

State of Florida



Public Service Commission

CAPITAL CIRCLE OFFICE CENTER • 2540 SHUMARD OAK BOULEVARD
TALLAHASSEE, FLORIDA 32399-0850

-M-E-M-O-R-A-N-D-U-M-

DATE: May 24, 2017

TO: Office of Commission Clerk (Stauffer)

FROM: Division of Accounting and Finance (Archer, Buys, Cicchetti) *WA DB MC CRISA ALM*
Office of the General Counsel (DuVal) *ma ma*

RE: Docket No. 170006-WS – Water and wastewater industry annual reestablishment of authorized range of return on common equity for water and wastewater utilities pursuant to Section 367.081(4)(f), F.S.

AGENDA: 06/05/17 – Regular Agenda – Proposed Agency Action – Interested Persons May Participate

COMMISSIONERS ASSIGNED: All Commissioners

PREHEARING OFFICER: Brown

CRITICAL DATES: None

SPECIAL INSTRUCTIONS: None

Case Background

Section 367.081(4)(f), Florida Statutes (F.S.), authorizes the Commission to establish, not less than once each year, a leverage formula to calculate a reasonable range of returns on equity (ROE) for water and wastewater (WAW) utilities. The leverage formula methodology currently in use was established in Order No. PSC-01-2514-FOF-WS.¹ On October 23, 2008, the Commission held a formal hearing in Docket No. 080006-WS to allow interested parties to provide testimony regarding the validity of the leverage formula.² Based on the record in that

¹Order No. PSC-01-2514-FOF-WS, issued December 24, 2001, in Docket No. 010006-WS, *In re: Water and wastewater industry annual reestablishment of authorized range of return on common equity of water and wastewater utilities pursuant to Section 367.081(4)(f), F.S.*

²At the May 20, 2008, Commission Conference, upon request of the Office of Public Counsel, the Commission voted to set the establishment of the appropriate leverage formula directly for hearing.

proceeding, the Commission approved the 2008 leverage formula in Order No. PSC-08-0846-FOF-WS.³ In that order, the Commission reaffirmed the methodology that was previously approved in Order No. PSC-01-2514-FOF-WS.

Staff continues to use the leverage formula methodology established in Order No. PSC-01-2514-FOF-WS and reaffirmed in Order No. PSC-08-0846-FOF-WS. This methodology uses ROEs derived from financial models applied to an index of natural gas utilities, as staff determined that there were an insufficient number of utilities that meet the requisite criteria to assemble an appropriate proxy group using only WAW utilities. Therefore, since 2001, the Commission has used natural gas utilities as the proxy companies for the leverage formula. There are approximately 13 natural gas utilities that have actively traded stocks and forecasted financial data. Staff uses natural gas utilities that derive at least 50 percent of their revenue from regulated rates. These utilities have market power and are influenced significantly by economic regulation. As explained in Issue 1, the model results based on natural gas utilities are adjusted to reflect the risks faced by Florida WAW utilities.

The Commission approved the current leverage formula in 2011 by Order No. PSC-11-0287-PAA-WS.⁴ In 2012 through 2016 the Commission approved staff's recommendations to continue to use the 2011 leverage formula for establishing the authorized ROE for WAW utilities.^[5,6,7,8,9] In 2012 through 2016, the Commission found that the range of returns on equity derived from the annual leverage formulas were not optimal for determining the appropriate authorized ROE for WAW utilities due to Federal Reserve monetary policies that resulted in historically low interest rates. Consequently, the Commission decided it was reasonable to continue using the range of returns on equity of 8.74 percent to 11.16 percent from the 2011 leverage formula docket.

