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February 16, 2018

**BY E-PORTAL**

Ms. Carlotta Stauffer  
Commission Clerk  
Florida Public Service Commission  
2540 Shumard Oak Boulevard  
Tallahassee, FL 32399-0850

**Re: DOCKET NO. 20170179-GU - Petition for rate increase and approval of depreciation study by Florida City Gas.**

Dear Ms. Stauffer:

Attached, for electronic filing, please find the testimony and exhibits of Florida City Gas' rebuttal witness James Vander Weide. (Document 5 of 10)

Sincerely,

A handwritten signature in cursive script, appearing to read 'Beth Keating', written over a horizontal line.

Beth Keating  
Gunster, Yoakley & Stewart, P.A.  
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**ATTACHMENTS**

cc:// Office of Public Counsel  
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Before the Florida Public Service Commission

Prepared Rebuttal Testimony of  
James H. Vander Weide, Ph.D.

Docket No. 20170179-GU: Petition for rate increase by Florida City Gas

Date of Filing: February 16, 2018

**I. INTRODUCTION AND PURPOSE**

- Q. Please state your name, title, and business address.
- A. My name is James H. Vander Weide. I am President of Financial Strategy Associates, a firm that provides strategic and financial consulting services to business clients. My business address is 3606 Stoneybrook Drive, Durham, North Carolina 27705.
- Q. Are you the same James H. Vander Weide who provided direct testimony in this proceeding?
- A. Yes, I am.
- Q. What is the purpose of your rebuttal testimony?
- A. I have been asked by Florida City Gas (“FCG”) to review the direct testimonies and cost of equity recommendations of Mr. David J. Garrett and Mr. Christopher C. Walters. Mr. Garrett’s testimony is presented on behalf of the Florida Office of Public Counsel (“OPC”), and Mr. Walters is appearing on behalf of the Federal Executive Agencies (“FEA”).

1 Q. What is Mr. Garrett's conclusion regarding FCG's cost of equity?<sup>1</sup>

2 A. Mr. Garrett concludes that FCG's cost of equity is 7.0 percent.

3

4 Q. What is Mr. Garrett's recommended allowed rate of return on equity for  
5 FCG?

6 A. Mr. Garrett recommends that FCG be allowed an opportunity to earn a  
7 rate of return on equity equal to 9.25 percent.<sup>2</sup>

8

9 Q. What is Mr. Walters' recommended cost of equity and allowed rate of  
10 return on equity for FCG?

11 A. Mr. Walters recommends a cost of equity and an allowed return on equity  
12 equal to 9.3 percent.<sup>3</sup>

13

14 Q. Is there anything in the testimonies of Mr. Garrett and Mr. Walters that  
15 causes you to change your recommended cost of equity for FCG?

16 A. No, there is not. I continue to recommend that FCG be allowed to earn an  
17 11.25 percent rate of return on equity.

18

19 Q. Are you sponsoring any rebuttal exhibits?

20 A. Yes, I am sponsoring Exhibit JVW- 3, Rebuttal Schedule 1. This exhibit  
21 was prepared under my direction and control, and the information  
22 contained therein is true and correct to the best of my knowledge and

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<sup>1</sup> Direct Testimony of David J. Garrett, 9:1-9.

<sup>2</sup> Direct Testimony of David J. Garrett, 9:10-10:12.

<sup>3</sup> Direct Testimony of Christopher C. Walters, 65:1 – 9.

1 belief.

2

3 **II. REBUTTAL OF MR. GARRETT'S 7.0 PERCENT COST OF EQUITY**

4 Q. How does Mr. Garrett estimate FCG'S cost of equity?

5 A. Mr. Garrett applies the discounted cash flow ("DCF") model and the  
6 Capital Asset Pricing Model ("CAPM") to the same proxy group of Value  
7 Line natural gas utilities I use to estimate FCG's cost of equity.<sup>4</sup>

8

9 **A. MR. GARRETT'S DISCOUNTED CASH FLOW ANALYSIS**

10 Q. What is the DCF model?

11 A. The DCF model is a model of stock valuation that assumes that a  
12 company's stock price is equal to the present discounted value of all future  
13 dividends investors expect to receive from owning the stock. Assuming  
14 that dividends grow at a constant annual rate,  $g$ , the resulting cost of  
15 equity equation is  $k = D_1/P_s + g$ , where  $k$  is the cost of equity,  $D_1$  is the  
16 expected next period annual dividend,  $P_s$  is the current price of the stock,  
17 and  $g$  is the constant annual growth rate in earnings, dividends, and book  
18 value per share. The term  $D_1/P_s$  is called the expected dividend yield  
19 component of the annual DCF model, and the term  $g$  is called the  
20 expected growth component of the annual DCF model.

21

22 Q. Does Mr. Garrett use an annual DCF model to estimate FCG's cost of  
23 equity?

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<sup>4</sup> Direct Testimony of David J. Garrett, 25:1-19.

1 A. No. Mr. Garrett uses the quarterly DCF model shown in his testimony on  
2 page 37.

3

4 Q. What cost of equity does Mr. Garrett obtain from his application of the  
5 quarterly DCF model?

6 A. From his application of his quarterly DCF model, Mr. Garrett obtains a  
7 result of 6.6 percent.<sup>5</sup>

8

9 Q. Do you also use a quarterly DCF model to estimate FCG's cost of equity?

10 A. Yes.

11

12 Q. Do you agree with Mr. Garrett's estimate of FCG's cost of equity based on  
13 his application of a quarterly DCF model?

14 A. No. My application of the quarterly DCF model to Mr. Garrett's proxy  
15 companies produces a cost of equity estimate equal to 9.4 percent. I note  
16 that the 10.3 percent cost of equity I find based on my cost of equity  
17 studies is an average of my DCF, risk premium, and CAPM model results.

18

19 Q. Why do your DCF model results differ from those obtained by Mr. Garrett?

20 A. My quarterly DCF model results differ from Mr. Garrett's primarily because  
21 I use analysts' estimates of long-term growth for the growth component of  
22 the DCF model, whereas Mr. Garrett uses his estimate of long-run growth

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<sup>5</sup> Direct Testimony of David J. Garrett, 55:5-56:16.

1 in Gross Domestic Product (“GDP”) for the growth component of his DCF  
2 model.

3

4 Q. Why do you use analysts’ growth rates to estimate the growth component  
5 of the DCF model?

6 A. I use analysts’ growth rates reported by I/B/E/S Thomson Reuters  
7 because my studies indicate that the analysts’ growth rates are more  
8 highly correlated with stock prices than other estimates of long-term  
9 growth. This evidence provides strong support for the conclusion that  
10 investors use analysts’ growth rates in making stock buy and sell  
11 decisions, and thus the analysts’ growth rates should be used to estimate  
12 the growth component of the DCF model.

13

14 Q. Does Mr. Garrett agree with your use of analysts’ growth forecasts to  
15 estimate investors’ growth expectations in the DCF model?

16 A. No. Mr. Garrett believes that it is inappropriate to use analysts’ growth rate  
17 forecasts to estimate investors’ growth expectations in the DCF model  
18 because analysts’ growth forecasts generally exceed the projected long-  
19 term growth of the economy as a whole; and, in his opinion, it would be  
20 irrational for investors to believe that companies can grow forever at a rate  
21 in excess of the expected growth in the economy.<sup>6</sup>

22

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<sup>6</sup> Direct Testimony of David J. Garrett, 46:1-47:8.

1 Q. In addition to his estimate of long-term GDP growth, does Mr. Garrett  
2 consider any other growth estimates as a proxy for investors' growth  
3 expectations in his application of the DCF model?

4 A. Yes. Mr. Garrett also considers inflation, real GDP, and the current risk-  
5 free rate as additional estimates of long-term GDP growth. However, the  
6 4.1 percent long-term growth estimate that Mr. Garrett uses in his DCF  
7 calculation is based entirely on an estimate of nominal GDP growth.<sup>7</sup>

8

9 Q. Mr. Garrett seems to believe that investors' growth expectations must be  
10 rational. Are investors' growth expectations always rational?

11 A. No. In hindsight, most economists would agree that stock investors'  
12 growth expectations during the technology stock boom of the late 1990s  
13 and early 2000s, and real estate investors' growth expectations during the  
14 real estate boom of 2001 to 2007, were irrational. Yet, it was these  
15 "irrational" growth expectations that caused stock and real estate prices to  
16 rise by so much during those periods.<sup>8</sup>

17

18 Q. Does the DCF model only require the use of investors' growth  
19 expectations when investors' growth expectations are rational?

20 A. No. The DCF model requires the use of investors' growth expectations,  
21 whether rational or irrational.

22

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<sup>7</sup> Direct Testimony of David J. Garrett, 54:11-55:4.

<sup>8</sup> Direct Testimony of David J. Garrett, 55:5-56:16.

1 Q. Is it appropriate for Mr. Garrett to reduce the growth term in his DCF  
2 model to reflect his belief that investors'/analysts' growth expectations are  
3 irrationally high, without also reducing the stock price term in his model to  
4 reflect the impact of irrationally high growth expectations on the stock  
5 price?

6 A. No. If Mr. Garrett believes that analysts'/investors' growth expectations are  
7 irrational, he should recognize that irrationally high growth expectations  
8 are likely to be accompanied by irrationally high stock prices. Indeed, as  
9 noted above, in hindsight, both growth expectations and stock prices were  
10 irrational during the stock market boom of the late 1990s and early 2000s  
11 and the real estate boom of 2001 - 2007. To be consistent, Mr. Garrett  
12 should adjust not only his growth estimates to reflect his belief regarding a  
13 rational estimate of the long-run growth in the economy, but also his stock  
14 prices to reflect his belief regarding a rational estimate of the value of the  
15 company.

16

17 Q. Does Mr. Garrett's opinion that a company cannot grow at a rate greater  
18 than the rate of growth in GDP forever imply that analysts' growth  
19 forecasts cannot be used to estimate the growth component in applying  
20 the DCF model?

21 A. No. Mr. Garrett fails to recognize that the DCF model requires the growth  
22 expectations of investors, not the growth expectations of Mr. Garrett. If  
23 investors use analysts' growth rates to value stocks in the marketplace,  
24 Mr. Garrett should use analysts' growth rates to estimate the growth  
25 component of the DCF model. Mr. Garrett also fails to recognize that



1 companies do not have to grow at the same rate forever for the single-  
2 stage DCF Model to be a reasonable approximation of how prices are  
3 determined in capital markets.

4

5 Q. Does the opinion that a company cannot grow at a rate of growth greater  
6 than the growth in GDP forever imply that Mr. Garrett's assumption is  
7 correct that companies must grow at his estimate of long-term GDP  
8 growth in every year?

9 A. No. The opinion that a company's earnings cannot grow at a rate greater  
10 than the rate of growth in the GDP forever does not imply that companies  
11 must grow at an expected GDP growth rate in every year. Mr. Garrett's  
12 assumption that companies must only grow at the same rate as his  
13 estimate of expected GDP growth is completely arbitrary.<sup>9</sup>

14

15 Q. Mr. Garrett uses an estimate of long-term GDP growth equal to  
16 4.1 percent. Did Mr. Garrett examine more than one estimate of nominal  
17 long-term GDP growth?

18 A. No.

19

20 Q. Whether or not you believe that estimates of long-term GDP growth are  
21 appropriately used as estimates of growth in the DCF model, are you  
22 aware of other estimates of nominal long-term GDP growth that exceed  
23 the 4.1 percent estimate used by Mr. Garrett?

