

CREDIT OPINION

9 April 2020

Update

✓ Rate this Research

RATINGS

Spire Inc.

Domicile	St. Louis, Missouri, United States
Long Term Rating	Baa2
Type	Senior Unsecured - 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.

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

Spire Inc.

Update to credit analysis

Summary

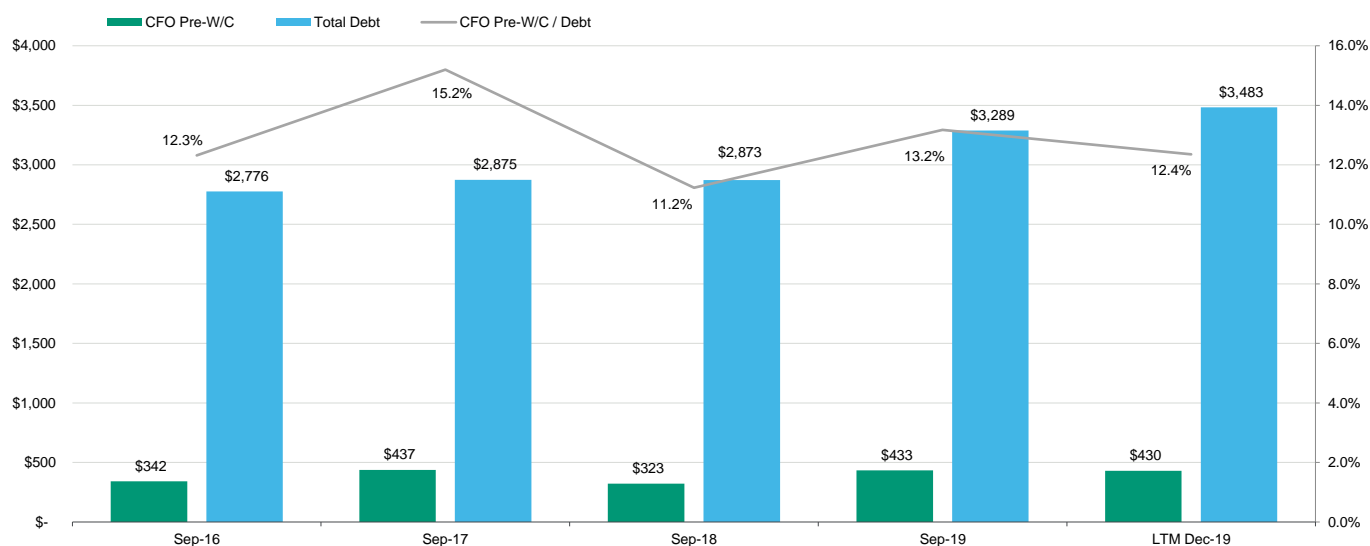
Spire Inc.'s credit profile reflects its portfolio of low-risk natural gas local distribution companies (LDCs), the supportive regulatory environments in which they operate that include several timely cost recovery mechanisms and stable cash flow generation. While Spire's financial performance over the last couple of years was weaker than historical levels primarily due to changes in cash flows from tax reform as well as delays in the STL Pipeline construction, we expect the company's financial metrics to improve. Over the next two years, we expect Spire's ratio of cash flow from operations pre-working capital (CFO pre-W/C) to debt will improve to the mid-teens range from 12.4% for the last 12-months ended 31 December 2019.

Spire's credit is constrained by the approximately \$950 million of parent level debt and preferred stock, which represents about 30% of consolidated debt, and results in a higher degree of structural subordination between Spire's debt and the debt residing at its operating companies. The credit is also constrained by 1) its elevated levels of capital investments that, although lower than recent years, will require additional debt financing and 2) modestly growing unregulated businesses, including natural gas marketing and storage services, that add to its business risk profile.

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 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-risk business profile as a holding company of predominantly regulated natural gas local distribution companies
- » Credit supportive regulatory environments in Missouri and Alabama
- » Steady cash flow generation supported by several timely cost recovery mechanisms

Credit challenges

- » Substantial parent debt leverage expected to gradually decline over time
- » Elevated capital investments, albeit lower than recent years, will require additional debt financing
- » Strategy to grow higher-risk gas marketing and storage businesses increases overall business risk profile

Rating outlook

Spire's stable rating outlook reflects our expectation of continued regulatory support through timely cost recovery and improvement in its financial profile such that its ratio of CFO pre-W/C to debt will increase to the mid-teen's range over the next two years. The stable outlook also incorporates our expectation that management will not raise the financial or business risk of the company through higher holding company debt or significant increases in its unregulated business activities.