³Order No. PSC-08-0846-FOF-WS, issued December 31, 2008, in Docket No. 080006-WS, *In re: Water and wastewater industry annual reestablishment of authorized range of return on common equity for water and wastewater utilities pursuant to Section 367.081(4)(f), F.S.*

⁴Order No. PSC-11-0287-PAA-WS, issued July 5, 2011, in Docket No. 110006-WS, *In re: Water and wastewater industry annual reestablishment of authorized range of return on common equity for water and wastewater utilities pursuant to Section 367.081(4)(f), F.S.*

⁵Order No. PSC-12-0339-PAA-WS, issued June 28, 2012, in Docket No. 120006-WS, *In re: Water and wastewater industry annual reestablishment of authorized range of return on common equity for water and wastewater utilities pursuant to Section 367.081(4)(f), F.S.*

⁶Order No. PSC-13-0241-PAA-WS, issued June 3, 2013, in Docket No. 130006-WS, *In re: Water and wastewater industry annual reestablishment of authorized range of return on common equity for water and wastewater utilities pursuant to Section 367.081(4)(f), F.S.*

⁷Order No. PSC-14-0272-PAA-WS, issued May 29, 2014, in Docket No. 140006-WS, *In re: Water and wastewater industry annual reestablishment of authorized range of return on common equity for water and wastewater utilities pursuant to Section 367.081(4)(f), F.S.*

⁸Order No. PSC-15-0259-PAA-WS, issued July 2, 2015, in Docket No. 150006-WS, *In re: Water and wastewater industry annual reestablishment of authorized range of return on common equity for water and wastewater utilities pursuant to Section 367.081(4)(f), F.S.*

⁹Order No. PSC-16-0254-PAA-WS, issued June 29, 2016, in Docket No. 160006-WS, *In re: Water and wastewater industry annual reestablishment of authorized range of return on common equity for water and wastewater utilities pursuant to Section 367.081(4)(f), F.S.*

Docket No. 170006-WS

Date: May 24, 2017

Section 367.081(4)(f), F.S., authorizes the Commission to establish a range of returns for setting the authorized ROE for WAW utilities. However, use of the leverage formula by the utilities is discretionary and a utility can file cost of equity testimony in lieu of using the leverage formula. The Commission may set an ROE for WAW utilities based on record evidence in any proceeding. If a utility files cost of equity testimony, the Commission will determine the appropriate ROE based on the evidentiary record in that proceeding.

The Commission has jurisdiction pursuant to Section 367.081, F.S.

Discussion of Issues

Issue 1: What is the appropriate range of returns on common equity for water and wastewater utilities pursuant to Section 367.081(4)(f), Florida Statutes?

Recommendation: Staff recommends that the current leverage formula approved by the Commission in Order No. PSC-16-0254-PAA-WS continue to be used until the leverage formula is readdressed in 2018 and a workshop be scheduled for the fall of 2017 to review and update, if necessary, the methodology used to determine the leverage formula. Accordingly, staff recommends the following leverage formula:

$$\text{Return on Common Equity} = 7.13\% + (1.610 \div \text{Equity Ratio})$$

Where the Equity Ratio = Common Equity \div (Common Equity + Preferred Equity + Long-Term and Short-Term Debt)

$$\text{Range: } 8.74\% \text{ @ } 100\% \text{ equity to } 11.16\% \text{ @ } 40\% \text{ equity}$$

Additionally, staff recommends that the Commission cap returns on common equity at 11.16 percent for all WAW utilities with equity ratios less than 40 percent. Staff believes this will discourage imprudent financial risk. This cap is consistent with the methodology in Order No. PSC-08-0846-FOF-WS. (Archer, Buys)

Staff Analysis: Section 367.081(4)(f), F.S., authorizes the Commission to establish a leverage formula to calculate a reasonable range of returns on common equity for WAW utilities. The Commission must establish this leverage formula not less than once a year. For administrative efficiency, the leverage formula is used to determine the appropriate return for an average Florida WAW utility. Traditionally, the Commission has applied the same leverage formula to all WAW utilities. As is the case with other regulated companies under the Commission's jurisdiction, the Commission has discretion in the determination of the appropriate ROE based on the evidentiary record in any proceeding. If one or more parties file testimony in opposition to the use of the leverage formula, the Commission will determine the appropriate ROE based on the evidentiary record in that proceeding.

Methodology

The leverage formula relies on two ROE models. Staff adjusted the results of these models to reflect differences in risk and debt cost between the index of companies used in the models and the average Florida WAW utility. Both models include a four percent adjustment for flotation costs. The models are as follows:

- A Discounted Cash Flow (DCF) model applied to an index of natural gas utilities that have publicly traded stock and are followed by the Value Line Investment Survey (Value Line). This DCF model is an annual model and uses prospective growth rates.