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<sup>9</sup> Direct Testimony of David J. Garrett, 56:2-5.

1 A. Yes. Although I do not believe that long-term GDP growth is the growth  
2 estimate investors use when they invest in stocks and, therefore, is not  
3 appropriately used as the estimate of growth in the DCF model, I am  
4 aware that estimates of nominal long-term GDP growth are available from  
5 the Social Security Administration and the Energy Information  
6 Administration, for example; and the current nominal long-term GDP  
7 estimates from these sources are 4.6 percent and 4.4 percent,  
8 approximately 50 basis points and 30 basis points higher than the  
9 4.1 percent estimate used by Mr. Garrett. The data underlying these  
10 estimates are shown on on my Exhibit JWV-3.

11

12 **B. CAPITAL ASSET PRICING MODEL ANALYSIS**

13 Q. What is the CAPM?<sup>10</sup>

14 A. The CAPM is an equilibrium model of the security markets in which the  
15 expected or required return on a given security is equal to the risk-free  
16 rate of interest, plus the company equity “beta,” times the market risk  
17 premium:

18 
$$\text{Cost of equity} = \text{Risk-free rate} + \text{Equity beta} \times \text{Market risk premium}$$

19 The risk-free rate in this equation is the expected rate of return on a risk-  
20 free government security, the equity beta is a measure of the company’s  
21 risk relative to the market as a whole, and the market risk premium is the  
22 premium investors require to invest in the market basket of all securities  
23 compared to the risk-free security.

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<sup>10</sup> Direct Testimony of David J. Garrett, 60:13 – 63:8.

1

2 Q. How does Mr. Garrett estimate the risk-free rate, the equity beta, and the  
3 market risk premium in his application of the CAPM?

4 A. For his estimate of the risk-free rate, Mr. Garrett uses the 2.77 percent 30-  
5 day average yield on 30-year Treasury bonds over the period  
6 November 16, 2017 through December 29, 2017. For his estimate of the  
7 company-specific risk factor or beta, Mr. Garrett uses the average 0.75  
8 Value Line beta for his proxy utilities. For his estimate of the expected risk  
9 premium on the market portfolio, Mr. Garrett examines the historical equity  
10 risk premium data reported by Duff and Phelps, risk premium estimates  
11 reported by the IESE Business School survey and the Graham and  
12 Harvey survey, the Damodaran risk premium estimates, and his own  
13 implied equity risk premium calculations.<sup>11</sup> Based on his review of these  
14 sources, Mr. Garrett uses 5.7 percent as his estimate of the risk premium  
15 on the market portfolio.

16

17 Q. What CAPM result does Mr. Garrett obtain from his CAPM analysis?

18 A. Mr. Garrett obtains a CAPM result equal to 7.0 percent.<sup>12</sup>

19

20 Q. Do you agree with Mr. Garrett's CAPM analysis of FCG's cost of equity?

21 A. No. I disagree with Mr. Garrett's estimate of the risk-free rate, his estimate  
22 of the risk premium on the market portfolio, and his failure to acknowledge

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<sup>11</sup> Direct Testimony of David J. Garrett, 67:1 – 71:15.

<sup>12</sup> Direct Testimony of David J. Garrett, 88:1-11.

1 the substantial evidence that the CAPM tends to underestimate the cost of  
2 equity for companies such as his proxy companies with betas less than  
3 1.0.

4

5 Q. Why do you disagree with Mr. Garrett's 2.77 percent estimate of the risk-  
6 free rate?

7 A. I disagree with Mr. Garrett's 2.77 percent estimate of the risk-free rate  
8 because the analysis presented in my direct testimony at pages 41-42  
9 indicates that the forecasted yield on long-term Treasury bonds is  
10 approximately 4.2 percent, and economists continue to predict that  
11 interest rates will rise significantly. In estimating the forward-looking equity  
12 risk premium on equity investments, it is more reasonable to use a  
13 forecasted interest rate rather than a current interest rate on long-term  
14 Treasury securities because the forecasted interest rate is the best  
15 estimate of interest rate during the period in which rates will be in effect.

16

17 Q. Mr. Garrett uses a beta equal to 0.75 that is significantly less than the  
18 average market beta of 1.0. Does Mr. Garrett acknowledge the evidence  
19 discussed on pp. 50 – 51 of your direct testimony that the CAPM tends to  
20 underestimate the cost of equity for companies, such as his proxy  
21 companies, that have betas less than 1.0?

22 A. No. Given the convincing evidence that the CAPM underestimates the  
23 cost of equity for companies with betas less than 1.0, Mr. Garrett should  
24 have recognized, for this reason alone, that his cost of equity estimates  
25 underestimate FCG's cost of equity.

1

2 Q. In arriving at his 5.7 percent estimate of the risk premium on the market  
3 portfolio, Mr. Garrett uses several sources of risk premium estimates,  
4 including the Graham-Harvey survey of executive expectations for the  
5 return on the S&P 500 over the next ten years compared to the interest  
6 rate on 10-year Treasury bonds.<sup>13</sup> Does the Graham-Harvey survey also  
7 provide information on the weighted average cost of capital and hurdle  
8 rates that companies actually use to make real-world investment  
9 decisions?

10 A. Yes. Graham and Harvey state that executives report that their firms use  
11 actual weighted average costs of capital in the range 9.3 percent to  
12 9.7 percent, and they report that they use investment hurdle rates in the  
13 range 13.1 percent to 14.2 percent. Graham and Harvey's reported  
14 information on the WACCs and hurdle rates actually used by executives to  
15 make investment decisions is more relevant to assessing FCG's cost of  
16 equity than the information on executives views on expected returns on  
17 the S&P 500.

18

19 Q. You note that the Graham and Harvey survey indicates that executives  
20 use weighted average costs of capital in the range 9.3 percent to  
21 9.7 percent to make real world investment decisions. Can you provide an  
22 indication of the magnitude of the cost of equity associated with weighted  
23 average costs of capital in the range 9.3 percent to 9.7 percent?

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<sup>13</sup> Direct Testimony of David J. Garrett, 89:8 – 90:8.

1 A. Yes. A company's weighted average cost of capital is a weighted average  
 2 of its cost of debt and its cost of equity, where the weights are the  
 3 percentages of debt and equity in the company's capital structure. If a  
 4 company has a cost of debt equal to 5 percent and a capital structure  
 5 containing 50 percent debt and 50 percent equity, in that case, the *cost of*  
 6 *equity must be in the range 13.6 percent to 14.4 percent* when the  
 7 weighted average cost of capital is in the range 9.3 percent to 9.7 percent.

8

	Cost Rate	% of Total	Weighted Cost
9 Debt	5.0%	50.0%	2.5%
10 Equity	13.6%	50.0%	6.8%
11 Total			9.3%

12

13 Debt	5.0%	50.0%	2.5%
14 Equity	14.4%	50.0%	7.2%
15 Total			9.7%

16

17  
 18 Q. What are the implications of the evidence that executives use actual  
 19 WACCs in the range 9.3 percent to 9.7 percent and investment hurdle  
 20 rates in the range 13.1 percent to 14.2 percent to make real world  
 21 investment decisions?

22 A. Because both the weighted average cost of capital and the hurdle rate are  
 23 weighted averages of the cost of debt and the cost of equity, and the cost  
 24 of debt is less than the cost of equity, the costs of equity that executives  
 25 actually use in making real world investment decisions are likely to be in

1 the range 13 percent to 15 percent. Thus, based on this evidence, the  
2 market risk premium must be considerably higher than Mr. Garrett's  
3 assumed 5.7 percent; and the cost of equity must be considerably higher  
4 than Mr. Garrett's calculated 7.0 percent CAPM cost of equity using a  
5 5.7 percent market risk premium.

6

7 Q. Why is it more relevant to focus on the weighted average costs of capital  
8 and costs of equity actually used by executives to make investment  
9 decisions?

10 A. It is more relevant to focus on the weighted average costs of capital and  
11 costs of equity executives actually use to make real world investment  
12 decisions because executives have a high incentive to use their best  
13 estimates when real dollars are at stake.

14

15 Q. Mr. Garrett also attempts to support the 5.7 percent market risk premium  
16 used in his CAPM calculation with his own study of the implied market  
17 return on the S&P 500. Do you agree with Mr. Garrett's study of the  
18 implied market return on the S&P 500?<sup>14</sup>

19 A. No. I have several concerns with Mr. Garrett's study. First, his Equation 9  
20 for the value of the S&P 500 is misspecified: the value of each year's  
21 forecasted earnings should be discounted by the cost of equity, not by the  
22 risk-free rate plus the cost of equity. Second, as shown in his Exhibit DJG-  
23 10, Mr. Garrett uses the historical growth over the five-year period

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<sup>14</sup> Direct Testimony of David J. Garrett, 69:9 – 72:8.

1           2011–2016, 0.96 percent, to forecast future growth, rather than using  
2           analysts’ forecasts of future growth. Because the economy was in a  
3           recession over much of those five years and is expected to perform better  
4           in the future, Mr. Garrett’s decision to use a 0.96 percent historical growth  
5           ending in a recession year understates investors’ expected future growth.  
6           Third, I note that Mr. Garrett’s decision to use a 0.96 percent historical  
7           growth rate for the S&P 500 is inconsistent with his use of a 4.1 percent  
8           growth rate in his DCF analysis of the cost of equity for natural gas  
9           utilities.

10

11   Q.    Why do you use a forecasted yield to maturity on 20-year Treasury bonds  
12           rather than a current yield in your CAPM calculations?

13   A.    As I explain in my direct testimony, I use a forecasted yield to maturity on  
14           20-year Treasury bonds rather than a current yield to maturity because the  
15           fair rate of return standard requires that a company have an opportunity to  
16           earn its required return on its investment during the forward-looking period  
17           during which rates will be in effect. Because current interest rates are  
18           depressed as a result of the Federal Reserve’s efforts to stimulate the  
19           economy by keeping interest rates low, current interest rates at this time  
20           are a poor indicator of expected future interest rates. Economists project  
21           that future interest rates will be higher than current interest rates as the  
22           Federal Reserve allows interest rates to rise in order to prevent inflation.  
23           Thus, the use of forecasted interest rates is consistent with the fair rate of  
24           return standard, whereas the use of current interest rates at this time is  
25           not.



1

2 Q. Are economists forecasting that interest rates will increase in the next  
3 several years?

4 A. Yes. As I discuss in my direct testimony, economists are projecting that  
5 future interest rates will be higher than current interest rates as the  
6 Federal Reserve allows interest rates to rise in order to prevent inflation.

7

8 Q. Are economists continuing to forecast that interest will rise in the next  
9 several years?

10 A. Yes. For example, the Energy Information Administration (“EIA”) provides  
11 forecasts for yields on ten-year Treasury notes and AA-utility bonds,  
12 projecting yields of 3.81 percent and 4.07 percent on ten-year Treasury  
13 notes in the year 2019 and 2020, and yields on AA-rated utility bonds  
14 equal to 5.73 percent and 6.12 percent in 2019 and 2020. (See EIA, Table  
15 20, Macroeconomic Indicators, released February 6, 2018.) In  
16 comparison, Mr. Garrett has used a risk-free rate of only 2.77 percent in  
17 his CAPM analysis<sup>15</sup>. I note that the EIA forecast is conservative because  
18 yields on ten-year Treasury notes and AA-utility bonds likely understate  
19 yields on long-term Treasury bonds and A-rated or lower investment grade  
20 utility bonds.

