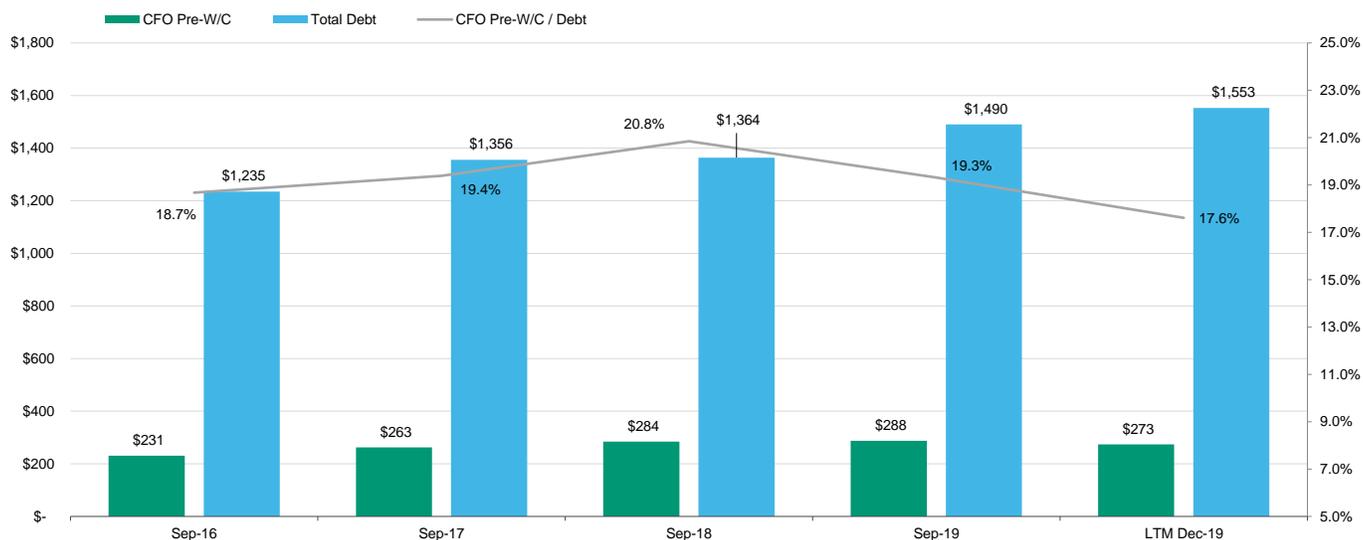
Summary

Spire Missouri's credit profile reflects its low business risk as a regulated natural gas local distribution company (LDC) and the credit supportive regulatory framework for gas utilities in Missouri, which includes timely investment and cost recovery mechanisms. It also reflects the strong security provided by a first mortgage lien on the utility's assets, which secure all of the company's rated bonds. The credit profile incorporates Spire Missouri's predictable cash flow generation and typically stable financial profile. For the 12-months ended 31 December 2019, Spire Missouri's ratio of cash flow from operations pre-working capital changes (CFO pre-W/C) to debt was 17.6%, lower than historical levels. We expect the company's financial metrics to improve going forward such that Spire Missouri's ratio of CFO pre-W/C to debt should be in the 19-20% range. The credit is constrained by financial metrics that were low in 2019 compared to historical levels, ongoing financing demands of an elevated capital investment program to upgrade pipeline infrastructure and the significant leverage (about 30% of consolidated long-term debt) at its parent company, Spire Inc. (Baa2 stable), which requires dividend support from Spire Missouri.

Recent developments

The rapid and widening spread of the coronavirus outbreak, deteriorating global economic outlook, falling oil prices, and asset price declines are creating a severe and extensive credit shock across many sectors, regions and markets. The combined credit effects of these developments are unprecedented. As events related to the coronavirus unfold, there is a higher than usual degree of uncertainty around all macro economic forecasts. Therefore, in our analysis, we are taking into consideration that there is a wider range of potential outcomes, including more severe downside scenarios, over the course of the year. We expect Spire Missouri to be relatively resilient to these recessionary pressures.