- The updated index consists of five natural gas companies that derive at least 50 percent of their total revenue from gas distribution service. These companies have a median Standard and Poor's bond rating of A.
- A Capital Asset Pricing Model (CAPM) using a market return for companies followed by Value Line, the average yield on the Treasury's long-term bonds projected by the Blue Chip Financial Forecasts, and the average beta for the index of natural gas utilities. The market return for the 2017 leverage formula was calculated using a quarterly DCF model with stock prices as of April 14, 2017.

Consistent with Order No. PSC-01-2514-FOF-WS,¹⁰ staff averaged the indicated returns of the above models and adjusted the result as follows:

- A bond yield differential of 62 basis points is added to reflect the difference in yields between an A/A2 rated bond, which is the median bond rating for the natural gas utility index, and a BBB-/Baa3 rated bond. Florida WAW utilities are assumed to be comparable to companies with the lowest investment grade bond rating, which is Baa3. This adjustment compensates for the difference between the credit quality of "A" rated debt and the credit quality of the minimum investment grade rating.
- A private placement premium of 50 basis points is added to reflect the difference in yields on publicly traded debt and privately placed debt, which is illiquid. Investors require a premium for the lack of liquidity of privately placed debt.
- A small utility risk premium of 50 basis points is added because the average Florida WAW utility is too small to qualify for privately placed debt.

After the above adjustments, the resulting cost of equity estimate is included in the average capital structure for the natural gas utilities.

Updated Leverage Formula

In the instant docket, staff updated the leverage formula using the most recent 2017 financial data and the Commission-approved methodology. The derivation of the leverage formula using the current methodology with updated financial information is presented in Attachment 1 of this recommendation.

Using the updated financial data in the leverage formula decreases the lower end of the current allowed ROE range by 104 basis points and decreases the upper end of the range by 40 basis points. Overall, the spread between the range of returns on equity based on the updated leverage formula is 306 basis points (7.70 percent to 10.76 percent). In comparison, the spread in the range of returns on equity for the existing leverage formula is 242 basis points (8.74 percent to 11.16 percent). The 306 basis point spread reflected in the updated leverage formula is significantly greater than the 20-year average spread of 206 basis points.

¹⁰Order No. PSC-01-2514-FOF-WS, issued December 24, 2001, in Docket No. 010006-WS, *In re: Water and wastewater industry annual reestablishment of authorized range of return on common equity of water and wastewater utilities pursuant to Section 367.081(4)(f), F.S.*

The inflated ROE spread relative to the 2011 leverage formula is caused by the low bond rates resulting from the Federal Reserve's various monetary policies and quantitative easing programs. In its press release dated May 3, 2017, the Federal Reserve stated:¹¹

Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The Committee views the slowing in growth during the first quarter as likely to be transitory and continues to expect that, with gradual adjustments in the stance of monetary policy, economic activity will expand at a moderate pace, labor market conditions will strengthen somewhat further, and inflation will stabilize around 2 percent over the medium term. Near-term risks to the economic outlook appear roughly balanced. The Committee continues to closely monitor inflation indicators and global economic and financial developments.

In view of realized and expected labor market conditions and inflation, the Committee decided to maintain the target range for the federal funds rate at 3/4 to 1 percent. The stance of monetary policy remains accommodative, thereby supporting some further strengthening in labor market conditions and a sustained return to 2 percent inflation.