Factors that could lead to an upgrade

Spire could be upgraded if holding company debt is reduced to less than 25% of consolidated debt; its financial performance improves such that its ratio of CFO pre-W/C to debt increases to 17% on a sustained basis; the regulatory environments in which its subsidiaries operate remain credit supportive; and Spire's unregulated businesses remain modest.

Factors that could lead to a downgrade

Spire could be downgraded if the degree of regulatory support were to decline materially or if the company's financial profile were to deteriorate such that its ratio of CFO pre-W/C to debt was to remain below 13% on a sustained basis. Spire could also be downgraded

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.

it the company increases its business risk profile through aggressive growth of its unregulated businesses or increases parent level debt through M&A activity or dividend growth outpacing earnings growth.

Key indicators

Exhibit 2

Spire Inc., [1]

	Sep-16	Sep-17	Sep-18	Sep-19	LTM Dec-19
CFO Pre-W/C + Interest / Interest	4.9x	5.3x	4.0x	4.5x	4.4x
CFO Pre-W/C / Debt	12.3%	15.2%	11.2%	13.2%	12.4%
CFO Pre-W/C – Dividends / Debt	9.2%	11.9%	7.4%	9.5%	8.7%
Debt / Capitalization	53.7%	51.7%	51.7%	53.5%	54.4%

[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

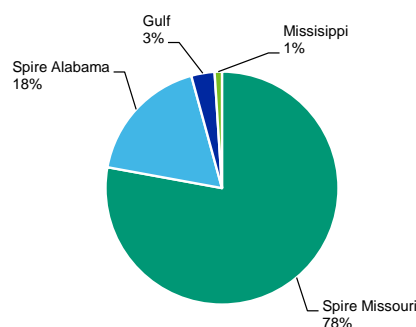
Profile

Spire Inc. is a utility holding company based in St. Louis, Missouri. Spire's principal operating subsidiary is Spire Missouri Inc., a regulated natural gas local distribution company serving over 1.2 million customers, primarily residential, in the eastern and western part of Missouri, including the cities of St. Louis and Kansas City. Spire Missouri represents about 78% of Spire's consolidated rate base. Spire Missouri operates through two divisions, Spire Missouri East (fka Laclede Gas Company, serving around 640,000 customers) and Spire Missouri West (fka Missouri Gas Energy, serving about 525,000 customers), which are regulated by the Missouri Public Service Commission (MPSC).

Spire's second largest operating subsidiary is Spire Alabama Inc. (A2 stable, fka Alabama Gas Corporation), the largest regulated natural gas local distribution company in Alabama serving over 420,600 customers. Spire also owns Spire Gulf (unrated, fka Mobile Gas Service Corp.) and Spire Mississippi (unrated, fka Willmut Gas & Oil Co.), which are small LDCs in Alabama and Mississippi, respectively. The Alabama utilities are regulated by the Alabama Public Service Commission (APSC) and Spire Mississippi by the MPSC.

Exhibit 3

Spire's rate base is concentrated in its largest subsidiary, Spire Missouri



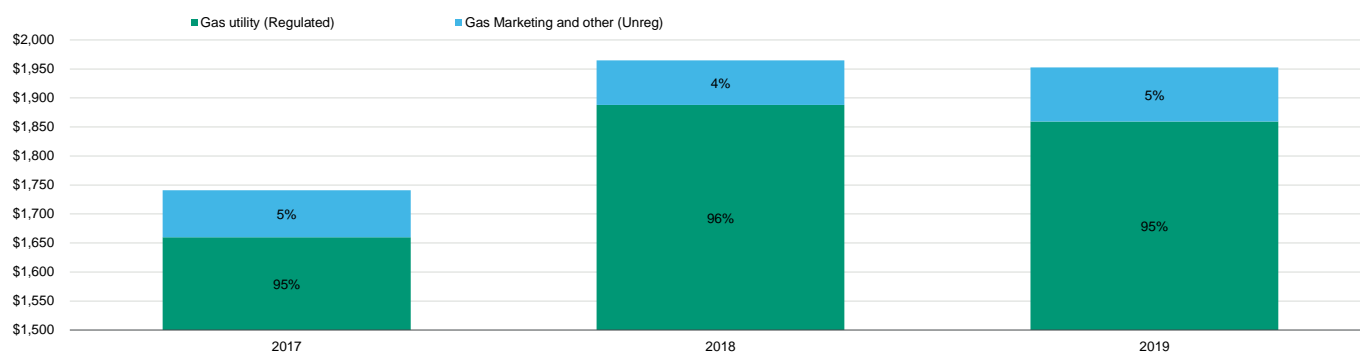
Source: Company presentation, Moody's estimates