Exhibit 1

Historical CFO Pre-W/C, Total Debt and ratio of CFO Pre-W/C to Debt (\$ MM)

Source: Moody's Financial Metrics

Credit strengths

- » Low business risk profile as a regulated natural gas distribution utility
- » Credit supportive Missouri regulatory environment
- » Several investment and cost recovery mechanisms that allow for stable and predictable cash flow generation

Credit challenges

- » Elevated capital investment program that will continue to require debt financing
- » Limited financial flexibility as financial metrics are lower than historical levels
- » Constrained by substantial leverage at the parent

Rating outlook

The stable outlook reflects our expectation that the utility's financial profile will have adequate financial flexibility going forward despite financial metrics that were lower than historical levels in 2019, with the ratio of cash flow pre-W/C to debt improving to about 19%-20%, and that the credit supportive regulatory framework in Missouri will continue.

The stable outlook also incorporates our view that parent, Spire Inc., will not undertake significant debt financed acquisitions, increase unregulated investments beyond current expectations (i.e., maintaining unregulated activities at less than 10% of EBITDA) or execute any shareholder friendly activities that will be a detriment to the credit quality of the utility.

Factors that could lead to an upgrade

Spire Missouri could be upgraded if the Missouri regulatory environment becomes more credit supportive through the allowance of additional recovery mechanisms such as full revenue decoupling, or the company's financial metrics improve such that its ratio of CFO pre-W/C to debt approaches the mid-20% range on a sustained basis.

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

A rating upgrade of the utility is predicated on the parent not significantly increasing either its unregulated businesses or parent level debt as a proportion of consolidated debt that would result in contagion risk at its LDCs.

Factors that could lead to a downgrade

Spire Missouri could be downgraded if the regulatory environment in Missouri becomes less credit supportive or contentious through a reduction in the timeliness of cost recovery or if the utility's financial metrics deteriorate such that its ratio of CFO pre-W/C to debt remains below 19% on a sustained basis.

The credit could also be pressured if contagion risk to the parent or affiliate businesses increases due to incremental leverage resulting from additional acquisitions; from increased unregulated business investments; or if the parent undertakes aggressive debt-financed shareholder friendly activities such that the risk profile of the utilities deteriorates.

Key indicators

Exhibit 2

Spire Missouri Inc. [1]

	Sep-16	Sep-17	Sep-18	Sep-19	LTM Dec-19
CFO Pre-W/C + Interest / Interest	6.4x	6.8x	6.4x	6.4x	6.0x
CFO Pre-W/C / Debt	18.7%	19.4%	20.8%	19.3%	17.6%
CFO Pre-W/C – Dividends / Debt	11.8%	17.3%	18.2%	16.1%	15.0%
Debt / Capitalization	43.3%	43.1%	45.8%	46.7%	47.1%

[1] All ratios are based on 'Adjusted' financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.

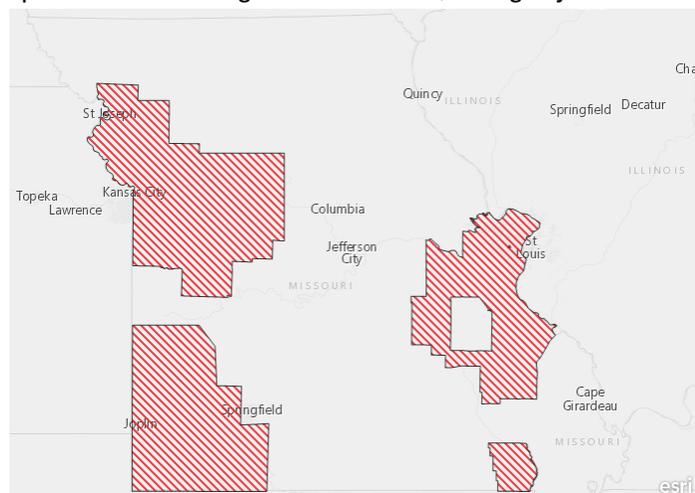
Source: Moody's Financial Metrics

Profile

Spire Missouri is a regulated natural gas local distribution company serving around 1.2 million customers, primarily residential, in Missouri, including the cities of St. Louis and Kansas City. The company is composed of two utility segments, Spire Missouri East (fka Laclede Gas Company), and Spire Missouri West (fka Missouri Gas Energy, or MGE). Spire Missouri is the largest utility subsidiary of Spire Inc. (Baa2 stable), a public utility holding company based in St. Louis, Missouri, and represents about 55% of Spire Inc.'s consolidated operating income. Spire Missouri is regulated by the Missouri Public Service Commission (MoPSC).

Exhibit 3

Spire Missouri is the largest LDC in Missouri, serving major cities like St. Louis and Kansas City.