21

22	Year	2018	2019	2020
23	10-year Treasury Note	3.12	3.81	4.07

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<sup>15</sup> Direct Testimony of David J. Garrett, 64:10.

1           AA-utility Bond                           5.11           5.73           6.12

2

3    Q.    Based on your analysis of Mr. Garrett's CAPM evidence, what is your  
4           conclusion regarding the reasonableness of his 7.0 percent CAPM cost of  
5           equity estimate?

6    A.    I conclude that Mr. Garrett's CAPM cost of equity estimate is  
7           unreasonably low and significantly less than FCG's true cost of equity. I  
8           also conclude that there is nothing in his testimony that would cause me to  
9           change my conclusions that: (1) the cost of equity for an average business  
10          risk natural gas utility is 10.3 percent; and (2) FCG should be allowed an  
11          opportunity to earn a return on equity equal to 11.25 percent to  
12          compensate for the greater financial risk in its ratemaking capital structure  
13          compared to the financial risk reflected in the proxy companies' cost of  
14          equity.

15

16           **III. REBUTTAL OF MR. GARRETT'S RECOMMENDED 9.25 PERCENT**

17                           **ALLOWED RATE OF RETURN ON EQUITY FOR FCG**

18    Q.    What allowed rate of return on equity does Mr. Garrett recommend for  
19           FCG?

20    A.    Mr. Garrett recommends an allowed ROE of 9.25 percent, a  
21           recommendation that is 225 basis points higher than his 7.0 percent  
22           estimate of FCG's cost of equity.<sup>16</sup>

23

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<sup>16</sup> Direct Testimony of David J. Garrett, 10:6.

1 Q. How does Mr. Garrett arrive at his recommended 9.25 percent allowed  
2 ROE?

3 A. Mr. Garrett arrives at his recommended 9.25 percent allowed ROE by:  
4 (1) estimating that FCG's cost of equity is 7.0 percent; (2) noting that  
5 FCG's current allowed ROE is 11.25 percent; and (3) recommending that  
6 the Commission gradually reduce FCG's current 9.25 percent allowed  
7 return on equity to his 7.0 percent estimate of FCG's cost of equity. In his  
8 opinion, a reduction of FCG's allowed return on equity from 11.25 percent  
9 to 9.25 percent would be a move in the right direction, without increasing  
10 FCG's risk. (Garrett at 10)

11

12 Q. Does Mr. Garrett provide a test of the reasonableness of his conclusion  
13 that FCG's cost of equity is significantly less than FCG's current  
14 11.25 percent allowed ROE?

15 A. Yes. Mr. Garrett compares the average awarded ROE for U.S. natural gas  
16 utilities from 2005 to the third quarter of 2017 to Dr. Damodaran's  
17 estimates of the market cost of equity over the same period.<sup>17</sup> Using the  
18 data shown in Mr. Garrett's Exhibit DJG-15, the average awarded ROE  
19 over the period 2005 to the third quarter 2017 exceeds Dr. Damodaran's  
20 average estimate of the market cost of equity by more than 260 basis  
21 points. Because Mr. Garrett believes that Dr. Damodaran has provided a  
22 reasonable estimate of the required market return, Mr. Garrett concludes  
23 that: (1) utility commissions such as the Florida Public Service

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<sup>17</sup> Direct Testimony of David J. Garrett, 90:1-8.

1 Commission (FPSC or Commission) have consistently awarded allowed  
2 ROEs that exceed utilities' costs of equity by more than 200 basis points;  
3 and (2) the FPSC should significantly reduce FCG's current 11.25 percent  
4 allowed ROE.

5

6 Q. Do you agree with Mr. Garrett's opinion that Dr. Damodaran's data prove  
7 that utility commissions have consistently granted allowed ROEs that  
8 exceed utilities' costs of equity by more than 200 basis points over the  
9 period 2005 to 2017?

10 A. No. Dr. Damodaran's data simply represent the results of a mechanical  
11 application of Dr. Damodaran's market model to market data for the  
12 S&P 500. Mr. Garrett fails to acknowledge that public utility commissions  
13 generally set a utility's allowed ROE equal to the commission's best  
14 estimate of the utility's cost of equity based on the evidence presented in  
15 each proceeding. Although Mr. Garrett and I might disagree with a  
16 decision regarding the cost of equity in specific cases, in my experience,  
17 there is no evidence that utility commissions intentionally set a utility's  
18 allowed return on equity above the best estimate of the utility's cost of  
19 equity; nor has Mr. Garrett provided any such evidence. To suggest  
20 otherwise is an insult to commissioners.

21

22 Q. In your previous response, you explain why Mr. Garrett's attempt to test  
23 the reasonableness of his recommendation to reduce FCG's allowed ROE  
24 is not probative. Is there a better way to test the reasonableness of Mr.

1           Garrett's recommendation to reduce FCG's allowed ROE from  
2           11.25 percent to 9.25 percent?

3    A.    Yes. I note that one of Mr. Garrett's sources in his testimony is the  
4           Graham and Harvey annual survey of chief financial officers. ("The Equity  
5           Risk Premium in 2016," John R. Graham and Campbell R. Harvey) In the  
6           survey cited by Mr. Garrett, Graham and Harvey ask the CFO survey  
7           participants to provide information on: (1) the company's internally  
8           calculated weighted average cost of capital ("WACC"); and (2) the hurdle  
9           rate the company uses to make investment decisions. As discussed  
10          above, Graham and Harvey find that the average internally calculated  
11          WACC for U.S. companies is in the range 9.3 percent to 9.7 percent, and  
12          that the average hurdle rate used to make investment decisions is in the  
13          range 13.1 percent to 14.2 percent. As also discussed above, a weighted  
14          average cost of capital in the range 9.3 percent to 9.7 percent implies a  
15          cost of equity in the range 13 percent to 15 percent.

16

17    Q.    What is the relevance of the Graham and Harvey finding that the average  
18          internally calculated WACC for U.S. companies is in the range 9.3 percent  
19          to 9.7 percent, and that the average hurdle rate used to make investment  
20          decisions is in the range 13.1 percent to 14.2 percent?

21    A.    As discussed above, these data provide a better test of the  
22          reasonableness of Mr. Garrett's recommended 9.25 percent ROE  
23          because they reflect the costs of capital managers actually use to make  
24          real-world investment decisions rather than a mechanical application of a  
25          formula to market data without any consideration of whether investors

1 actually use this formula in making investment decisions. Thus, in  
2 summary, the WACCs and hurdle rates reported by Graham and Harvey  
3 indicate that Mr. Garrett's recommended 9.25 percent allowed ROE is far  
4 below a reasonable estimate of FCG's cost of equity and weighted  
5 average cost of capital.

6

7 **IV. REBUTTAL OF MR. GARRETT'S COMMENTS ON FCG'S CHANGE IN**  
8 **ITS CAPITAL STRUCTURE**

9 Q. Mr. Garrett notes that in response to OPC ROG 8-175, FCG has proposed  
10 an increase in its equity ratio to maintain its credit metrics in response to  
11 the 2017 Tax Cuts and Jobs Act ("the Act"). Does Mr. Garrett agree with  
12 FCG's proposal?

13 A. No. Mr. Garrett objects to the Company's proposal, stating that if "FCG is  
14 to deviate from its current capital structure, it should be recapitalizing with  
15 higher levels of debt, not equity."<sup>18</sup>

16

17 Q. Do you agree with Mr. Garrett's suggestion that, if proposing a change,  
18 FCG should have a higher percentage of debt in its capital structure?

19 A. No. Mr. Garrett fails to understand the credit rating agencies' concerns  
20 about the impact of the Tax Cuts and Jobs Act ("The Act") on the credit  
21 metrics of Southern Company Gas and the importance of strong credit  
22 ratings on the ability of Southern Company Gas to finance the natural gas  
23 utility operations of FCG.

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<sup>18</sup> Direct Testimony of David J. Garrett, 98:1-3.

1

2 Q. Have rating agencies expressed opinions about the impacts of the Act on  
3 utilities?

4 A. Yes. Rating agencies have issued statements regarding their views on the  
5 impact of the Act on the utility industry. Standard & Poor's, Moody's, and  
6 Fitch have issued the following statements, for example.

7

8 [W]e believe the effect on creditworthiness of regulated  
9 utilities and their holding companies could be negative... The  
10 effect will depend on the reaction of utility regulators. (U.S.  
11 Tax Reform: For Utilities' Credit Quality, Challenges Abound,  
12 January 24, 2018, p. 2, Standard & Poor's RatingsDirect)

13

14 Tax Reform is credit negative for US regulated utilities...  
15 Utilities will work closely with state regulators to try to  
16 mitigate the negative impact of tax reform and in some cases  
17 they may seek to refine their corporate financial policies.  
18 (Moody's Changes Outlooks on 25 US Regulated Utilities  
19 Primarily Impacted By Tax Reform, January 19, 2018,  
20 Moody's Investors Service)

21

22 The Tax Cuts and Jobs Act signed into law on Dec. 22, 2017  
23 has negative credit implications for regulated utilities and  
24 utility holding companies.... (Tax Reform Impact on the U.S.  
25 Utilities, Power & Gas Sector, January 24, 2018, p. 1,

1 FitchRatings)

2

3 Q. What is the impact of the Act on the financial strength of Southern  
4 Company Gas and FCG?

5 A. The Act is credit dilutive to Southern Company Gas - and hence FCG -  
6 because the lowering of the federal tax rate from 35 percent to 21 percent  
7 and the elimination of bonus depreciation reduce the cash flows available  
8 to cover interest and principal payments. These changes have a material  
9 negative impact on the company's projected cash flows in the test year  
10 and beyond.

11

12 Q. Is Southern Company Gas taking action to mitigate the negative impacts  
13 of the Act on its credit metrics?

14 A. Yes. In order to mitigate the negative impacts of the Act and to protect  
15 customers and FCG from effects of credit degradation, Southern  
16 Company Gas will need to increase the percentage of equity in its capital  
17 structure. Rating agencies look to quantitative financial metrics in  
18 assessing the company's financial strength, with Funds from Operations  
19 ("FFO") to Debt being the most prominent. A reduction in cash flow or FFO  
20 requires an offsetting decrease in debt to maintain consistent metrics.  
21 Increasing the percentage of equity and reducing the percentage of debt  
22 in the company's capital structure is an appropriate response to maintain  
23 financial integrity. Increasing the percentage of equity in the capital  
24 structure is supported by the ratings agencies, as shown in the following  
25 statements.



1

2

Regulators must also recognize that tax reform is a strain on utility credit quality, and we expect companies to request stronger capital structures and other means to offset some of the negative impact. (U.S. Tax Reform: For Utilities' Credit Quality, Challenges Abound, January 24, 2018, p. 5, Standard & Poor's RatingsDirect)

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Potential regulatory offsets to tax-related cash leakage could include... changes to the equity layer or allowed ROEs in rates. (Moody's Changes Outlooks on 25 US Regulated Utilities Primarily Impacted By Tax Reform, January 19, 2018, Moody's Investors Service)

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Some jurisdictions may be open to a negotiated outcome that focuses more on benefits of rate stability and creditworthy utilities... including Increase in authorized equity ratio and/or return on equity. (Tax Reform Impact on the U.S. Utilities, Power & Gas Sector, January 24, 2018, p. 4, FitchRatings)

21

22

23

24

25

Q. Based on your understanding of the impact of the Act on utilities' cash flows and credit metrics, do you agree with Mr. Garrett's conclusion that "if FCG is to deviate from its current capital structure, it should be recapitalizing with higher levels of debt, not equity"?