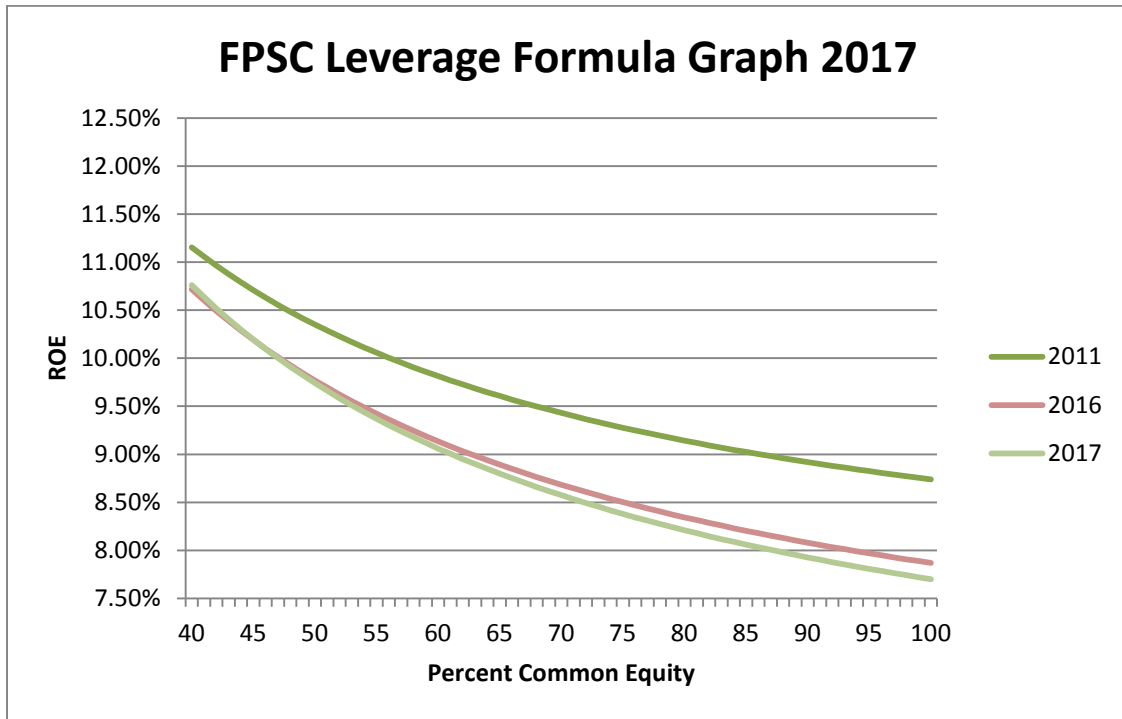
[...In light of the current shortfall of inflation from 2 percent,] the Committee will carefully monitor actual and [expected progress toward its inflation goal.] The Committee expects that economic conditions will evolve in a manner that will warrant only gradual increases in the federal funds rate; the federal funds rate is likely to remain, for some time, below levels that are expected to prevail in the longer run. However, the actual path of the federal funds rate will depend on the economic outlook as informed by incoming data.

The most recent assumed Baa3 bond rate of 5.66 percent used in the updated leverage formula calculation, which includes a 50 basis point adjustment for small company risk and a 50 basis point adjustment for a private placement premium, remains low relative to historic levels. In comparison, the assumed Baa3 bond rate used in the existing leverage formula is 7.13 percent.

Because interest rates are at historically low levels, thereby increasing the slope of the leverage formula relative to prior years, staff believes the range of returns on equity produced from the updated leverage formula is not optimal for determining the appropriate authorized ROE for Florida WAW utilities at this time. An increase in the slope of the leverage formula means a given change in the equity ratio will result in a greater change to the cost of equity. The results of this year's leverage formula produced a slope consistent with the slopes produced by financial data for 2012 through 2016. As shown on the following page, Chart 1-1 illustrates the change in the slope of the 2017 leverage formula compared to the current leverage formula.

¹¹ See Federal Reserve System, statement of the Federal Open Market Committee on May 3, 2017, available at <https://www.federalreserve.gov/newsevents/pressreleases/monetary20170503a.htm>