© 2018 S&P Global Market Intelligence. All rights reserved. Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors

Source: S&P Global Market Intelligence

Detailed credit considerations

LOW-RISK BUSINESS PROFILE AS A REGULATED NATURAL GAS DISTRIBUTION UTILITY

As a regulated LDC, Spire Missouri has a business profile that is lower risk compared to vertically integrated regulated electric utilities since LDCs typically have limited risk exposure to volume and/or price volatility of natural gas distributed to customers. In addition, LDCs do not encounter the operating risks related to power generation and the higher capital expenditures that such generation usually entails.

Spire Missouri's location in the Midwest presents some distinct operational opportunities that differentiates it from other LDCs. Numerous interstate pipelines cross its service territory transporting gas to and from the Gulf coast and the Mid-Continent supply regions. Consequently, Spire Missouri holds transportation and storage capacity on a number of pipelines, which the company can temporarily lend (capacity release) or use to sell excess gas (off-system sales) when it does not need it. These capacity release and off-system sales have been a modest addition to Spire Missouri's revenues, accounting for about 3% of FY 2019 total revenues. Spire Missouri is allowed to retain up to 25% of the net margins achieved as a result of such off-system sales and capacity releases, while customers receive 75%.

Spire Missouri serves over 1.1 million residential customers, which account for about 90% of total customers and over 70% of total revenues. We view the company's combined high residential customer base as a credit positive given the usual stability of such revenues.

REFUND ORDERED FOR PREVIOUSLY APPROVED ISRS RECOVERY, A CREDIT NEGATIVE

In November 2019, the Missouri Western District Court of Appeals ordered Spire Missouri to refund customers certain costs deemed not eligible for recovery since 2016, denying the utility's request for appeal of its infrastructure system replacement surcharge (ISRS) cost-recovery mechanism with the MoPSC. The Court ruled that certain capital expenditures, such as certain intermittent plastic materials (generally used for repairs), were not eligible for ISRS recovery. The ISRS mechanism enables Spire Missouri to recover costs and earn a return on investments associated with its pipeline replacement and safety program. Following the ruling, in January 2020 Spire Missouri filed an application with the State Supreme Court for them to review the case. Subsequently in March 2020 the court declined to take up the case. After the rehearing was denied by the State Supreme Court, the matter was remanded back to the MoPSC where a final decision is expected between by July, possibly sooner.

The court's rulings are credit negative for Spire Missouri because it indicates a disagreement between the utility and a major consumer advocacy group, the Missouri Office of Public Counsel (OPC), on how the ISRS mechanism is applied and used for cost recovery on the company's pipeline replacement program. The Court of Appeals called for a refund of up to \$12.2 million related to ISRS revenue collected from customers deemed unrecoverable during 2016-18. Additional ISRS revenues are also under appeal related to the company's January 2019 ISRS filings with annual authorized revenue of \$12.4 million. The Court's decision was returned to the MoPSC, which will determine the appropriate refund, if any, at a later date.

Spire Missouri could request recovery for any disallowed costs deemed not recoverable through the ISRS mechanism in its next general rate case filing. The utility is required to file its next rate case by October 2021, but may choose to file it sooner depending on the final outcome of the ISRS refund issue. Any delay in cost recovery would increase regulatory lag, the time between when a utility makes investments and incurs costs and recovers them from customers through increased rates, a credit negative.

CREDIT SUPPORTIVE MISSOURI REGULATORY ENVIRONMENT TYPICALLY ALLOWS FOR TIMELY COST RECOVERY

The company's credit supportive risk profile is enhanced by several timely cost recovery mechanisms afforded by the MPSC. The most influential of these are the purchased gas adjustment (PGA), a weather normalization adjustment rider (WNAR) and, typically, the Infrastructure System Replacement Surcharge (ISRS), as illustrated in the table below. Notwithstanding the aforementioned ISRS appeal, under the ISRS rider, Spire Missouri is required to maintain a 3 year filing cycle, in which the company can make revenue adjustment filings every six months. In addition to this rider, Spire Missouri has also been granted mechanisms for addressing pensions, energy efficiency and conservation expenses. We do note that in its most recent rate case completed in March 2018, the MPSC rejected the company's request to establish a revenue stabilization mechanism (RSM) and a tracker for environmental related costs; however, the commission authorized the WNAR which is a more limited form of revenue decoupling.