In November 2019, Spire placed into service STL Pipeline, a 65-mile natural gas pipeline which delivers natural gas into eastern Missouri. STL primarily serves affiliate Spire Missouri East, and is regulated by the Federal Energy Regulatory Commission (FERC).

Spire's unregulated businesses account for the remainder of Spire's operations, which contribute around 5% of consolidated earnings. The largest unregulated business is a gas marketing segment, Spire Marketing (unrated, fka Laclede Energy Resources), but other smaller businesses include a propane pipeline and natural gas compression.

Exhibit 4

Spire's regulated utilities account for approximately 95% of consolidated operating revenues.



Source: Company's SEC filings

Detailed credit considerations

Low business risk profile with LDCs in supportive regulatory environments

As a holding company of regulated LDCs that contribute about 95% of consolidated cash flow, we view Spire as having a lower business risk profile than many peer regulated utility holding companies. LDCs generally have a more stable residential customer base and lower operating complexities when compared to vertically integrated electric utilities that have more exposure to price sensitive industrial customers and operate various types and vintages of power generation assets.

Moreover, we view the Missouri and Alabama regulatory environments to be very supportive to the credit of LDCs through several timely cost recovery mechanisms afforded by the MPSC and APSC. This is evidenced by higher than average fixed cost recovery and timely incorporation of infrastructure capital investments into rates allowed in Missouri, while Alabama offers a Rate Stabilization and Equalization (RSE) framework that provide formulaic rate recovery. These mechanisms result in a high degree of predictability and stability in Spire's consolidated cash flow generation, which helps mitigate the earnings and cash flow volatility of Spire's unregulated activities. In the exhibit below, we highlight several of the key cost recovery mechanisms including a brief description of its credit support.

Exhibit 5

Several cost recovery mechanisms help provide more stability to Spire's cash flow generation

	Spire Missouri	Spire Alabama	Spire Gulf	Spire Mississippi	Comments
Weather Mitigation Rate Design	X				Recover fixed costs more evenly throughout the year
Temperature Adjustment Rider (TAR)		X	X		Moderates impact of deviations from normal weather patterns
Purchased Gas Adjustment (PGA)	X		X	X	Recovery of changes in natural gas commodity costs, carrying costs, hedging gains/losses
Gas Supply Adjustment (GSA)		X			Recovery of changes in cost of gas supply
Competitive Fuel Clause (CFC)		X			Prevents earnings loss by adjusting prices to compete with alternate fuel/gas supply source
Infrastructure System Replacement Surcharge (ISRS)	X				Mitigates impact of capital investment between rate cases
Rate Stabilization and Equalization (RSE)		X	X		Quicker cost recovery of capital investment between rate cases

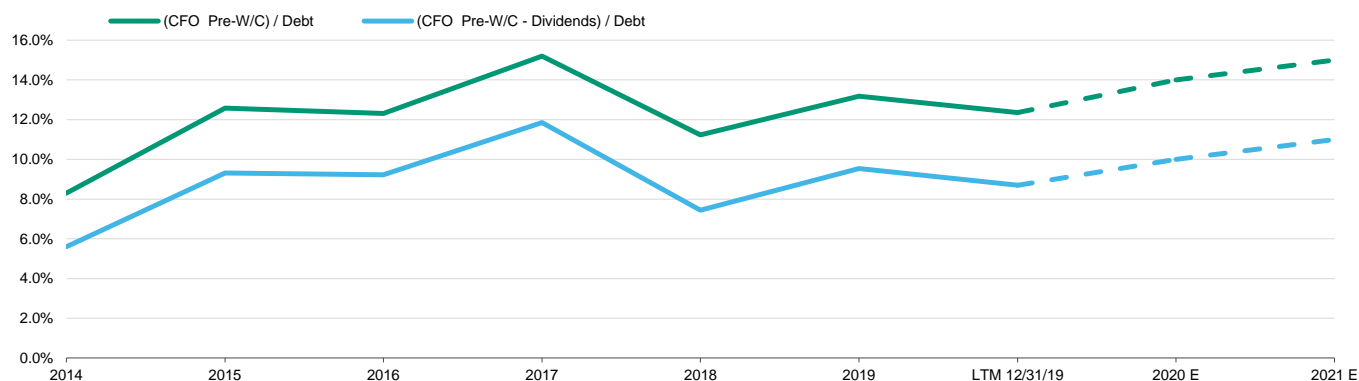
Source: Company, Missouri Public Service Commission, Alabama Public Service Commission

