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July 19, 2019

FILED

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Clerk's Office
N.C. Utilities Commission

Janice Fulmore, Deputy Clerk
North Carolina Utilities Commission
Dobbs Building, Fifth Floor
430 North Salisbury Street
Raleigh, North Carolina 27602

Re: Piedmont Natural Gas Company, Inc.'s
Application for a General Increase in Rates and Charges
Docket No. G-9, Sub 743

**VIA HAND DELIVERY**

Dear Ms. Fulmore:

Pursuant to the Commission's Rules of Practice and Procedure, we are enclosing the original and thirty-six (36) copies of Prepared Direct Testimony of Kevin W. O'Donnell, CFA, in this matter on behalf of Carolina Utility Customers Association, Inc. ("CUCA"). Kindly date-stamp and return to us via our courier the six (6) additional enclosed copies. Please let me know, at your early convenience, if you have any questions concerning this filing.

Very truly yours,

CRISP & PAGE, PLLC

Robert F. Page

Robert F. Page

Enclosures

cc: Sharon Miller
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**CERTIFICATE OF SERVICE**

I, the undersigned counsel for CUCA, do hereby certify that I served a copy of the foregoing Prepared Direct Testimony of Kevin W. O'Donnell, CFA, upon all parties of record in this proceeding, or their legal counsel, by electronic mail or by depositing a copy of same in the United States Postal Service, first class, postage prepaid, and addressed to them as indicated on the Service List attached hereto.

This the 19th day of July, 2019.

Robert F. Page /sam

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# BEFORE
# NORTH CAROLINA UTILITIES COMMISSION

**In the Matter of:**

| | | |
|---|---|---|
| **Application of Piedmont Natural** | ) | |
| **Gas Company for Adjustment** | ) | **Docket No. G-9, Sub 743** |
| **of Rates and Charges Applicable** | ) | |
| **to Natural Gas Service in North Carolina** | ) | |



**Direct Testimony**

**of**

**Kevin W. O'Donnell, CFA**

**On Behalf of**

**Carolina Utility Customers Association, Inc.**

**July 19, 2019**

Contents

## I. Introduction

**Q. PLEASE STATE YOUR NAME, POSITION, AND BUSINESS ADDRESS FOR THE RECORD.**

A. My name is Kevin W. O'Donnell. I am President of Nova Energy Consultants, Inc. My business address is 1350 Maynard Rd., Suite 101, Cary, North Carolina 27511.

**Q. ON WHOSE BEHALF ARE YOU PRESENTING TESTIMONY IN THIS PROCEEDING?**

A. I am testifying on behalf of the Carolina Utility Customers Association (CUCA). A number of CUCA members take natural gas service from the applicant, Piedmont Natural Gas Company (Piedmont or Company), and the outcome of this proceeding will have a direct bearing on these CUCA members.

**Q. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND RELEVANT EMPLOYMENT EXPERIENCE.**

A. I have a Bachelor of Science in Civil Engineering from North Carolina State University and a Master of Business Administration from the Florida State University. I earned the designation of Chartered Financial Analyst (CFA) in 1988. I have worked in utility regulation since September 1984, when I joined the Public Staff of the North Carolina Utilities Commission (NCUC). I left the NCUC Public Staff in 1991 and have worked continuously in utility consulting since that time, first with Booth & Associates, Inc. (until 1994), then as Director of Retail Rates for the North Carolina Electric Membership Corporation (1994-1995), and since then in my own consulting firm. I have been accepted as an expert witness on rate of return, cost of capital, capital structure, cost of service, rate design, and other regulatory issues in general rate cases, fuel cost proceedings, and other proceedings before the North

Carolina Utilities Commission, the South Carolina Public Service Commission, the Wisconsin Public Service Commission, the Virginia State Commerce Commission, the Minnesota Public Service Commission, the New Jersey Board of Public Utilities, the Colorado Public Utilities Commission, the Oklahoma Public Utilities Commission, the District of Columbia Public Service Commission, and the Florida Public Service Commission. In 1996, I testified before the U.S. House of Representatives' Committee on Commerce and Subcommittee on Energy and Power, concerning competition within the electric utility industry. Additional details regarding my education and work experience are set forth in Appendix A attached to this testimony.

**Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?**

A. The purpose of my testimony in this proceeding is to present my findings and recommendations to the Commission as to the proper rate of return, the appropriate rate design, and the allowable rate case expenses to grant Piedmont in the current proceeding.

**Q. IN THE DIRECT TESTIMONY OF ITS RATE OF RETURN WITNESS, WHAT RATE OF RETURN DID PIEDMONT RECOMMEND THAT THE COMMISSION ACCEPT?**

A. According to the testimony of Company Witness Hevert, Piedmont is seeking an overall rate of return of 7.68% based on the capital structure and cost rates as set out in Table 1 below.