Exhibit 4

Important tracking mechanisms help to recover operating and capital costs on a more timely basis

Cost Recovery Mechanism	Comments
Weather Normalization Adjustment Rider (WNAR)	Recover fixed costs more evenly throughout the year
Purchased Gas Adjustment (PGA)	Recovery of changes in natural gas commodity costs, carrying costs, hedging gains/losses
Infrastructure System Replacement Surcharge (ISRS)	Mitigates impact of capital investment between rate cases

Source: MPSC, Spire, Inc.

The PGA and WNAR help to address two of the more important LDC operating risks, fuel costs (which have been historically volatile) and demand fluctuations. The PGA is allowed to be adjusted four times per year to more accurately track actual commodity costs and the WNAR allows for two annual adjustments to align rates with actual customer usage. These mechanisms help to stabilize margins and enhance variable and fixed cost recovery.

The ISRS allows Spire Missouri to file two rate increases during a twelve month period to incorporate costs associated with the pipeline replacement and safety program. This allows for the recovery of costs and a return on investment until these capital projects are fully incorporated into rate base as part of the company's next general rate filing. Spire Missouri has about 2,300 miles of pipeline replacement remaining of its total 30,000 pipeline miles within its system.

Collectively, these mechanisms offer good visibility and predictability into cost recovery - an important credit factor since Missouri's cost recovery framework is predominantly based on a general rate case format that uses a historic test year (albeit with true-up periods for the inclusion of known and measurable costs). These proceedings are more open to negotiation and can lead to unpredictable outcomes at times.

Spire Missouri's last general rate case order in March 2019 was evidence of the credit support provided by the MPSC, as it aligned the rate construct between Spire West and East through items such as a 9.8% allowed ROE, 54% equity ratio and customer demand charges, which ensure a certain portion of fixed costs are recovered, regardless of volume consumed (both about \$20 per customer per month). We expect the rate case outcome should help the company to maintain a stable financial profile going forward.

FINANCIAL METRICS EXPECTED TO IMPROVE AND SUPPORT CREDIT QUALITY

Spire Missouri's recent financial metrics are lower than historical levels due to the impact of tax reform as well as from the modest revenue reduction related to the recent ISRS court rulings, such that Spire Missouri's ratio of CFO pre-W/C to debt was 17.6% for the 12-month period ended 31 December 2019. Although the company's ratio of CFO pre-W/C to debt is currently below the financial metric threshold for a possible downgrade of 19%, we expect this to be temporary. Going forward, we expect Spire Missouri's ratio of CFO pre-W/C to debt to improve to the 19-20% range over the next two years and its cash flow interest coverage to remain above 5.5x, which would be supportive of its credit quality as a low-risk US regulated gas utility.

CREDIT CONSTRAINED BY PARENT LEVERAGE AND MINIMAL RING-FENCE TYPE PROVISIONS

Spire Inc.'s growth by acquisition strategy historically has resulted in a substantial, albeit declining, amount of holding company debt (i.e., roughly \$690 million of long-term debt at December 2019), which is serviced by dividend distributions from operating companies. The roughly \$27 million of annual parent level interest expense is essentially a fixed obligation that must be supported by the utilities, since the unregulated net income and distributable cash of Spire Inc.'s other businesses, such as Spire Marketing, can be more volatile, less certain and insufficient to service the debt.

We also consider the corporate dividend to be akin to a fixed obligation, since utility management teams are unlikely to reduce this cash distribution unless under significant financial duress. Through LTM Q1 2020, Spire Inc.'s dividend was about \$125 million. We expect that the majority of parent-level cash requirements are likely to come from Spire Missouri, the largest utility in the Spire Inc. family.

At about 30% of consolidated long-term debt as of December 2019, Spire Inc.'s holding company leverage is substantial and increases the financial risk across the entire family. As such, the holding company debt constrains the credit profiles of both Spire Alabama and Spire Missouri. Besides dividend restrictions at Spire Missouri, there are no significant legal ring-fencing provisions (e.g. independent directors, minimum equity requirements) that provide additional utility credit protection in the unlikely scenario of a Spire Inc.

bankruptcy. However, both Spire Alabama and Spire Missouri are required to get pre-approval from their respective regulators before they issue debt.

We expect that the company will focus on reducing debt at the parent over time, consistent with management's public comments that it intends to do so. Refer to Spire Inc.'s credit opinion for further details.