Financial metrics expected to improve with gradual reduction in holding company leverage and cash flow generation from STL pipeline

Spire's recent financial performance was weaker than historical levels. This was mainly attributed to substantial levels of holding company debt and delays in Spire's STL Pipeline, which was completed and went into service in November 2019. For the 12-months ended 31 December 2019, Spire's ratio of CFO pre-W/C to debt was 12.4% and ratio of retained cash flow (RCF) or CFO pre-W/C less dividends to debt was 8.7%. We expect Spire's financial profile will improve over the next two years as the company continues to gradually pay down holding company debt and the now in-service STL Pipeline contributes to cash flow generation, such that the company's ratio of CFO pre-W/C to debt improves to the mid-teens range and ratio of RCF to debt improves to 10-11%.

Exhibit 6

Cash flow ratios expected to improve to the mid-teen's range over the next 12-18 months.



Source: Moody's Investors Service projections

As of 31 December 2019, Spire had parent company long-term debt of \$811 million including \$121 million of preferred debt and \$146 million of commercial paper borrowings (net of about \$373 million loaned to utilities), which accounts for approximately 30% of the \$3.2 billion of consolidated debt. Parent level debt is down from about 37% of consolidated debt in 2018.

Exhibit 7

Spire's parent debt is gradually being reduced but remains substantial

Spire Debt Profile		As of 31 December 2019
Senior Notes		\$690
Preferred Stock*		\$121
Total Parent long-term debt		\$811
Consolidated LTD (Gross)		\$2,651
Parent LTD as % of Consolidated		31%
Parent Commercial Paper Outstanding		\$519
Less: Borrowings Attributed to Utilities		\$373
Parent STD		\$146
Consolidated STD		\$564
Parent LTD + STD		\$957
Total Parent debt as % of Consolidated debt		30%

*Hybrid Basket C debt treatment - 50% equity allocation

Source: Company SEC filings and Moody's Investors Service

Within their respective regulatory frameworks, Spire's utilities produce steady cash flow that allows the companies to generate solid financial metrics, including ratios of CFO pre-W/C to debt in the high teens for Spire Missouri and in the mid-20% range for Spire Alabama. Timely recovery of costs and investment mechanisms support the utilities' financial profiles, as management estimates that roughly 80% of near-term capital spending will be recovered through Spire Missouri's Infrastructure System Replacement Surcharge (ISRS) filings (allowed twice a year) and the RSE framework in Alabama. We also note that Spire's unregulated operations, which are unlevered assets, generate some cash flow, although with more volatility, that can help service the holding company debt.

Non-utility businesses are modestly growing and add more risk to business profile

Spire's non-utility businesses account for about 5% of consolidated earnings. Based on management's growth strategy, these business activities could grow to about 10% of consolidated results, which will add risk to the company's low-risk core regulated LDC business. Spire Marketing is expected to be the fastest growing business of Spire's non-utility activities through its involvement in the marketing of natural gas and gas services to more than 250 retail customers and 120 wholesale customers in the eastern US. We view these operations as having a much higher business risk due to the commodity price exposure and potential liquidity requirements.

To date, Spire Marketing has required a minimal amount of capital; however, Spire typically guarantees performance on a portion of Spire Marketing's gas supply contracts. Although the company's stated focus is on the physical delivery of gas which mitigates some risk, gas marketing margins have decreased over the last few years primarily due to the growing supply of shale gas in the US that is eroding regional price differentials, which is a key component of earnings for Spire Marketing.