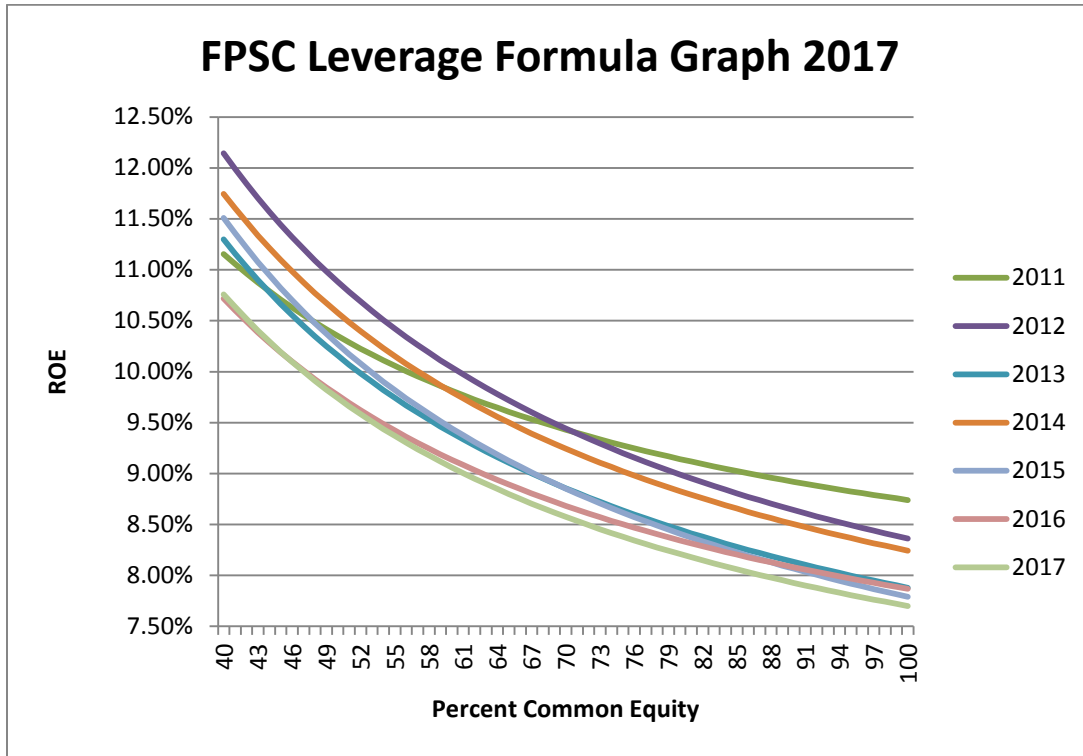
**Chart 1-1
Comparison of Annual Leverage Formulas**



Source: FPSC Staff Analysis

Chart 1-2 illustrates the change in the slope of the leverage formula for the seven years 2011 through 2017.

**Chart 1-2
Comparison of Annual Leverage Formulas since 2011**



Source: FPSC Staff Analysis

In 2016, by Order No. PSC-16-0254-PAA-WS, issued June 29, 2016, the Commission approved staff's recommendation to continue to use the leverage formula initially approved in 2011. The Commission kept the 2011 leverage formula in place because Federal Reserve monetary policies lowered interest rates to historically low levels, thereby increasing the slope of the leverage formula graph relative to previous years. The Federal Reserve's monetary policies and resulting capital market conditions that existed in 2012 through 2017 are expected to continue in 2018.¹²

Although staff recommends the current 2011 leverage formula remain in place, staff has provided the updated leverage formula using the most recent financial information should the Commission decide to not continue to use the 2011 leverage formula and approve the updated leverage formula. The updated model produced the following leverage formula:

$$\text{Return on Common Equity} = 5.66\% + (2.040 \div \text{Equity Ratio})$$

Where the Equity Ratio = Common Equity \div (Common Equity + Preferred Equity + Long-Term and Short-Term Debt)

$$\text{Range: } 7.70\% \text{ @ } 100\% \text{ equity to } 10.76\% \text{ @ } 40\% \text{ equity}$$

In conjunction with the updated leverage formula, the returns on common equity should be capped at 10.76 percent for all WAW utilities with equity ratios less than 40 percent to discourage imprudent financial risk. This cap is consistent with the methodology in Order No. PSC-08-0846-FOF-WS.

In developing the updated leverage formula, staff used the same methodologies used in the 2011 docket. Staff notes that the leverage formula depends on four basic assumptions:

- 1) Business risk is similar for all WAW utilities;
- 2) The cost of equity is an exponential function of the equity ratio but a linear function of the debt to equity ratio over the relevant range;
- 3) The marginal weighted average cost of investor capital is constant over the equity ratio range of 40 percent to 100 percent; and
- 4) The debt cost rate at an assumed Moody's Baa3 bond rating, plus a 50 basis point private placement premium and a 50 basis point small utility risk premium, represents the average marginal cost of debt to a Florida WAW utility over an equity ratio range of 40 percent to 100 percent.

For these reasons, the leverage formula is assumed to be appropriate for the average Florida WAW utility.