ESG CONSIDERATIONS

Environmental considerations included in our credit assessment of Spire Missouri are primarily related to its exposure to carbon regulations. Spire Missouri is a pure-play gas distribution company with no fossil fueled generation and so has low carbon transition risk within the regulated utility sector. However, its operations which include natural gas transportation, distribution and storage activities inherently involve a variety of hazards and operations risks, such as leaks.

Longer term, Spire Missouri could possibly be more exposed to a potential decline in demand for fossil fuels as consumer preferences may change or other initiatives take hold to reduce the use of fossil fuels. For now, the utility fuel costs are fully passed through to customers with an effective cost recovery mechanism and some organic growth opportunities are allowing for Spire to give agricultural producers the opportunity to convert to natural gas fuel from higher carbon fuels such as propane and diesel. Moody's framework for assessing carbon transition risk in the utility industry is discussed in "[Prudent regulation key to mitigating risk, capturing opportunities of decarbonization](#)" (2 November 2017).

Social risks are primarily related to demographic trends, safety, customer and regulatory relations. Spire Missouri continues to work towards ensuring customer safety by improving its infrastructure through pipeline replacement investments. Social risks could occur from a rare operating event such as a pipeline explosion which can result in casualties and property damage. Moody's discusses these risks in "[LDC Utilities Exposed to Operational Hazards, But Sector Still Viewed as Low Risk](#)" (12 November 2018).

From a governance perspective, financial and risk management policies including a strong financial profile are important characteristics for managing environmental and social risks. We view management and governance of Spire Missouri as strong based on our assessment criteria. Moody's framework for assessing corporate governance is discussed in "[Utilities and power companies – North America Corporate governance assessments show generally credit-friendly characteristics](#)" (September 19, 2019).

Liquidity analysis

Spire Missouri has an adequate liquidity profile driven by its stable cash flow generation and good access to external liquidity sources. As of 31 December 2019, Spire Missouri had a cash balance of about \$9 million, which is included in Spire's total cash balance of about \$22 million.

Historically, Spire Missouri's cash flow from operations had been able to largely cover its capex and dividends to the parent. Over the last couple of years, Spire Missouri's capital expenditures have increased, primarily due to an acceleration in pipeline infrastructure replacements under the ISRS program. We estimate that over 50% of capex investments are recoverable through the ISRS mechanism, including Spire Missouri West's capital expenditures, which account for about 40% of total Spire Missouri's annual capex.

We expect capital spending levels to remain elevated for the next few years as Spire Missouri continues with substantial infrastructure replacement investments. Spire Missouri's capital expenditures will be between \$350-\$400 million in FY 2020, after investments of approximately \$360 million in FY 2019. Going forward, we anticipate cash flow from operations should cover the majority of Spire Missouri's capex levels. Shortfalls in funding capital expenditures and dividends to its parent will likely be supplemented with short and long-term debt issuances that are funded in a balanced manner that maintains Spire Missouri's targeted capital structure.

The parent, Spire Inc.'s liquidity is supported by a commercial paper program, backstopped by a \$975 million senior unsecured revolving credit facility expiring October 2023. The facility includes sublimits for Spire, Inc. of \$300 million, Spire Missouri of \$475 million and Spire Alabama of \$200 million. At 31 December 2019, Spire Missouri had approximately \$288 million of commercial paper borrowings outstanding, included in the approximately \$519 million outstanding on the total Spire Inc. family's program. The facility has same-day borrowing ability and no material adverse change representation for ongoing borrowings. It also has one financial maintenance covenant which limits consolidated debt to capitalization at 70%. As of 31 December 2019, Spire reported that all of the borrowing entities were in compliance with this covenant with Spire Missouri's ratio at 50%.

Spire Missouri's next significant debt maturity is \$55 million of notes due in March 2023.

Rating methodology and scorecard factors

Exhibit 5

Rating Factors

Spire Missouri Inc.