STL Pipeline is a 400,000 decatherm per day (Dth/d) natural gas pipeline between Rockies Express Pipeline LLC (Ba1 stable) and the St. Louis metropolitan area. The FERC regulated pipeline is viewed as generally low-risk due to the formulaic nature of its rate structure and contracted revenue stream from a credit worthy counterparty. While the pipe's capacity is not fully subscribed, the anchor shipper, affiliate Spire Missouri East, has a 20 year contract for 350,000 Dth/d (87.5%) of capacity in order to serve its own end-use residential customers.

Spire Storage is small as it consists of around 39 billion cubic feet of natural gas storage capacity in Wyoming. Spire has invested around \$130 million in the facilities in order to increase injection and withdrawal capabilities, expand working gas capacity and improve overall performance. As of 30 September 2019, Spire Marketing had contracted for approximately 20 Bcf of storage and park and loan capacity for the 2019-2020 winter season.

ESG considerations

Spire has low carbon transition risk within the regulated utility sector because it is a holding company of predominantly local gas distribution operations. We view LDC's as having a lower level of carbon transition risk when compared to vertically integrated electric utilities, mainly due to their lack of ownership of generations assets. Longer term, Spire 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, 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).

Spire's other gas services are also relatively low-risk, but contain more direct commercial relationships with exploration and production companies, which are generally ranked as having a higher carbon transition risk. Should these customers encounter credit deterioration or rising business and financial risk due to carbon issues, Spire's marketing business, in particular, could be negatively impacted.

Social risks are primarily related to demographic trends, safety, customer and regulatory relations. Spire 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 pipeline explosions 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 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 has an adequate liquidity profile reflecting upstream dividends from its regulated subsidiaries and adequate access to external liquidity resources. As of 31 December 2019, Spire had a cash balance of \$22 million.

Although capex levels over the next few years will be lower than recent years, we continue to expect Spire's internally generated cash flow will be less than planned capital expenditures and shareholder dividends. As such, we expect Spire will use a balanced mix of debt and equity to supplement its cash flow generation to meet its capital investment requirements. That said, we expect Spire will do so in a manner that maintains its current financial profile.

We estimate that Spire will generate roughly \$300 million of negative free cash flow over the next twelve months, with approximately \$800 million of capital investments and dividend distributions against cash flow from operations of about \$500 million.

Despite its negative free cash flow, Spire's liquidity profile is supported by its access to a \$975 million senior unsecured revolving credit facility, expiring in October 2023, and manageable long-term debt maturities over the next 12 months. In an effort to bolster liquidity during the coronavirus disruption, Spire entered into a \$150 million senior unsecured term loan that matures on 25 March 2021. Spire's nearest long-term debt maturities are \$35 million of parent debt due in September 2021 and \$50 million of senior notes at Spire Alabama due in December 2021.

The revolver includes sublimits for Spire of \$300 million, Spire Missouri of \$475 million and Spire Alabama of \$200 million. At 31 December 2019, Spire, on a consolidated basis, had no borrowings and approximately \$519 million of commercial paper borrowings outstanding. 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 the consolidated company's ratio at 55%.

Structural considerations

Spire's Baa2 senior unsecured rating is four notches lower than Spire Missouri's A1 first mortgage bond rating and three notches lower than Spire Alabama's A2 senior unsecured rating, due to the structural subordination of the parent obligations compared to the debt at its principal operating subsidiaries. Going forward, we expect a gradual reduction of parent level debt in accordance with management's stated goals.

We expect that Spire's holding company interest expense and corporate dividend will continue to be supported by its utility dividends as noted in the exhibit below. Additional structural considerations could result if Spire required a material amount of dividend support from its higher-risk and more volatile unregulated businesses; if utility payout ratios increased to levels that caused regulatory concern or a further deterioration to utility retained cash flow ratios; or if parent interest expense and corporate dividends were consistently funded with external debt.

Exhibit 8

Holdco fixed charges expected to be covered by utility distributions**Spire Holding Company Leverage**

HoldCo Debt	\$690
HoldCo Preferred	\$121
HoldCo W-A Int. Rate	3.88%
HoldCo Interest	\$31
Corporate Dividend	\$122
HoldCo Fixed Charges	\$153

Regulatory Net Income

Spire Missouri Net Income	\$118
Spire Alabama Net Income	\$53
Spire Gulf Net Income	\$9
Spire Mississippi Net Income	\$1
Total Utility Net Income	\$182
50% Utility Payout as % HoldCo Fixed Charges	59%
70% Utility Payout as % of HoldCo Fixed Charges	83%
85% Utility Payout as % of HoldCo Fixed Charges	100%
100% Utility Payout as % of HoldCo Fixed Charges	118%

The regulated utility net income is estimated based on current utility rate base, equity layers and allowed returns.