Table 1: Piedmont Requested Cost of Capital

| Component | Capital Structure Ratio (%) | Cost Rate (%) | Wgtd. Cost Rate (%) |
|---|---|---|---|
| Long-Term Debt | 47.18% | 4.55% | 2.15% |
| Short-Term Debt | 0.82% | 2.82% | 0.02% |
| Common Equity | 52.00% | 10.60% | 5.51% |
| Total Capitalization | 100.00% | | 7.68% |

**Q. DO YOU AGREE WITH PIEDMONT'S RATE OF RETURN REQUEST?**

A. No. I disagree with Piedmont's requested return on equity.

**Q. PLEASE SUMMARIZE YOUR PRIMARY RECOMMENDATIONS IN THIS CASE.**

A. My recommendations in this case are as follows:

- the proper return on equity on which to set rates for Piedmont in this proceeding should not exceed 9.0%.
- the overall rate of return that should be granted Piedmont in this case is 6.85%;
- the proper rate class changes are as follows: 9.5% increase for residential consumers; 5.60% increase for small GS customers; -5.0% for medium GS customers; 6.0% for Large GS customers; 8.0% increase for Large GS Transportation customers; 0% change for Interruptible Sales customers; 9.0% reduction for interruptible transportation customers; 5% increase for military customers; and a 10% increase for municipal customers; and
- Piedmont's rate case expenses are grossly in excess of the costs for consumer witnesses and cost recovery for those expenses should be

slashed from $1.18 million to $365,000 to put these costs on-par with similar expenses for Public Staff employees and consultants.

**Q. COULD YOU PERFORM A COST OF EQUITY ANALYSIS DIRECTLY ON PIEDMONT NATURAL GAS?**

A. No. Piedmont Natural Gas is a wholly-owned subsidiary of Duke Energy Corp. Since Piedmont's stock is not publicly traded, I could not develop a cost of equity specifically for Piedmont. For that reason, I developed a proxy group of companies to assess the risk and corresponding return for Piedmont.

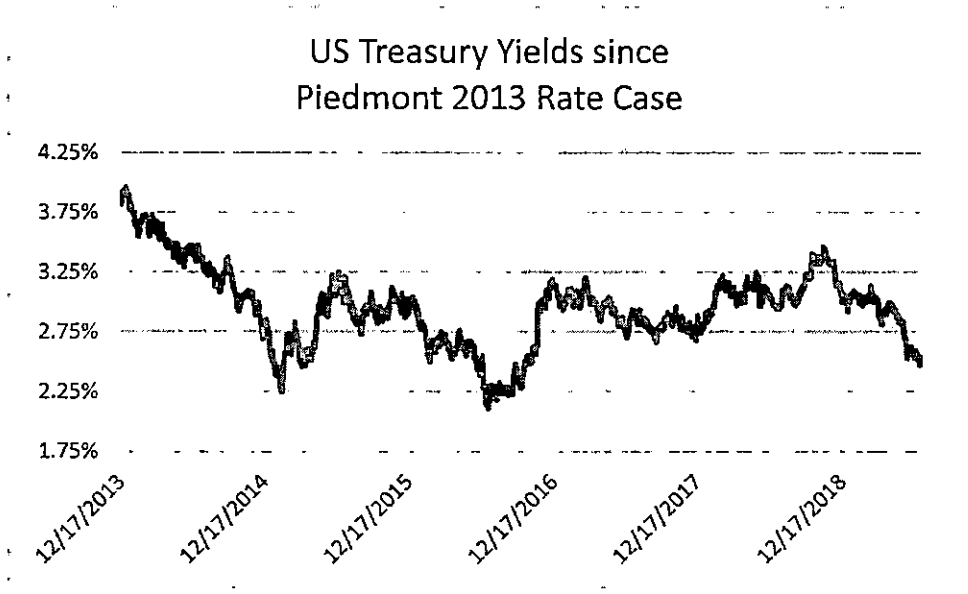
## II. Current State of Financial Markets

**Q. HOW HAS THE DEBT MARKET FOR PIEDMONT CHANGED SINCE THE COMPANY'S LAST RATE CASE?**

A. The Company's last rate case was in 2013 and a final order was issued on Dec. 17, 2013.[1] Long-term interest rates have fallen since the Company's last rate case. In Chart 1 below, I have provided the change in the 30-year US Treasury bonds since Dec. 20, 2013. On that date, the yield on 30-year US Treasury bonds was 3.88%. As of July 5, 2019, the yield on 30-year US Treasury bonds was 2.54%, which equates to a 134 basis point decrease in the yield on 30-year US Treasury bonds.