1 A. No. In fact, increasing the percentage of debt in the capital structure would  
2 most likely result in a more negative impact on credit quality than if  
3 Southern Company Gas were to take no action regarding its capital  
4 structure. Based on the ratings agencies' statements, it is clear that their  
5 expectation is for utilities to take action to mitigate the impact of the Act on  
6 credit metrics, in particular FFO. To mitigate the impact of the Act, there  
7 are three ways to maintain a credit quality FFO: (1) increase cash flows to  
8 offset the impact of the elimination of bonus depreciation and flow back of  
9 excess deferred taxes to customers; (2) reduce debt by replacing with  
10 equity financing; and (3) a combination of increasing cash flows and  
11 reducing debt. None of the three options include increasing the  
12 percentage of debt in the capital structure.

13

14 Q. In your opinion, is reducing the percentage of debt in the capital structure  
15 a reasonable option for mitigating the impact of the Act on the credit rating  
16 of Southern Company Gas?

17 A. Yes. Reducing the percentage of debt in the capital structure is a  
18 reasonable option for Southern Company Gas to maintain its strong credit  
19 rating and for FCG to minimize the impact of the Act on customers.

20

21 Q. Why is it important for Southern Company Gas to have strong credit  
22 ratings?

23 A. FCG makes short-term and long-term investments that serve the interests  
24 of customers' needs for safe, reliable, and affordable energy. In order to  
25 best serve customers, the Company needs stable and assured access to

1 capital markets at reasonable costs and terms in all market conditions.  
2 Southern Company Gas provides this stability and security. In summary,  
3 strong credit ratings for Southern Company Gas are important because  
4 FCG relies on the financial strength and stability of Southern Company  
5 Gas to finance its natural gas utility operations and provide high quality  
6 utility services to its customers in Florida.

7

8 **V. RESPONSE TO MR. GARRETT'S COMMENTS ON MY COST OF**  
9 **EQUITY STUDIES**

10 Q. Does Mr. Garrett have any comments on your cost of equity studies and  
11 recommendation?

12 A. Yes. Mr. Garrett criticizes: (1) my analysis of the risk of investing in  
13 regulated natural gas utilities such as FCG; (2) my estimate of investors'  
14 earnings growth expectations in my DCF analysis; (3) my estimate of the  
15 market risk premium and the expected return on the market in my CAPM  
16 analyses; and (4) my estimate of the risk-free rate component in my  
17 CAPM.<sup>19</sup>

18

19 **A. RISK ANALYSIS**

20 Q. Do you provide a discussion of the business risks of investing in regulated  
21 natural gas utilities in your direct testimony?

22 A. Yes. I provide a general discussion of the business risks of investing in  
23 regulated natural gas utilities in my direct testimony on pages 14 – 23. In

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<sup>19</sup> Direct Testimony of David J. Garrett, 86:12 – 90:8.

1 my discussion, I note that the business risk of investing in natural gas  
2 utilities such as FCG is caused by: (1) demand uncertainty; (2) operating  
3 expense uncertainty; (3) investment cost uncertainty; (4) high operating  
4 leverage; and (5) regulatory uncertainty.

5

6 Q. How does Mr. Garrett respond to your discussion of the risks of investing  
7 in regulated utilities such as FCG?

8 A. Mr. Garrett argues that my analysis of the business risks of investing in  
9 regulated utilities is misleading because the risks I identify are all “firm-  
10 specific risks” that have no “meaningful effect on the cost of equity  
11 estimate,” and my view that the regulatory process creates additional risks  
12 for utilities is completely untrue. In his opinion, regulation significantly  
13 reduces the risk of investing in natural gas utilities, rather than increasing  
14 the risk of investing in natural gas utilities.

15

16 Q. Do you agree with Mr. Garrett’s opinion that the business risk factors you  
17 identify for regulated utilities have no effect on a utility’s cost of equity  
18 because these risks are diversifiable?

19 A. No. The business risks I identify cannot be diversified away because,  
20 other than regulatory risk, they reflect general risks faced by investors in  
21 all other industries. I discuss these risks in the context of the natural gas  
22 utility industry simply to provide a context for understanding how these  
23 general risks affect natural gas utilities in particular. I note, contrary to Mr.  
24 Garrett’s implication, I do not increase my cost of equity estimate to reflect

1           any of these risks. My cost of equity recommendation depends entirely on  
2           my capital market cost of equity studies described in my direct testimony.

3

4   Q.    Is regulatory risk diversifiable?

5   A.    No. Because regulatory risk applies only to public utilities, it cannot be  
6           diversified away by investing in companies in other industries.

7

8           **B.       ESTIMATE OF INVESTORS' GROWTH EXPECTATIONS**

9   Q.    What growth estimates do you use in your application of the DCF model?

10   A.    As discussed above and in my direct testimony, I use the analysts' growth  
11           estimates reported by Thomson Reuters as my estimate of growth in my  
12           application of the DCF model.

13

14   Q.    Do you provide evidence in your direct testimony that investors use  
15           analysts' growth forecasts?

16   A.    Yes.

17

18   Q.    What is Mr. Garrett's criticism of your use of analysts' growth forecasts to  
19           estimate the growth component of the DCF model?

20   A.    Mr. Garrett claims that it would be irrational for investors to use analysts'  
21           growth forecasts to estimate the growth component of the DCF model  
22           because the average analysts' growth rate for utilities exceeds a  
23           reasonable expectation of long-term growth in the economy as a whole.

24

1 Q. Do you address above Mr. Garrett's statement that it would be irrational  
2 for investors to use analysts' growth forecasts to estimate the growth  
3 component of the DCF model?

4 A. Yes. I discuss above and in my direct testimony that there is considerable  
5 evidence that investors use analysts' growth rates to make investment  
6 decisions and that any irrationality reflected in analysts' growth rates will  
7 also be reflected in stock prices. I further note that attempts to remove an  
8 assumed irrational component of growth rates without also removing the  
9 same irrational component from stock prices will produce downwardly-  
10 biased DCF results.

11

12 **C. ESTIMATE OF THE MARKET RISK PREMIUM AND**  
13 **EXPECTED RETURN ON THE MARKET IN THE CAPM**

14 Q. On what basis does Mr. Garrett criticize the risk premium and market  
15 return components you use in your CAPM analyses?

16 A. Mr. Garrett argues that expert surveys and independent calculations of the  
17 implied equity risk premium on the market indicate that the expected risk  
18 premium on the market is in the range 4 percent to 5.7 percent, and that  
19 an upper bound for the return on the market portfolio is 7.8 percent.<sup>20</sup>

20

21 Q. Have you responded above to Mr. Garrett's claim that expert surveys  
22 demonstrate that the expected risk premium on the market portfolio is in

---

<sup>20</sup> Direct Testimony of David J. Garrett, 75:1 – 76:14.

1 the range 4.0 percent to 5.7 percent and that the upper bound for the  
2 return on the market portfolio is 7.8 percent?

3 A. Yes. I respond to Mr. Garrett's that the expected risk premium on the  
4 market is in the range 4.0 percent to 5.7 percent and that an upper bound  
5 for the required return on the market portfolio is 7.8 percent by citing  
6 evidence from the Graham and Harvey survey that executives report that  
7 their firms use actual weighted average costs of capital in the range  
8 9.3 percent to 9.7 percent and use investment hurdle rates in the range  
9 13.1 percent to 14.2 percent to make real world investment decisions. As I  
10 discuss above, these data indicate that the expected risk premium on the  
11 market is significantly higher than 4.0 percent to 5.7 percent and that the  
12 expected return on the market portfolio is significantly higher than  
13 7.8 percent.

14

15 Q. You note above that Mr. Garrett justifies his 7.8 percent estimate of the  
16 market cost of equity, in part, on his own study of the implied market  
17 return on the S&P 500. Do you agree with Mr. Garrett's study of the  
18 implied market return on the S&P 500?

19 A. No. As I discuss above, Mr. Garrett's study is flawed in several ways.  
20 First, his Equation 9 for the value of the S&P 500 is misspecified: the  
21 value of each year's forecasted earnings should be discounted by the cost  
22 of equity, not by the risk-free rate plus the cost of equity. Second, as  
23 shown in his Exhibit DJG-10, Mr. Garrett uses the historical growth over  
24 the five-year period 2011 - 2016, 0.96 percent, to forecast future growth,  
25 rather than using analysts' forecasts of future growth. Because the

1 economy was in a recession over much of those five years and is  
2 expected to perform better in the future, Mr. Garrett's decision to use  
3 historical growth ending in a recession year understates investors'  
4 expected future growth.

5

6 I also note that Mr. Garrett suggests in his DCF analysis that 4.1 percent  
7 is a reasonable long-term growth estimate for utilities. If 4.1 percent is a  
8 reasonable growth estimate for utilities, a growth estimate of 0.96 percent  
9 cannot be a reasonable estimate of long-term growth for the S&P 500.

10

11 Furthermore, Mr. Garrett's own 7.7 percent estimate of the required  
12 market return (Garrett at 90) is only 70 basis points higher than his  
13 7.0 percent estimate of the required return for natural gas utilities. Mr.  
14 Garrett's 7.8 percent estimate for the required return on the market  
15 compared to his 7.0 percent estimate of the required return for natural gas  
16 utilities suggests a utility beta equal to 0.91 ( $7.0 \div 7.7 = 0.91$ ).

17

18 **D. ESTIMATE OF THE RISK-FREE RATE**

19 Q. Is Mr. Garrett correct when he claims that your estimate of the risk-free  
20 rate considers "the return on utility bonds" as well as the forecasted yield  
21 on Treasury securities?<sup>21</sup>

22 A. No. My estimate of the risk-free rate is based entirely on forecasted yields  
23 for Treasury securities.

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<sup>21</sup> Direct Testimony of David J. Garrett, 82:10-13.



1

2

**VI. REBUTTAL OF MR. WALTERS**

3 Q. What is Mr. Walters' recommended cost of equity for FCG?

4 A. Mr. Walters recommends a cost of equity for FCG equal to 9.3 percent.<sup>22</sup>

5

6 Q. How does Mr. Walters estimate FCG's cost of equity?

7 A. Mr. Walters estimates FCG's cost of equity by applying several cost of  
8 equity methods to a proxy group of natural gas utilities. His cost of equity  
9 methods include applications of the DCF model, risk premium methods,  
10 and the CAPM.

11

12 Q. What areas of Mr. Walters' testimony will you address in your rebuttal  
13 testimony?

14 A. I will address Mr. Walters' proxy companies, DCF analysis, risk premium  
15 analysis, CAPM analysis, and his comments on my direct testimony.

16

17 **A. MR. WALTERS' PROXY COMPANY GROUP**

18 Q. What proxy companies does Mr. Walters use to estimate FCG's cost of  
19 equity?

20 A. Mr. Walters uses a proxy group of seven Value Line natural gas utilities,  
21 including Atmos Energy Corporation, New Jersey Resources Corporation,  
22 NiSource Inc., Northwest Natural Gas Company, ONE Gas, Inc.,

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<sup>22</sup> Direct Testimony of Christopher C. Walters, 2:9.