¹²See Federal Reserve System, statement of the Federal Open Market Committee on May 3, 2017, available at <https://www.federalreserve.gov/newsevents/pressreleases/monetary20170503a.htm>

Conclusion

In staff's opinion, the existing leverage formula range of 8.74 percent to 11.16 percent initially approved in 2011 is still reasonable for WAW utilities. Staff believes retaining the use of the current in-place leverage formula until the leverage formula is addressed again in 2018 is a reasonable alternative to updating the formula using current 2017 financial information.

Staff continues to believe the leverage formula is a sound, workable methodology that reduces the costs and administrative burdens in WAW rate cases by eliminating the need for cost of equity testimony. However, along with changes in market conditions, mergers and acquisitions have affected the number of natural gas companies included in the proxy group. In 2008, the leverage formula consisted of 10 natural gas companies, in comparison, only five companies currently meet the established criteria to be included in the proxy group. Staff recommends a workshop be scheduled for the fall of 2017 to evaluate and update the companies comprising the comparable group and to investigate whether or not to revise the current leverage formula.

Based on the aforementioned, staff recommends that the current leverage formula approved by the Commission in Order No. PSC-16-0254-PAA-WS continue to be used until the leverage formula is readdressed in 2018 and that a workshop be scheduled for the fall of 2017 to review and update, if necessary, the methodology used to determine the leverage formula.

Issue 2: Should this docket be closed?

Recommendation: No. Upon expiration of the protest period, if a timely protest is not received from a substantially affected person, the decision should become final and effective upon the issuance of a Consummating Order. However, this docket should remain open to allow staff to monitor changes in capital market conditions and to readdress the reasonableness of the leverage formula as conditions warrant. This docket should be closed upon issuance of an order establishing a new docket number in 2018. (DuVal)

Staff Analysis: Upon expiration of the protest period, if a timely protest is not received from a substantially affected person, the decision should become final and effective upon the issuance of a Consummating Order. However, this docket should remain open to allow staff to monitor changes in capital market conditions and to readdress the reasonableness of the leverage formula as conditions warrant. This docket should be closed upon issuance of an order establishing a new docket number in 2018.

SUMMARY OF RESULTS
2017 Water & Wastewater Leverage Formula

	<u>Updated</u> <u>Results</u>	<u>Currently in</u> <u>Effect</u>
(A) DCF ROE for Natural Gas Index	7.48%	8.25%
(B) CAPM ROE for Natural Gas Index	9.08%	9.40%
AVERAGE	8.28%	8.83%
Bond Yield Differential	0.62%	0.57%
Private Placement Premium	0.50%	0.50%
Small-Utility Risk Premium	0.50%	0.50%
Adjustment to Reflect Required Equity		
Return at a 40% Equity Ratio	<u>0.86%</u>	<u>0.76%</u>
Cost of Equity for Average Florida WAW		
Utility at a 40% Equity Ratio	<u>10.76%</u>	<u>11.16%</u>

2016 Leverage Formula (Currently in Effect)

Return on Common Equity	=	7.13%	+	(1.610	÷	Equity Ratio)
Range of Returns on Equity	=	8.74%	to	11.16%		

2017 Leverage Formula

Return on Common Equity	=	5.66%	+	(2.040	÷	Equity Ratio)
Range of Returns on Equity	=	7.70%	to	10.76%		

**MARGINAL COST OF INVESTOR CAPITAL
 Average Water and Wastewater Utility**

<u>Capital Component</u>	<u>Ratio</u>	<u>Marginal Cost Rate</u>		<u>Weighted Marginal Cost Rate</u>
Common Equity	48.11%	9.90%		4.76%
Total Debt	<u>51.89%</u>	5.66%	*	<u>2.94%</u>
	100.00%			7.70%

A 40% equity ratio is the floor for calculating the required return on common equity. The return on equity at a 40% equity ratio is $5.66\% + 2.040 \div 0.40 = 10.76\%$

**Marginal Cost of Investor Capital
Average Water & Wastewater Utility at 40% Equity Ratio**

<u>Capital Component</u>	<u>Ratio</u>	<u>Marginal Cost Rate</u>		<u>Weighted Marginal Cost Rate</u>
Common Equity	40.00%	10.76%		4.30%
Total Debt	<u>60.00%</u>	5.66%	*	3.39%
	100.00%			7.70%

Where: ER = Equity Ratio = Common Equity/(Common Equity + Preferred Equity + Long-Term Debt + Short-Term Debt)

*Assumed Baa3 rate for April 2017 plus a 50 basis point private placement premium and a 50 basis point small utility risk premium.