[1] Data taken from snl.com

Chart 1: Yield on 30-Year US Treasury Bonds




Source for raw data: https://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=yieldYear&year=2013-2019

**Q. DIDN'T THE FEDERAL RESERVE JUST RAISE INTEREST RATES?**

A. Yes, on December 19, 2018, the Federal Reserve increased the Federal Funds rates from 2.25% to 2.50%.[2]

**Q. DOES THIS MEAN THAT THE COST OF CAPITAL HAS INCREASED FOR COMPANIES LIKE PIEDMONT?**

A. No. The interest rate increase represents only the interest rate at which banks borrow short-term money. The interest rate hike from the Federal Reserve does not always result in an increase in long-term rates. As noted in Chart 1 above, the yield on 30-year US Treasury rates has been falling since the announcement of the Federal Reserve rate hike.

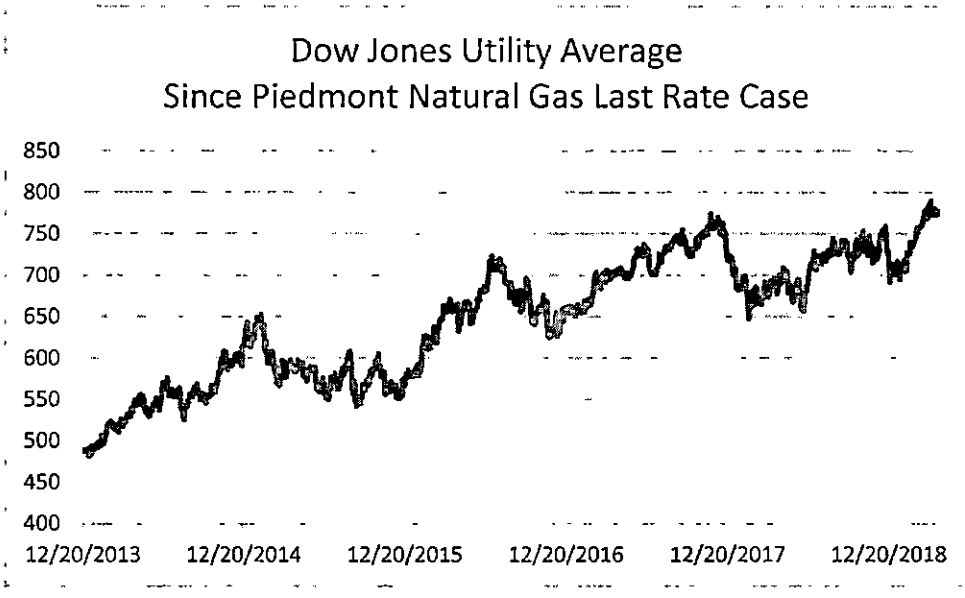
[2] https://www.cnbc.com/2018/12/19/fed-hikes-rates-by-a-quarter-point-.html.

Recently, the Federal Reserve has indicated that it does not intend to raise interest rates any further in 2019.[3]

**Q. HOW HAS THE STOCK MARKET FOR UTILITIES CHANGED SINCE THE COMPANY'S LAST RATE CASE?**

A. Since May 1, 2018, the Dow Jones Utility Average has risen from 703.59 to 774.06, which equates to a return of 10% in less than one-year.

Chart 2: Dow Jones Utility Average




Source: Yahoo Finance accessed on 7-7-19.

**Q. WHAT RETURN ON EQUITY (ROE) DID THE COMPANY SEEK IN ITS 2013 BASE RATE CASE AND WHAT WAS GRANTED BY THE COMMISSION?**

A. The Company sought an 11.35% ROE in the last rate case.[4] The case was settled and the Commission agreed to a 10.0% ROE.[5] No ROE was presented in the settlement.

[3] https://www.cnbc.com/2019/03/20/fed-leaves-rates-unchanged.html.
[4] Final order in Docket No. G-9, Sub 631, p. 19

**Q. WHAT ROE IS THE COMPANY SEEKING IN THIS RATE CASE?**

A. In the current filing, the Company is seeking a 10.6% ROE.

**Q. DO YOU BELIEVE THE COMPANY'S REQUEST IN THIS CASE IS APPROPRIATE GIVEN THE CHANGE IN THE COST OF CAPITAL SINCE ITS LAST RATE CASE?**

A. No. Even though the cost of debt financing has fallen over 130 basis points and the Dow Jones Utility Average has nearly doubled since the Company's last rate case, the Company has actually INCREASED its requested ROE from the "settlement" ROE of 10.0% in the last rate case up to a requested 10.6% in this case. Failing to recognize the lower expected return on utility investments, as espoused by Company Witness Hevert, cannot be supported and is simply illogical.