Regulated Electric and Gas Utilities Industry Scorecard [1][2]	Current LTM 12/31/2019		Moody's 12-18 Month Forward View As of Date Published [3]	
	Measure	Score	Measure	Score
Factor 1 : Regulatory Framework (25%)				
a) Legislative and Judicial Underpinnings of the Regulatory Framework	A	A	A	A
b) Consistency and Predictability of Regulation	A	A	A	A
Factor 2 : Ability to Recover Costs and Earn Returns (25%)				
a) Timeliness of Recovery of Operating and Capital Costs	A	A	A	A
b) Sufficiency of Rates and Returns	A	A	A	A
Factor 3 : Diversification (10%)				
a) Market Position	Baa	Baa	Baa	Baa
b) Generation and Fuel Diversity	N/A	N/A	N/A	N/A
Factor 4 : Financial Strength (40%)				
a) CFO pre-WC + Interest / Interest (3 Year Avg)	6.7x	Aa	5.7x - 6.2x	A
b) CFO pre-WC / Debt (3 Year Avg)	20.2%	A	18% - 20%	A
c) CFO pre-WC – Dividends / Debt (3 Year Avg)	17.7%	A	15% - 18%	A
d) Debt / Capitalization (3 Year Avg)	46.6%	A	45% - 49%	A
Rating:				
Scorecard-Indicated Outcome Before Notching Adjustment		A2		A2
HoldCo Structural Subordination Notching		0		0
a) Scorecard-Indicated Outcome		A2		A2
b) Actual Rating Assigned		A1		A1

[1] All ratios are based on 'Adjusted' financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.

[2] As of 12/31/2019(L)

[3] This represents Moody's forward view; not the view of the issuer; and unless noted in the text, does not incorporate significant acquisitions and divestitures.

Source: Moody's Financial Metrics

Appendix

Exhibit 6

Cash Flow and Credit Metrics [1]

CF Metrics	Sep-16	Sep-17	Sep-18	Sep-19	LTM Dec-19
As Adjusted					
FFO	244	258	203	243	240
+/- Other	(13)	5	82	45	33
CFO Pre-WC	231	263	284	288	273
+/- ΔWC	61	(59)	27	44	52
CFO	292	204	311	332	326
- Div	85	29	36	49	41
- Capex	202	286	299	360	370
FCF	5	(112)	(23)	(77)	(85)
(CFO Pre-W/C) / Debt	18.7%	19.4%	20.8%	19.3%	17.6%
(CFO Pre-W/C - Dividends) / Debt	11.8%	17.3%	18.2%	16.1%	15.0%
FFO / Debt	19.7%	19.0%	14.8%	16.3%	15.5%
RCF / Debt	12.9%	16.9%	12.2%	13.1%	12.8%
Revenue	1,088	1,172	1,286	1,292	1,253
Cost of Good Sold	-	-	-	-	-
Interest Expense	42	45	52	54	55
Net Income	114	118	159	143	139
Total Assets	3,314	3,651	3,716	4,037	4,171
Total Liabilities	2,251	2,486	2,461	2,702	2,800
Total Equity	1,063	1,165	1,254	1,334	1,371

[1] All figures and ratios are calculated using Moody's estimates and standard adjustments. Periods are Financial Year-End unless indicated. LTM = Last Twelve Months
Source: Moody's Financial Metrics

Exhibit 7

Peer Comparison Table [1]

(in US millions)	Spire Missouri Inc.			Washington Gas Light Company			Piedmont Natural Gas Company, Inc.			Public Service Co. of North Carolina, Inc.		
	A1 Stable			A3 Stable			A3 Stable			Baa1 Stable		
	FYE Sep-18	FYE Sep-19	LTM Dec-19	FYE Sep-17	FYE Sep-18	LTM Sept-19	FYE Dec-17	FYE Dec-18	LTM Sept-19	FYE Dec-17	FYE Dec-18	LTM Sept-19
Revenue	1,286	1,292	1,253	1,167	1,248	1,317	1,328	1,375	1,391	470	500	546
CFO Pre-W/C	284	288	273	329	120	232	469	285	389	157	113	113
Total Debt	1,364	1,490	1,553	1,603	1,554	1,765	2,456	2,395	2,689	770	934	868
CFO Pre-W/C / Debt	20.8%	19.3%	17.6%	20.6%	7.7%	13.2%	19.1%	11.9%	14.4%	20.4%	12.1%	13.1%
CFO Pre-W/C - Dividends / Debt	18.2%	16.1%	15.0%	15.2%	2.1%	7.6%	19.1%	11.9%	14.4%	15.7%	7.4%	10.3%
Debt / Capitalization	45.8%	46.7%	47.1%	44.0%	45.8%	47.4%	52.7%	47.8%	47.5%	44.0%	47.2%	42.9%