1 Southwest Gas Holdings, Inc., and Spire Inc.<sup>23</sup>

2

3 Q. Does Mr. Walters use all the Value Line natural gas utilities?

4 A. No. Mr. Walters eliminates three companies, Chesapeake Utilities, South  
5 Jersey Industries, and UGI Corp.<sup>24</sup>

6

7 Q. Why does Mr. Walters eliminate these three companies?

8 A. Mr. Walters eliminates two companies, Chesapeake Utilities and UGI  
9 Corp., because “they are not rated by S&P or Moody’s.” (Walters at 22)  
10 He eliminates South Jersey Industries because it “has announced that on  
11 October 16, 2017, it reached a definitive agreement to acquire  
12 Elizabethtown Gas and Elkton Gas.”

13

14 Q. Do you agree with Mr. Walters’ opinion that South Jersey should be  
15 eliminated because it has reached an agreement to acquire Elizabethtown  
16 Gas and Elkton Gas?

17 A. No. South Jersey’s agreement to acquire these gas companies would only  
18 impact the cost of equity studies if the agreement had a measureable  
19 impact on the company’s stock price and earnings growth expectations. In  
20 the case of South Jersey’s stock price, the closing price on the day of the  
21 merger announcement, \$31.73, is virtually identical to the \$31.69 average  
22 daily closing price since the merger announcement (October 17, 2017

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<sup>23</sup> Exhibit CCW-2.

<sup>24</sup> Direct Testimony of Christopher C. Walters, 20:20 – 21:7.

1 through January 31, 2018). With regard to earnings expectations, analysts  
2 do not include the impact of a merger on the acquiring company's  
3 earnings until after the merger has been completed. Thus, Mr. Walters'  
4 has unnecessarily eliminated South Jersey from his already small proxy  
5 group.

6

7 Q. Do you agree with Mr. Walters' decision to eliminate Chesapeake Utilities  
8 and UGI because they do not have bond ratings from S&P or Moody's?

9 A. No. First, I disagree with Mr. Walters' opinion that a company must have a  
10 bond rating in order to be included in a proxy group for the purpose of  
11 estimating the cost of equity. The cost of equity depends on the risk of  
12 investing in a company's stock, not on the risk of investing in its bonds. I  
13 also disagree with Mr. Walters' statement that UGI does not have a bond  
14 rating. While UGI Corp. does not have a credit rating, its subsidiary, UGI  
15 Utilities, has a high investment-grade Moody's bond rating of A2.

16

17 I also note that Mr. Walters is inconsistent in his application of his bond  
18 rating criteria. For example, Mr. Walters excludes UGI Corp. because it  
19 does not have a bond rating, but has retained New Jersey Resources in  
20 his proxy group even though New Jersey Resources does not have a  
21 credit rating from either S&P or Moody's; rather, its natural gas subsidiary  
22 New Jersey Natural Gas Company has a credit rating.

23

24 Q. What is the impact of Mr. Walters' decision to eliminate these companies  
25 from his proxy group on his cost of equity results?

1 A. Although it is difficult to assess the impact because Mr. Walters has not  
2 reported results for these companies, I note that in my analysis, DCF  
3 results for Chesapeake are close to average and results for both South  
4 Jersey and UGI are above average. On the basis of my own DCF  
5 analysis, I believe that Mr. Walters' exclusion of these companies lowered  
6 his cost of equity estimate for FCG by approximately 40 basis points.

7

8 **B. MR. WALTERS' DCF STUDIES**

9 Q. What DCF model does Mr. Walters use to estimate FCG's cost of equity?

10 A. Mr. Walters uses an annual DCF model to estimate FCG's cost of equity.

11

12 Q. Do you agree with Mr. Walters' use of an annual DCF model to estimate  
13 FCG's cost of equity?

14 A. No. As discussed in my direct testimony, the DCF model is based on the  
15 assumption that a company's stock price reflects the present value of the  
16 dividends investors expect to receive from their ownership of the stock.  
17 Because the companies in Mr. Walters' analysis all pay dividends  
18 quarterly, these companies' stock prices reflect the present value of a  
19 quarterly stream of dividends. Hence, the quarterly DCF model is the only  
20 DCF model that is consistent with the basic assumption that stock prices  
21 are equal to the expected present value of future dividends.

22

23 Q. Does Mr. Walters present more than one DCF analysis for the  
24 Commission to consider?

1 A. Yes. Mr. Walters presents three DCF analyses: (1) a constant growth DCF  
2 analysis based on analysts' growth rates; (2) a constant growth DCF  
3 analysis based on sustainable growth rates; and (3) a three-stage DCF  
4 analysis in which growth rates decline to an estimate of long-run Gross  
5 Domestic Product ("GDP") growth in three stages.

6

7 Q. What DCF results does Mr. Walters obtain from his two constant growth  
8 DCF analyses?

9 A. Mr. Walters obtains DCF results in the range to 8.08 percent to  
10 8.91 percent.<sup>25</sup>

11

12 Q. Do you agree with Mr. Walters' results from his constant growth DCF  
13 analyses?

14 A. No. Mr. Walters' constant growth DCF results are biased downwards by  
15 his choice of proxy companies, his failure to include flotation costs in his  
16 DCF model, and his failure to consider the differences in the market  
17 capitalization of his proxy companies.

18

19 Q. You note that Mr. Walters also performs a three-stage DCF analysis. What  
20 is the basic assumption of Mr. Walters' three-stage DCF model?

21 A. Mr. Walters' three-stage DCF model is based on the assumption that  
22 investors believe his proxy companies will grow at the average analyst  
23 growth rates for five years, decline to the long-run growth in the economy

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<sup>25</sup> Direct Testimony of Christopher C. Walters, 26:6 – 29:6.

1 in years six through ten and, beginning in the eleventh year, grow at the  
2 rate of 4.2 percent forever.<sup>26</sup>

3

4 Q. What results does Mr. Walters obtain from his three-stage DCF model?

5 A. Mr. Walters obtains results of 7.11 percent and 7.18 percent from the  
6 application of his three-stage DCF model.<sup>27</sup>

7

8 Q. Does Mr. Walters provide any evidence to support his basic assumption  
9 that utilities will grow at analysts' growth rates for the first five years,  
10 decline in growth for the next five years, and beginning in year eleven  
11 grow at the estimated GDP growth rate in perpetuity?

12 A. No. He simply assumes that rational investors would make this  
13 assumption.

14

15 Q. How does Mr. Walters justify the results of his three-stage DCF model?

16 A. Mr. Walters justifies the results of his three-stage DCF model on the  
17 grounds that, in his opinion, analysts' growth rates generally exceed the  
18 projected growth of the economy, and companies cannot grow forever at a  
19 rate in excess of the expected growth of the economy.

20

21 Q. Mr. Walters seems to believe that investors' growth expectations must be  
22 "rational."<sup>28</sup> Are investors' growth expectations always "rational"?

---

<sup>26</sup> Direct Testimony of Christopher C. Walters, 30:10-33:4.

<sup>27</sup> Direct Testimony of Christopher C. Walters, 36:6-18.

<sup>28</sup> Direct Testimony of Christopher C. Walters, 29:10-16.

1 A. No. As discussed above, most economists would agree that stock  
2 investors' growth expectations during the technology stock boom of the  
3 late 1990s and early 2000s, and real estate investors' growth expectations  
4 during the real estate boom of 2001 to 2007, were irrational. Yet, it was  
5 these "irrational" growth expectations that caused stock and real estate  
6 prices to rise by so much during those periods. However, the DCF model  
7 requires the use of investors' growth expectations, whether rational or  
8 irrational.

9

10 Q. Is it appropriate for Mr. Walters to adjust the growth term in his DCF model  
11 to reflect his assertion that investor growth expectations are irrational,  
12 without also adjusting the stock price term in his model?

13 A. No. Again, as I discuss above, if Mr. Walters believes that investors'  
14 growth expectations are irrational over the long term, he should also  
15 recognize that "irrational" growth expectations are likely to be  
16 accompanied by "irrational" stock prices. Indeed, as discussed above,  
17 both growth expectations and stock prices were "irrational" during the  
18 stock market boom of the late 1990s and early 2000s. To be consistent in  
19 applying his own definition of "rational," Mr. Walters would need to adjust  
20 not only his growth estimates to reflect the long-run growth in the  
21 economy, but also his stock prices to reflect a "rational" estimate of the  
22 value of the company.

23

1 Q. Does Mr. Walters' opinion that a company cannot grow at a rate greater  
2 than the rate of growth in GDP forever imply that a single-stage DCF  
3 model cannot be used to estimate the cost of equity?

4 A. No. Mr. Walters fails to recognize that the DCF model requires the growth  
5 expectations of investors, not the growth expectations of Mr. Walters. If  
6 investors use analysts' growth rates to value stocks in the marketplace,  
7 Mr. Walters should use analysts' growth rates to estimate the growth  
8 component of the DCF model. Mr. Walters also fails to recognize that  
9 companies do not have to grow at the same rate forever for the single-  
10 stage DCF Model to be a reasonable approximation of how prices are  
11 determined in capital markets.

12

13 Q. Does Mr. Walters include an allowance for flotation costs in his DCF  
14 analysis?

15 A. No.

16

17 Q. Do you agree with Mr. Walters' failure to include flotation costs in his DCF  
18 analysis?<sup>29</sup>

19 A. No. As I discuss in my direct testimony, flotation costs are a cost of issuing  
20 securities that must be reflected in a cost of equity analysis for investors to  
21 earn a return that is commensurate with returns on other investments of  
22 the same risk.

23

---

<sup>29</sup> Direct Testimony of Christopher C. Walters, 54:22-57:9.



1 Q. Has the Commission previously accepted a flotation cost allowance for  
2 Florida utilities?

3 A. Yes. For example, the Commission included an adjustment for flotation  
4 costs in its 2009 TECO Order. The Commission states, "We have  
5 traditionally recognized a reasonable adjustment for flotation costs in the  
6 determination of the investor-required ROE. ... such adjustments have  
7 typically been on the order of 25 to 50 basis points." (Order No. PSC-09-  
8 0283-FOF-EI, Docket No. 080317-EI, April 30, 2009, at 44) In addition, I  
9 note that this Commission typically uses a flotation cost allowance of four  
10 percent in both DCF and CAPM models to estimate the cost of equity for  
11 water utilities in Florida. (See Order No. PSC-16-0254-PAA-WS, issued  
12 June 29, 2016 in Docket No. 160006-WS, regarding the annual  
13 reestablishment of authorized range of return on common equity for water  
14 and wastewater utilities.)

15

16 **C. MR. WALTERS' RISK PREMIUM MODEL**

17 Q. How does Mr. Walters estimate the required risk premium for investing in  
18 his natural gas utility proxy group?

19 A. Mr. Walters estimates the required risk premium for investing in his proxy  
20 natural gas utilities by comparing the average authorized natural gas utility  
21 rate of return on equity for each year from 1986 through September 2017  
22 to both the average interest rate on long-term Treasury bonds and the  
23 average interest rate on A-rated utility bonds in each year. Mr. Walters  
24 finds that the risk premium over the yield on long-term Treasury bonds  
25 falls in the range 4.17 percent to 6.68 percent, and the risk premium over

1 the yield on A-rated utility bonds falls in the range 2.80 percent to  
2 5.52 percent. Recognizing that allowed equity risk premiums tend to  
3 increase as interest rates decline, Mr. Walters applies a 0.75 weight to the  
4 high end of his risk premium range and a 0.25 weight to the low end of his  
5 risk premium range. Mr. Walters thus concludes that the appropriate risk  
6 premium on an investment in utility stocks compared to long-term  
7 Treasury bonds is 6.1 percent, and the appropriate risk premium on an  
8 investment in utility stocks compared to A-rated utility bonds is  
9 4.9 percent.<sup>30</sup>

10

11 Q. What risk premium cost of equity estimates does Mr. Walters obtain from  
12 his analysis of the relationship between allowed ROEs and the interest  
13 rates on Treasury bonds and utility bonds?