Sources:
 SNL Corporate Profiles and Value Line Selection and Opinion

ANNUAL DISCOUNTED CASH FLOW MODEL

NATURAL GAS UTILITY INDEX

COMPANY	Div ₀	Div ₁	Div ₂	Div ₃	Div ₄	EPS ₄	ROE ₄	GR ₁₋₄	GR ₄₊	STOCK PRICE APRIL 1, 2017 - APRIL 31, 2017		
										HI	LOW	AVG
Atmos Energy Corporation	1.80	1.92	2.04	2.17	2.30	4.50	0.12	1.06	1.06	80.56	76.09	78.32
Northwest Natural Gas Company	1.88	1.92	1.96	2.01	2.05	3.15	0.10	1.02	1.03	61.50	56.53	59.01
WGL Holdings	2.02	2.08	2.12	2.16	2.20	3.75	0.10	1.02	1.04	84.08	81.89	82.99
Southwest Gas Holdings	1.90	2.05	2.19	2.34	2.50	4.75	0.12	1.07	1.06	86.59	80.11	83.35
Spire Inc.	2.10	2.20	2.30	2.40	2.50	4.65	0.10	1.04	1.04	68.30	63.85	66.08
AVERAGE	1.94	2.03	2.12	2.21	2.31	4.16	0.11	1.04	1.05	73.95		

Stock price including a four percent flotation cost: 70.99

Annual DCF Result: 7.48%

Cash Flows 1.83 1.91 2.00 2.08 2.58 60.60
Present Value of Cash Flows 70.99

Stock Prices obtained from Yahoo Finance for the 30-day period April 1, 2017 through April 31, 2017.

Company dividends, earnings, and ROE obtained from Value Line Ratings & Reports issued March 3, 2017.

CAPTIAL ASSET PRICING MODEL

CAPM Analysis Formula

$K = RF + \text{Beta} (MR - RF) + \text{Flotation Cost Adjustment}$

K = Investor's required rate of return

RF = Risk-free rate (Blue Chip forecast for 30-Year Treasury Bond, May 1, 2017)

Beta = Measure of industry-specific risk (Average for proxy group of natural gas utilities)

MR = Market return (Value Line Investment Analyzer Web Browser as of April 17, 2017)

$$9.08\% = 3.50\% + 0.720 (10.97\% - 3.50\%) + 0.20\%$$

Note: Staff calculated the market return using a quarterly DCF model for a large number of dividend paying stocks followed by Value Line.

As of April 17, 2017, the result was 10.97%.

Staff added 20 basis points to the CAPM result to account for a flotation cost of four percent.

BOND YIELD DIFFERENTIALS

Public Utility Long Term Bond Yield Averages										
MONTH, YEAR	A2	Spread	A3	Spread	Baa1	Spread	Baa2	Spread	Baa3	
April 2017	4.125	0.126	4.251	0.126	4.377	0.126	4.503	0.126	4.629	
120-Month Average Spread							4.503	0.1548	4.66%	
Sources: Moody's Credit Perspectives and Value Line Selection & Opinion										

NATURAL GAS UTILITY PROXY COMPANIES

Company Name	S & P Bond Rating	% of Gas Revenue	V/L Market Capital (millions)	Equity Ratio	Value Line Beta
Atmos Energy Corporation	A	95.97%	\$ 8,374.60	51.44%	0.70
Northwest Natural Gas Company	A+	99.97%	\$ 1,704.30	52.40%	0.65
WGL Holdings	A	53.66%	\$ 4,217.20	44.16%	0.80
Southwest Gas Holdings	BBB+	53.71%	\$ 1,523.29	50.94%	0.75
Spire Inc.	A-	95.39%	\$ 3,352.90	41.59%	0.70
Median:	A	79.74%	3,834.458	48.11%	0.72

Sources:

Value Line Investment Analyzer Web Browser, March 2017
S.E.C. Forms 10Q and 10K for Companies
Standard & Poor's Ratings Direct