[1] All figures & ratios calculated using Moody's estimates & standard adjustments. FYE = Financial Year-End. LTM = Last Twelve Months. RUR* = Ratings under Review, where UPG = for upgrade and DNG = for downgrade
Source: Moody's Financial Metrics

Ratings

Exhibit 8

Category	Moody's Rating
SPIRE MISSOURI INC.	
Outlook	Stable
First Mortgage Bonds	A1
PARENT: SPIRE INC.	
Outlook	Stable
Senior Unsecured	Baa2
Pref. Stock	Ba1
Commercial Paper	P-2

Source: Moody's Investors Service

© 2020 Moody's Corporation, Moody's Investors Service, Inc., Moody's Analytics, Inc. and/or their licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. AND/OR ITS CREDIT RATINGS AFFILIATES ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND MATERIALS, PRODUCTS, SERVICES AND INFORMATION PUBLISHED BY MOODY'S (COLLECTIVELY, "PUBLICATIONS") MAY INCLUDE SUCH CURRENT OPINIONS. MOODY'S INVESTORS SERVICE DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT OR IMPAIRMENT. SEE MOODY'S RATING SYMBOLS AND DEFINITIONS PUBLICATION FOR INFORMATION ON THE TYPES OF CONTRACTUAL FINANCIAL OBLIGATIONS ADDRESSED BY MOODY'S INVESTORS SERVICE CREDIT RATINGS. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS, NON-CREDIT ASSESSMENTS ("ASSESSMENTS"), AND OTHER OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. MOODY'S PUBLICATIONS MAY ALSO INCLUDE QUANTITATIVE MODEL-BASED ESTIMATES OF CREDIT RISK AND RELATED OPINIONS OR COMMENTARY PUBLISHED BY MOODY'S ANALYTICS, INC. AND/OR ITS AFFILIATES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS DO NOT COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS, ASSESSMENTS AND OTHER OPINIONS AND PUBLISHES ITS PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL, WITH DUE CARE, MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS, AND PUBLICATIONS ARE NOT INTENDED FOR USE BY RETAIL INVESTORS AND IT WOULD BE RECKLESS AND INAPPROPRIATE FOR RETAIL INVESTORS TO USE MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS OR PUBLICATIONS WHEN MAKING AN INVESTMENT DECISION. IF IN DOUBT YOU SHOULD CONTACT YOUR FINANCIAL OR OTHER PROFESSIONAL ADVISER. ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS ARE NOT INTENDED FOR USE BY ANY PERSON AS A BENCHMARK AS THAT TERM IS DEFINED FOR REGULATORY PURPOSES AND MUST NOT BE USED IN ANY WAY THAT COULD RESULT IN THEM BEING CONSIDERED A BENCHMARK.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process or in preparing its Publications.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability to any person or entity for any indirect, special, consequential, or incidental losses or damages whatsoever arising from or in connection with the information contained herein or the use of or inability to use any such information, even if MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers is advised in advance of the possibility of such losses or damages, including but not limited to: (a) any loss of present or prospective profits or (b) any loss or damage arising where the relevant financial instrument is not the subject of a particular credit rating assigned by MOODY'S.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability for any direct or compensatory losses or damages caused to any person or entity, including but not limited to by any negligence (but excluding fraud, willful misconduct or any other type of liability that, for the avoidance of doubt, by law cannot be excluded) on the part of, or any contingency within or beyond the control of, MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers, arising from or in connection with the information contained herein or the use of or inability to use any such information.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY CREDIT RATING, ASSESSMENT, OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

Moody's Investors Service, Inc., a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by Moody's Investors Service, Inc. have, prior to assignment of any credit rating, agreed to pay to Moody's Investors Service, Inc. for credit ratings opinions and services rendered by it fees ranging from \$1,000 to approximately \$2,700,000. MCO and Moody's investors Service also maintain policies and procedures to address the independence of Moody's Investors Service credit ratings and credit rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold credit ratings from Moody's Investors Service and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moody.com under the heading "Investor Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Additional terms for Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors.

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

MJKK or MSFJ (as applicable) hereby disclose that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MJKK or MSFJ (as applicable) have, prior to assignment of any credit rating, agreed to pay to MJKK or MSFJ (as applicable) for credit ratings opinions and services rendered by it fees ranging from JPY125,000 to approximately JPY250,000,000.

MJKK and MSFJ also maintain policies and procedures to address Japanese regulatory requirements.

REPORT NUMBER 1215434