14 A. Adding his 6.1 percent risk premium over long-term Treasury bonds to his  
15 forecasted Treasury bond yield of 3.6 percent, Mr. Walters obtains a risk  
16 premium cost of equity of 9.7 percent. Adding a 4.9 percent risk premium  
17 over A-rated utility bonds to his forecasted 4.2 percent utility bond yield,  
18 Mr. Walters obtains a risk premium cost of equity of 9.1 percent. Based on  
19 his evidence, Mr. Walters concludes that the risk premium cost of equity is  
20 9.6 percent.<sup>31</sup>

21

---

<sup>30</sup> Direct Testimony of Christopher C. Walters, 43:3-21.

<sup>31</sup> Direct Testimony of Christopher C. Walters, 43:20.

1 Q. Do you agree with Mr. Walters' method of estimating the required risk  
2 premium on natural gas utility stocks?

3 A. No. Although Mr. Walters correctly recognizes that the required equity risk  
4 premium increases when interest rates decline, his method of estimating  
5 the relationship between the required equity risk premium and interest  
6 rates is not statistically rigorous.

7

8 Q. Have you studied the statistical relationship between the risk premiums  
9 implied by historical allowed rates of return on equity and the yields on  
10 long-term Treasury bonds and utility bonds over the period 1986 to the  
11 present reported by Mr. Walters?<sup>32</sup>

12 A. Yes. To evaluate Mr. Walters' risk premium estimates, I perform a  
13 regression analysis of the relationship between the risk premium implied  
14 by the allowed rates of return on equity issued by regulatory commissions  
15 and the level of interest rates. In his risk premium analyses, Mr. Walters  
16 examines historical data on the spreads between allowed ROEs and the  
17 yields on both 30-year Treasury bonds and A-rated utility bonds. Thus, I  
18 have performed statistical regression analyses of the relationship between  
19 the historical allowed equity risk premiums and the yields on 30-year  
20 Treasury bonds and A-rated utility bonds.

21

22 Q. What does your statistical regression analysis of the relationship between  
23 historical allowed equity risk premiums and Treasury bond yields show?

---

<sup>32</sup> Exhibit CCW-13.

1 A. My regression analysis demonstrates that the relationship between the  
2 risk premium implied by historical allowed ROEs and the yield on 30-year  
3 Treasury bonds is given by the following equation:

4  $RP_{\text{AUTHORIZED}} = 8.04 - 0.46 \times T_B$

5 t-statistic = (30.98) (10.61)

6 where:

7  $RP_{\text{AUTHORIZED}}$  = the risk premium implied by utility  
8 commission authorized rates of return  
9 on equity,

10 8.04 and 0.46 = estimated regression coefficients with t-  
11 statistics shown in parentheses; and

12  $T_B$  = the yield on long-term Treasury bonds.

13

14 Q. What is the meaning of the negative 0.46 coefficient on the Treasury bond  
15 variable?

16 A. The negative 0.46 coefficient on the Treasury bond variable indicates that  
17 the authorized risk premium increases by approximately 46 basis points  
18 for every one hundred basis point decrease in interest rates.

19

20 Q. What is the meaning of the 10.61 t-statistic in the above equation?

21 A. The 10.61 t-statistic indicates that the strong negative relationship  
22 between the risk premium and the yield on 30-year Treasury bond is  
23 statistically significant.

24

1 Q. What risk premium do you obtain from your statistical analysis of the  
2 relationship between the implied allowed equity risk premium and the  
3 interest rate on long-term Treasury bonds?

4 A. Using Mr. Walters' 3.6 percent interest rate on long-term Treasury bonds, I  
5 obtain a risk premium of 6.4 percent over the Treasury bond yield. My  
6 6.4 percent risk premium estimate is 80 basis points higher than the  
7 average 5.6 percent risk premium on U.S. Treasury bonds shown on  
8 Mr. Walters' Exhibit CCW-13, page 1 of 1, and 30 basis points higher than  
9 the 6.1 percent risk premium used by Mr. Walters.

10

11 Q. Does your regression equation support the conclusion that the risk  
12 premium tends to increase when interest rates decline?

13 A. Yes. The negative coefficient associated with the interest rate variable,  $T_B$ ,  
14 indicates that the risk premium moves in the opposite direction as the  
15 interest rate on long-term Treasury bonds, thus verifying the conclusion  
16 that the risk premium increases when the yield on long-term Treasury  
17 bonds declines.

18

19 Q. Have you also studied the relationship between the implied allowed equity  
20 risk premium and the yield on utility bonds, as reported by Mr. Walters?

21 A. Yes. Using the data found in Mr. Walters' Exhibit CCW-14, the implied  
22 allowed equity risk premium compared to the yield on utility bonds is given  
23 by the relationship:

$$\begin{aligned} 24 \quad & RP_{\text{AUTHORIZED}} &= & 7.41 &- & 0.48 \times A_B \\ 25 \quad & t\text{-statistic} &= & (23.46) & & (11.02) \end{aligned}$$

1 where:

2  $RP_{\text{AUTHORIZED}}$  = the risk premium implied by utility  
3 commission authorized rates of return  
4 on equity,

5 7.41 and 0.48 = estimated regression coefficients with t-  
6 statistics shown in parentheses; and

7  $A_B$  = the yield on Moody's A-rated utility  
8 bonds.

9

10 Q. What is the meaning of the negative 0.48 coefficient on the A-utility bond  
11 yield variable?

12 A. The negative 0.48 coefficient on the A-utility bond yield variable indicates  
13 that the allowed equity risk premium increases by approximately 48 basis  
14 points for every one hundred basis point decrease in the yield on A-rated  
15 utility bonds.

16

17 Q. What is the meaning of the negative 11.02 t-statistic in the above equation?

18 A. The negative 11.02 t-statistic indicates that the strong negative relationship  
19 between the risk premium and utility bond yields is statistically significant.

20

21 Q. What risk premium do you obtain from your statistical analysis of the  
22 relationship between implied allowed equity risk premiums and the interest  
23 rate on utility bonds?

24 A. Using Mr. Walters' 4.2 percent interest rate on utility bonds, I obtain a risk  
25 premium of 5.4 percent. This risk premium estimate is 140 basis points

1 higher than the average 4.0 percent risk premium shown on Mr. Walters'  
2 Exhibit CCW-14, page 1 of 1 and 50 basis points higher than the 4.9 percent  
3 risk premium used by Mr. Walters.

4

5 Q. Why are the estimated risk premiums from your regression analyses higher  
6 than the average risk premiums over the period 1986 through September  
7 2017?

8 A. The risk premiums from my regression analyses are higher than the average  
9 risk premiums over the period of Mr. Walters' studies because, as discussed  
10 above, risk premiums generally increase when interest rates decline, and  
11 interest rates have declined over the period of Mr. Walters' studies. My  
12 regression analyses correctly take into account the inverse relationship  
13 between risk premiums and interest rates.

14

15 Q. What cost of equity estimates would Mr. Walters have obtained from his risk  
16 premium analyses if he had correctly calculated the inverse relationship  
17 between allowed equity risk premiums and interest rates, as you have done in  
18 your regression analyses?

19 A. Adding the calculated risk premiums of 6.2 percent over Treasury bonds and  
20 5.4 percent over utility bonds to Mr. Walters' 3.6 percent yield on long-term  
21 Treasury bonds and his 4.2 percent utility bond yield produces an average  
22 risk premium cost of equity estimate equal to 9.8 percent (the average of 10.0  
23 percent and 9.6 percent). This cost of equity estimate is 50 basis points  
24 higher than Mr. Walters' recommended 9.3 percent cost of equity and 20  
25 basis points higher than his 9.6 percent recommended risk premium cost of

1 equity.

2

3 Q. You note that Mr. Walters' risk premium estimates are based on his  
4 3.6 percent estimate of the yield on long-term Treasury bonds and his  
5 4.2 percent estimated utility bond yield. Could Mr. Walters reasonably have  
6 used higher interest rates in his risk premium cost of equity analyses?

7 A. Yes. Economists are continuing to predict that interest rates will rise. Mr.  
8 Walters consulted EIA forecasts to estimate GDP growth, and he could  
9 reasonably have used EIA forecast data to develop projections of long-  
10 term Treasury and utility bond yields. In its 2017 report, the EIA projected  
11 yields of 3.75 percent for ten-year Treasury notes and 5.71 percent for  
12 AA-rated utility bonds. The 2018 EIA release projects yields of 3.81  
13 percent and 4.07 percent on ten-year Treasury notes in the year 2019 and  
14 2020, and yields on AA-rated utility bonds equal to 5.73 percent and  
15 6.12 percent in 2019 and 2020. (See EIA, Table 20, Macroeconomic  
16 Indicators, released February 6, 2018.) These data suggest that Mr.  
17 Walters should have used yields on long-term Treasury bonds in the  
18 range 4.0 percent to 4.5 percent and yields on A-rated utility bonds in the  
19 range 6.0 percent to 6.25 percent. (These yield ranges are based on the  
20 January 2018 spreads between ten-year and 20-year Treasury securities  
21 and AA-rated and A-rated utility bonds.)

22

23 Q. What costs of equity would Mr. Walters have obtained from risk premium  
24 analyses if he had used these more reasonable estimates of the yields on  
25 long-term Treasury bonds and A-rated utility bonds?



1 A. Using regression coefficients shown above and Treasury bonds yields of  
2 4.0 percent to 4.5 percent, Mr. Walters would have obtained cost of equity  
3 estimates equal to 10.2 percent to 10.4 percent. Using the regression  
4 coefficients shown above and A-rated utility bonds yields of 6.0 percent to  
5 6.5 percent, Mr. Walters would have obtained cost of equity estimates  
6 equal to 10.5 percent to 10.8 percent.

7

8 **D. MR. WALTERS' CAPM**

9 Q. The CAPM requires estimates of the risk-free rate, the company-specific  
10 risk factor, or beta, and either the required return on an investment in the  
11 market portfolio, or the risk premium on the market portfolio compared to  
12 an investment in risk-free government securities. How does Mr. Walters  
13 estimate these CAPM inputs?

14 A. For the risk-free rate, Mr. Walters uses a 3.6 percent yield on long-term  
15 Treasury bonds. For the company-specific risk factor or beta, Mr. Walters  
16 uses the average 0.71 Value Line beta for his proxy utilities. For his  
17 estimate of the expected risk premium on the market portfolio, Mr. Walters  
18 uses both a forward-looking risk premium estimate equal to 7.7 percent  
19 and an historical risk premium estimate equal to 6.0 percent.<sup>33</sup>

20

21 Q. How does Mr. Walters arrive at his 7.7 percent and 6.0 percent estimates  
22 of the market risk premium?

---

<sup>33</sup> Direct Testimony of Christopher C. Walters, 46:8 – 47:13.

1 A. Mr. Walters derives his forward-looking risk premium estimate  
2 (7.7 percent) from the difference between an expected market return  
3 (11.3 percent) and a risk-free rate (3.6 percent). Mr. Walters derives his  
4 historical risk premium estimate (6 percent) from the 6 percent difference  
5 between the historical arithmetic average of achieved total return on the  
6 S&P 500 (12 percent) and the total return on long-term Treasury bonds  
7 (6 percent).