Source: Moody's Investors Service

Rating methodology and scorecard factors

Exhibit 9

Rating Factors

Spire 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]	
Factor 1 : Regulatory Framework (25%)		Measure	Score	Measure	Score
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		A	A	A	A
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)		4.6x	A	4.3x - 4.7x	A
b) CFO pre-WC / Debt (3 Year Avg)		12.8%	Baa	13% - 17%	Baa
c) CFO pre-WC – Dividends / Debt (3 Year Avg)		9.3%	Baa	9% - 13%	Baa
d) Debt / Capitalization (3 Year Avg)		53.9%	Baa	50% - 55%	Baa
Rating:					
Scorecard Indicated Outcome Before Notching Adjustment			A3		A3
HoldCo Structural Subordination Notching		-2	-2	-2	-2
a) Scorecard-Indicated Outcome			Baa2		Baa2
b) Actual Rating Assigned			Baa2		Baa2

[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 10

Cash Flow and Credit Metrics [1]

CF Metrics	Sep-16	Sep-17	Sep-18	Sep-19	LTM Dec-19
As Adjusted					
FFO	366	404	405	394	393
+/- Other	(24)	33	(83)	40	37
CFO Pre-WC	342	437	323	433	430
+/- ΔWC	8	(121)	180	26	21
CFO	350	316	503	459	451
- Div	86	96	109	120	128
- Capex	303	445	507	826	811
FCF	(39)	(225)	(113)	(486)	(487)
(CFO Pre-W/C) / Debt	12.3%	15.2%	11.2%	13.2%	12.4%
(CFO Pre-W/C - Dividends) / Debt	9.2%	11.9%	7.4%	9.5%	8.7%
FFO / Debt	13.2%	14.1%	14.1%	12.0%	11.3%
RCF / Debt	10.1%	10.7%	10.3%	8.3%	7.6%
Revenue	1,537	1,741	1,965	1,952	1,917
Cost of Good Sold	-	-	-	-	-
Interest Expense	87	101	109	122	125
Net Income	156	168	245	204	201
Total Assets	6,138	6,615	6,905	7,670	7,954
Total Liabilities	4,349	4,641	4,666	5,265	5,505
Total Equity	1,789	1,974	2,239	2,405	2,449

[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 11

Peer Comparison Table [1]

(in US millions)	Spire Inc. Baa2 Stable			Eversource Energy Baa1 Stable			Southern Company Gas Baa1 Stable			NISource Inc. Baa2 Stable		
	FYE	FYE	LTM	FYE	FYE	LTM	FYE	FYE	LTM	FYE	FYE	LTM
	Sep-18	Sep-19	Dec-19	Dec-17	Dec-18	Sept-19	Dec-17	Dec-18	Sept-19	Dec-17	Dec-18	Sept-19
Revenue	1,965	1,952	1,917	7,752	8,448	8,511	3,920	3,909	3,709	4,875	5,115	5,273
CFO Pre-W/C	323	433	430	2,091	2,043	2,127	917	1,089	1,680	1,088	469	1,033
Total Debt	2,873	3,289	3,483	14,803	15,787	16,737	7,350	6,334	5,767	9,314	9,951	10,163
CFO Pre-W/C / Debt	11.2%	13.2%	12.4%	14.1%	12.9%	12.7%	12.5%	17.2%	29.1%	11.7%	4.7%	10.2%
CFO Pre-W/C – Dividends / Debt	7.4%	9.5%	8.7%	10.0%	8.9%	8.8%	6.4%	9.8%	21.0%	9.2%	1.9%	7.0%
Debt / Capitalization	51.7%	53.5%	54.4%	50.7%	51.3%	51.5%	38.6%	36.6%	32.7%	62.7%	60.2%	59.9%

[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 12

Category	Moody's Rating
SPIRE INC.	
Outlook	Stable
Senior Unsecured	Baa2
Pref. Stock	Ba1
Commercial Paper	P-2
SPIRE MISSOURI INC.	
Outlook	Stable
First Mortgage Bonds	A1
SPIRE ALABAMA INC.	
Outlook	Stable
Senior Unsecured	A2

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

1215416