8

9 Q. What CAPM cost of equity estimate does Mr. Walters obtain from his  
10 CAPM analyses?

11 A. Mr. Walters obtains a high CAPM estimate of 9.1 percent ( $9.1 = 3.6 + 0.71$   
12  $\times 7.7$ ) and a low CAPM estimate of 7.89 percent ( $7.89 = 3.6 + 0.71 \times$   
13  $6$ ).<sup>34</sup>

14

15 Q. Do you agree with Mr. Walters' CAPM analysis of the cost of equity?

16 A. No. I disagree with his: (1) 3.6 percent estimate of the risk-free rate;  
17 (2) 0.71 beta estimate; (3) use of a 6.0 percent total return on long-term  
18 Treasury bonds to measure the historical risk premium on the market  
19 portfolio; and (4) his failure to acknowledge the substantial evidence that  
20 the CAPM tends to underestimate the cost of equity for companies such  
21 as his comparable companies with betas less than 1.0.

22

---

<sup>34</sup> Direct Testimony of Christopher C. Walters, 49:9.

1 Q. Why do you disagree with Mr. Walters' 3.6 percent estimate of the risk-  
2 free rate?

3 A. I disagree with Mr. Walters' 3.6 percent estimate of the risk-free rate  
4 because the analysis presented in my direct testimony indicates that the  
5 forecasted yield on long-term Treasury bonds is approximately  
6 4.2 percent.

7

8 Q. Why do you disagree with Mr. Walters' use of a 0.71 beta estimate?

9 A. I disagree with Mr. Walters' use of a 0.71 beta estimate because the  
10 average Value Line beta for the Value Line natural gas distribution  
11 companies is 0.75; and I present evidence in my direct testimony that  
12 supports the conclusion that a reasonable beta based on long-run returns  
13 on utility stocks compared to the returns on the S&P 500 is 0.90.

14

15 Q. Why do you disagree with Mr. Walters' use of a 6.0 percent total return on  
16 long-term Treasury bonds in his historical risk premium analysis?

17 A. I disagree with Mr. Walters' use of a 6.0 percent total return on long-term  
18 Treasury bonds because the CAPM requires an estimate of the difference  
19 between the expected return on the market portfolio and the risk-free rate,  
20 and the total return on Treasury bonds is not risk free. The total return on  
21 Treasury bonds is not risk free because the total return is subject to both  
22 interest rate risk and credit risk. Thus, it is only the income return that is  
23 risk free.

24

1 Q. Does Mr. Walters acknowledge the evidence that the CAPM tends to  
2 underestimate the cost of equity for companies, such as his proxy  
3 companies, that have betas less than 1.0?

4 A. No.

5

6 Q. Do you cite evidence that the CAPM tends to underestimate the cost of  
7 equity in your direct testimony and in your rebuttal of Mr. Garrett?

8 A. Yes. I cite this evidence in my direct testimony and in my rebuttal of Mr.  
9 Garrett above.

10

11 Q. What CAPM result would Mr. Walters have obtained for the Value Line  
12 natural gas utility group if he had used the average beta of 0.75 for the  
13 Value Line natural gas utilities, a forecasted Treasury bond yield equal to  
14 4.2 percent, and his market risk premium equal to 7.7 percent?

15 A. Using the average beta of 0.75 for the Value Line natural gas utilities, a  
16 forecasted Treasury bond yield equal to 4.2 percent, and his market risk  
17 premium equal to 7.7 percent, Mr. Walters would have obtained a CAPM  
18 estimate of FCG's cost of equity equal to 10.0 percent. ( $4.2 + 0.75 \times 7.7 =$   
19 10.0)

20

21 Q. What CAPM cost of equity would Mr. Walters have obtained if he had  
22 used a beta of 0.9, a forecasted Treasury bond yield equal to 4.2 percent,  
23 and his market risk premium equal to 7.7 percent?

24 A. Using a beta of 0.9, a forecasted Treasury bond yield equal to 4.2 percent,  
25 and his market risk premium equal to 7.7 percent, Mr. Walters would have

1           obtained a CAPM estimate of FCG's cost of equity equal to 11.1 percent.  
2           (4.2 + 0.9 x 7.7 = 11.1)

3

4           **E.     RESPONSE TO MR. WALTERS' COMMENTS ON**  
5           **DR. VANDER WEIDE'S TESTIMONY**

6   Q.    What are Mr. Walters' primary criticisms of your cost of equity analyses?

7   A.    Mr. Walters disagrees with my financial risk adjustment, DCF analysis,  
8           flotation cost adjustment, risk premium analysis, and CAPM analyses.<sup>35</sup>

9

10   **1. Financial Risk Adjustment**

11   Q.    How do financial market participants measure risk?

12   A.    Under the assumption that the probability distribution of returns is  
13           symmetric, *i.e.*, centered on the mean return, financial market participants  
14           generally measure risk by the forward-looking variance of return on  
15           investment.

16

17   Q.    Does the forward-looking variance of an investor's return on a stock  
18           investment in a company depend on the company's capital structure?

19   A.    Yes. The forward-looking variance of an investor's return depends on the  
20           company's debt to equity ratio, where both debt and equity are measured  
21           in terms of market values, not book values.

22

23   Q.    What is the meaning of the term, "financial risk"?

---

<sup>35</sup> Direct Testimony of Christopher C. Walters, 53:1-65:9.

1 A. Economists use the term, “financial risk” to refer to the contribution of the  
2 firm’s capital structure, that is, its debt to equity ratio, to the forward-  
3 looking variance of return on the firm’s stock.

4

5 Q. Does financial risk reflect the market values of debt and equity in a  
6 company’s capital structure or the book values of debt and equity in a  
7 company’s capital structure?

8 A. Financial risk measures the contribution of the company’s capital structure  
9 to the forward-looking variance of return on the company’s stock, and the  
10 forward-looking variance depends on the market values of debt and equity  
11 in the company’s capital structure, not the book values. (See, for example,  
12 Richard A. Brealey, Stewart C. Myers, and Franklin Allen, Principles of  
13 Corporate Finance, 8<sup>th</sup> ed., McGraw-Hill, 2006, pp. 452 - 456) Thus,  
14 financial risk reflects the market values of debt and equity in a company’s  
15 capital structure, not the book values.

16

17 Q. Is FCG recommending that its weighted average cost of capital in this  
18 proceeding be calculated based on the market values of debt and equity in  
19 its capital structure?

20 A. No. Consistent with previous regulatory practice, FCG is recommending  
21 that its weighted average cost of capital be based on the book values of  
22 debt and equity in its capital structure.

23

1 Q. Is the financial risk associated with FCG's recommended capital structure  
2 measured in the same way as the financial risk associated with the capital  
3 structures of your proxy companies?

4 A. No. The financial risk of my proxy companies is reflected in their market  
5 value capital structures, while FCG is recommending that a book value  
6 capital structure be used for the purpose of setting rates. Thus, the  
7 financial risk of my proxy companies is measured by their market value  
8 capital structures, while FCG's financial risk is measured by its book value  
9 capital structure.

10

11 Q. How do you adjust your cost of equity results for your comparable  
12 companies to reflect the difference between the market's perception of the  
13 financial risk of your proxy companies and the financial risk reflected in  
14 FCG's recommended capital structure?

15 A. As described in my direct testimony, I adjust the cost of equity results for  
16 my comparable companies by equating the after-tax weighted average  
17 cost of capital of my proxy companies to the after-tax weighted average  
18 cost of capital of FCG. In this procedure, I use market-value capital  
19 structure weights for my comparable companies because the cost of  
20 capital for these companies is based on market values, and I use book  
21 value weights for FCG because the recommended cost of capital for FCG  
22 in this proceeding is based on book values.

23

24 Q. Does Mr. Walters agree with your financial risk adjustment?

25 A. No. Mr. Walters claims that my financial risk adjustment is "flawed and

1 produces an unjust result for FCG.”<sup>36</sup>

2

3 Q. Why do you adjust the cost of equity results for your proxy companies to  
4 reflect the average difference between the financial risk of your proxy  
5 companies and the financial risk reflected in FCG’s recommended capital  
6 structure?

7 A. I adjust my cost of equity results because they reflect a higher degree of  
8 financial risk than FCG’s recommended capital structure. In making this  
9 assessment, I recognize that investors measure the financial risk of  
10 investing in the equity of my proxy companies based on these companies’  
11 market value capital structures, while FCG is recommending a book value  
12 capital structure. Because investors demand a higher return for bearing  
13 greater risk, an adjustment is required to the cost of equity result for the  
14 proxy companies in order to give investors an opportunity to earn their  
15 required return on equity in the marketplace when allowed rates of return  
16 on equity are based on book value capital structures.

17

18 Q. You note that “investors measure the financial risk of investing in the  
19 equity of my proxy companies based on these companies’ market value  
20 capital structures.” Why do equity investors measure the financial risk of  
21 the proxy companies based on their market value capital structures?

22 A. Equity investors measure financial risk based on market value capital  
23 structures because, from the equity investor’s point of view, risk is

---

<sup>36</sup> Direct Testimony of Christopher C. Walters, 53:11.



1 measured by the forward-looking variance of return on investment; and  
2 the variance of return on investment depends on a company's market  
3 value capitalization, not its book value capitalization.

4

5 Q. How does Mr. Walters define financial risk?

6 A. Mr. Walters defines financial risk as the ability of a company to meet its  
7 financial obligation to pay the interest and principal on its debt. "The  
8 market's assessment of FCG's investment risk is best described by credit  
9 rating analysts' reports."<sup>37</sup>

10

11 Q. Does Mr. Walters' definition of financial risk reflect the point of view of  
12 equity investors?

13 A. No. Mr. Walters' definition of financial risk reflects the point of view of debt  
14 investors, not the point of view of equity investors. Whereas debt investors  
15 are justifiably concerned with a company's ability to cover the interest and  
16 principal payments on its debt, equity investors are primarily concerned  
17 with the forward-looking variance of return on their investment. As noted  
18 above, the forward-looking variance of return on investment depends on a  
19 company's market value capital structure, not its book value capital  
20 structure. Indeed, equity investors generally cannot buy a company's  
21 stock at book value.

22

---

<sup>37</sup> Direct Testimony of Christopher C. Walters, 17:10-11.

1 Q. In summary, do you agree with Mr. Walters' criticism of your financial risk  
2 adjustment?

3 A. No. Mr. Walters fails to recognize that equity investors measure financial  
4 risk by the forward-looking variance of return on their equity investment in  
5 the company, and the forward-looking variance of return on an equity  
6 investment in a company reflects the company's market value capital  
7 structure. Mr. Walters' criticism of my financial risk adjustment depends on  
8 his incorrect assertion that financial risk reflects book value capitalization  
9 ratios rather than market value capitalization ratios. While his assertion  
10 may be correct from the bond investor's point of view, it is certainly not  
11 correct from the equity investor's point of view. The equity investor's point  
12 of view is the only point of view that is relevant for determining the cost of  
13 equity.

14

15

## 2. DCF Analysis

16 Q. What issues does Mr. Walters have with regard to your DCF analysis?

17 A. Mr. Walters disagrees with my use of a quarterly DCF model, but chooses  
18 to address only his disagreement with my use of a market-weighted DCF  
19 result and my inclusion of a flotation cost adjustment.

20

21 Q. What is Mr. Walters' concern with your having used both a simple average  
22 and a market-weighted average DCF result?

1 A. Mr. Walters argues that my use of a market-weighted DCF result causes  
2 my result to be “overstated” and, he “is not aware of this methodology  
3 being explicitly relied on” in any jurisdiction.”<sup>38</sup>

4

5 Q. Does the DCF result you use to estimate FCG’s cost of equity represent  
6 only a market-weighted average?

7 A. No. I report both a simple average DCF result and a market-weighted  
8 average DCF result and conservatively use the average of the simple and  
9 market-weighted average results to estimate FCG’s cost of equity.

10

11 Q. Why is it reasonable to consider the market values of the proxy natural  
12 gas utilities when estimating the cost of equity in this proceeding?

13 A. The disparity in the market values of the natural gas utilities is relevant to  
14 estimating the cost of equity because the cost of equity is conceptually  
15 equal to the expected return on a portfolio of natural gas utility company  
16 investments of equal risk. Investors measure the expected return on a  
17 portfolio of investments by calculating a weighted average of the expected  
18 return on each security in the portfolio, using the market values of each  
19 security as weights. Because there are significantly more dollars invested  
20 in the larger market capitalization utilities than in the smaller market  
21 capitalization utilities, it is reasonable to give more weight to the larger  
22 utilities than to the smaller utilities in calculating the average DCF result.  
23 Market value weighting is particularly important considering the

---

<sup>38</sup> Direct Testimony of Christopher C. Walters, 54:17-21.

1 differences in the DCF results for the smallest companies compared to  
2 those for the larger utilities. For example, giving equal weight to the lower  
3 DCF result for the smallest utility in Mr. Walters' already small natural gas  
4 utility group, Northwest Natural Gas—which reflects only five percent of  
5 the total market capitalization of his group of seven natural gas utilities—  
6 causes a significant downward bias in Mr. Walters' DCF cost of equity  
7 estimate.

8

9

### 3. Flotation Costs

10 Q. Why do you include an adjustment for flotation costs in your DCF  
11 analysis?

12 A. I include an adjustment for flotation costs because, without such an  
13 adjustment, FCG would not be able to recover all the costs it incurs to  
14 finance its investments in electric plant and equipment.

15

16 Q. Does FCG issue equity in the capital markets?

17 A. No. Although FCG does not issue equity in the capital markets, its ultimate  
18 parent must issue equity to provide FCG the necessary financing to make  
19 investments in FCG's plant and equipment. If equity flotation costs are not  
20 recovered through the allowed returns on its equity investments in FCG  
21 and its other subsidiaries, investors in Southern Company cannot expect  
22 to earn a return commensurate with returns on other investments of  
23 similar risk.

24

25 Q. Does Mr. Walters agree with your flotation cost adjustment?

1 A. No. Mr. Walters claims that a flotation cost adjustment is inappropriate  
2 because the flotation cost adjustment: (1) “is not based on known and  
3 measurable costs for FCG” and the company has not presented any  
4 evidence that it incurs flotation costs; (2) “is not based on FCG’s actual  
5 costs;” and (3) will “produce an excessive rate of return to FCG.”<sup>39</sup>

6

7 Q. Is Mr. Walters correct when he asserts that there is no evidence that the  
8 Company has incurred flotation costs?

9 A. No. In Appendix 3 of Exhibit JVW-1 to my direct testimony, I present  
10 evidence that *all companies* incur flotation costs when they issue new  
11 equity securities, that flotation costs represent approximately five percent  
12 of the company’s pre-issue stock price, and that the company will not be  
13 able to earn a fair rate of return on its investment if it does not recover its  
14 flotation costs.

15

16 Q. What is the economic basis of your recommended flotation cost  
17 allowance?

18 A. My recommended flotation cost allowance is based on the fundamental  
19 economic and regulatory principles that: (1) a company should only invest  
20 in a new project if it can earn a return on its investment that is equal to or  
21 greater than its cost of capital; and (2) the time pattern of expense  
22 recovery should match the time pattern of benefits resulting from the  
23 expense. Because equity flotation costs are a legitimate expense of

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<sup>39</sup> Direct Testimony of Christopher C. Walters, 56:5-58:7.

1 raising capital, a company has no incentive to invest in new capital  
2 projects if equity flotation costs are not included in the cost of capital  
3 estimate. In addition, because the proceeds of an equity issuance are  
4 invested in assets that provide benefits over a long time period, the costs  
5 of an equity issuance should be recovered over a long period of time.

6

7 Q. Can you illustrate how this economic principle supports your  
8 recommended flotation cost allowance?

9 A. Yes. Suppose that a company incurs a five percent flotation cost expense  
10 on each equity issuance. As a result of the five percent flotation cost  
11 expense, the company will only be able to invest \$95 in new projects for  
12 each \$100 of equity it issues in the capital markets. If investors require a  
13 ten percent return on their \$100 equity investment in the company, the  
14 company will have to earn \$10 on its \$95 investment in new projects in  
15 order to earn a ten percent return for its investors. Thus, the presence of  
16 flotation costs has increased the required return on new projects from ten  
17 percent to 10.53 percent ( $\$10/\$95 = 10.53$  percent).

18

19

#### 4. Risk Premium Analysis

20 Q. What issue does Mr. Walters have with regard to your risk premium  
21 analysis?

22 A. Mr. Walters believes the ex ante risk premium value of 5.2 percent, which  
23 is developed from my study comparing DCF costs of equity to A-rated  
24 utility bonds over the period June 1998 through June 2017, is  
25 “unreasonable,” and that my forecasted utility bond yield of 5.8 percent

1 “overstates current observable utility bond yields, has no basis, and has  
2 been shown to have no relationship to market participants’ outlook over  
3 the next two to three years.” Mr. Walters further argues that the estimates  
4 I use from Value Line and EIA reflect “projected outlooks for capital market  
5 costs that are many years out into the future, ranging 10 years in the  
6 future.”<sup>40</sup>

7

8 Q. In your direct studies, you develop an ex ante risk premium estimate equal  
9 to 5.2 percent over the yield on A-rated utility bonds. What risk premium  
10 value does Mr. Walters use in his risk premium analysis based on A-rated  
11 utility bonds?

12 A. Although Mr. Walters criticizes my 5.2 percent risk premium estimate as  
13 being “unreasonable” and “excessive,” Mr. Walters himself uses a risk  
14 premium estimate of 4.9 percent that is only 30 basis points less than my  
15 estimated risk premium.

16

17 Q. Is Mr. Walters correct when he claims that the estimates on which you  
18 relied to develop your interest rate forecasts “have no basis” and reflect  
19 outlooks “ranging 10 years in the future”?

20 A. No. The information on which I relied is publicly available from reputable  
21 sources, including Value Line and EIA. Furthermore, as is clearly shown in  
22 the source documents from which I obtain my data, the years to which  
23 these data apply are 2018, 2019, and 2020, not ten years in the future.

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<sup>40</sup> Direct Testimony of Christopher C. Walters, 59:11-60:9.

1

2 Q. Is there current information which validates the reasonableness of the  
3 interest rate forecasts you have used?

4 A. Yes. As discussed above, the EIA has released their updated Annual  
5 Energy Outlook. These data indicate projected yields on AA-rated utility  
6 bonds equal to 5.11 percent in 2018, 5.73 percent in 2019, and  
7 6.12 percent in 2020; and projected yields on 10-year Treasury notes  
8 equal to 3.12 percent, 3.81 percent, and 4.07 percent in 2018, 2019, and  
9 2020, respectively. These data support the interest rate forecasts I used in  
10 my risk premium analyses.

11

12 Q. Why do you use forecasted interest rate data rather than current interest  
13 rates in your risk premium analysis?

14 A. I use a forecasted interest rate because the fair rate of return standard  
15 requires that FCG have an opportunity to earn its cost of equity during the  
16 period when rates are in effect, and the rates approved in this case will not  
17 come into effect until later in 2018.

18

19 Q. Does Mr. Walters also use forecasted interest rates in estimating FCG's  
20 cost of equity in his risk premium approach?

21 A. Yes. Mr. Walters uses forecasted, rather than current interest rates in his  
22 risk premium analysis comparing the average allowed return on equity for  
23 natural gas utilities to a forecasted yield on thirty-year Treasury bonds.<sup>41</sup>

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<sup>41</sup> Direct Testimony of Christopher C. Walters, 46:8-49:3.



1

2 Q. What are Mr. Walters criticisms of your ex post risk premium analysis?

3 A. Mr. Walters disagrees with my use of: (1) a forecasted interest rate on A-  
4 rated utility bonds rather than a currently observable interest rate; (2) the  
5 historical equity risk premium based on returns on the S&P 500 in addition  
6 the historical risk premium on utility stocks; and (3) a flotation cost  
7 adjustment. <sup>42</sup>

8

9 Q. Have you already discussed your use of forecasted interest rates and the  
10 reasons for a flotation cost adjustment in both your direct and your rebuttal  
11 testimonies?

12 A. Yes.

13

14 Q. Did you explain why you use the historical equity risk premium based on  
15 returns on the S&P 500 in addition the historical risk premium on utility  
16 stocks in your direct testimony?

17 A. Yes. I explain that I use the historical equity risk premium based on  
18 returns on the S&P 500 in addition the historical risk premium on utility  
19 stocks because I believe natural gas utilities today face risks that are  
20 somewhere in between the average risk of the S&P Utilities and the S&P  
21 500 over the years 1937 to 2017. Thus, I use the average of the two  
22 historically-based risk premiums as my estimate of the required risk  
23 premium in my ex post risk premium method. I also note that the risk

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<sup>42</sup> Direct Testimony of Christopher C. Walters, 61:6-19.

1 premiums that I obtain from these analyses are conservative, and lower  
2 than the risk premiums that Mr. Walters uses in his own risk premium  
3 studies.

4

5 **5. Capital Asset Pricing Model**

6 Q. Mr. Walters criticizes your CAPM analyses, arguing that you incorrectly  
7 “adjusted” a Value Line beta that was already adjusted.<sup>43</sup> Has Mr.  
8 Walters correctly characterized how you arrive at the 0.90 beta you use in  
9 one of your CAPM analyses?

10 A. No. The beta coefficient in the CAPM measures the ratio of the risk  
11 premium on particular company’s stock compared to the risk premium on  
12 the market portfolio. As I explain in my direct testimony and above, the  
13 Value Line adjustment to the “raw” beta estimate is insufficient to account  
14 for the evidence that the ratio of the risk premium on utility stocks to the  
15 risk premium on the S&P 500 has been approximately 0.90 over the years  
16 1937 to the present, whereas the current Value Line average “adjusted”  
17 beta is only 0.75. Thus, the 0.90 beta that I use in one of my CAPM  
18 analyses provides a correct adjustment to the raw beta, whereas the  
19 Value Line “adjusted” beta provides an insufficient adjustment to the raw  
20 beta.

21

22 Q. Does this conclude your rebuttal testimony?

23 A. Yes, it does.

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<sup>43</sup> Direct Testimony of Christopher C. Walters, 63:6-65:9.

**EXHIBIT JVW-3 REBUTTAL SCHEDULE 1  
ESTIMATES OF LONG-TERM GDP GROWTH**

	YEAR	BILLIONS OF PPP\$	YEAR	BILLIONS OF PPP\$	ANNUAL GDP GROWTH
Energy Information Administration	2017	19,359	2037	46,096	4.4%
Social Security Administration	2017	19,677	2040	54,881	4.6%
EIA, AEO Jan. 2017 Release		2017		2037	
Real GDP		17,075		25,796	
GDP Chain- type Price Index (2009=1.000)		1.134		1.798	
EIA, AEO Feb. 2018 Release		19,359		46,096	