## III. Economic and Regulatory Policy Guidelines for a Fair Rate of Return

**Q. PLEASE BRIEFLY DESCRIBE THE ECONOMIC AND REGULATORY POLICY CONSIDERATIONS YOU HAVE TAKEN INTO ACCOUNT IN DEVELOPING YOUR RECOMMENDATION CONCERNING THE FAIR RATE OF RETURN THAT UTILITY COMPANIES SHOULD HAVE AN OPPORTUNITY TO EARN.**

A. The theory of utility regulation assumes that public utilities perform functions that are natural monopolies. Historically, it was believed or assumed that it was more efficient for a single firm to provide a particular utility service than multiple firms. Even though deregulation for the procurement of natural gas and generation of electric power and energy is spreading, delivery of these products to end-use customers is still a monopoly business and will, for the foreseeable future, be regulated. On this basis, state legislatures or

[5] Id, p. 18

Commissions establish exclusive franchised territories to public utilities or determine territorial boundaries where disputes arise, in order for these utilities to provide services more efficiently and at the lowest reasonable cost. In exchange for the protection within its monopoly service area, the utility is obligated to provide adequate service at fair, regulated rates.

This naturally raises the question - what constitutes a just and reasonable rate? The generally accepted answer is that a prudently managed gas utility should be allowed to charge prices that allow the utility the opportunity to recover the reasonable and prudent costs of providing utility service and the opportunity to earn a fair rate of return on invested capital. This just and reasonable rate of return on capital should allow the utility, under prudent management, to provide adequate service and attract capital to meet future expansion needs in its service area. Since public utilities are capital-intensive businesses, the cost of capital is a crucial issue for utility companies, their customers, and regulators. If the allowed rate of return is set too high, then consumers are burdened with excessive costs, current investors receive a windfall, and the utility has an incentive to overinvest. If the return is set too low, adequate service is jeopardized because the utility will not be able to raise new investment or working capital on reasonable terms.

Since every equity investor faces a risk-return tradeoff, the issue of risk is an important element in determining the fair rate of return for a utility.

Regulatory law and policy recognize that utilities compete with other firms in the market for investor capital. The United States Supreme Court set the guidelines for a fair rate of return in two often-cited cases: *Bluefield Water Works and Improvement Co. v. Public Service Comm'n.* 262 U.S. 679, 692; and the *Federal Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591, 603 (1944).

In the Bluefield case, the Supreme Court stated:

> A public utility is entitled to such rates as will permit it to earn a return upon the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties; but it has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures. The return should be reasonably sufficient to assure confidence in the financial soundness of the utility and should be adequate, under efficient and economical management, to maintain and support its credit, and enable it to raise the money necessary for the proper discharge of its public duties.[5]

In the above finding, the Court found that utilities are entitled to earn a return on investments of comparable risks and that corresponding return should be sufficient enough to support credit activities and to raise funds to carry out its mission.

In the often-cited case of *Federal Power Commission v. Hope Natural Gas Company*, 320 U.S. 591 (1944), the U.S. Supreme Court recognized that utilities compete with other firms in the market for investor capital. Historically, this case has provided legal and policy guidance concerning the return which public utilities should be allowed to earn.

In *Hope Natural Gas*, the U.S. Supreme Court stated that the return to equity owners (or shareholders) of a regulated public utility should be "commensurate" to returns on investments in *other* enterprises whose "*risks* correspond" to those of the utility being examined:

> [T]he return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure

confidence in the financial integrity of the enterprise so as to maintain credit and attract capital. (320 U.S. at 603).

## IV. Development of Proxy Group

**Q. PLEASE DESCRIBE HOW YOU SELECTED A PROXY GROUP FOR ESTIMATING PIEDMONT'S RETURN ON EQUITY.**

A. The number of available gas utilities needed to develop a reasonably reliable proxy group is dwindling. Over the past three years, several gas utilities, such as AGL Resources and Piedmont Natural Gas, have announced that they are being acquired by large electric utility holding companies. These acquisitions make sense for the electric utilities as they desire to grow their source of regulated earnings while, at the same time, control the pipelines over which they expect to receive future deliveries of natural gas, which is expected to be the predominant power generation fuel choice of electric utilities for many years to come.

In my experience, I have found the difference between my recommendations and that of utility ROE witnesses is never about the choice of the proxy group. Instead, the difference is the manner in which the ROE models are applied. For this reason, and to sharpen the focus between myself and Mr. Hevert, I have chosen to use the companies used by Mr. Hevert in his proxy group.

## V. Capital Structure

**Q. WHAT IS A CAPITAL STRUCTURE AND HOW WILL IT IMPACT THE REVENUES THAT PIEDMONT OR ANY OTHER UTILITY IS SEEKING IN A RATE CASE?**

A. The term "capital structure" refers to the relative percentage of debt, equity, and other financial components that are used to finance a company's investments. For simplicity, there are three financing methods. The first method is to finance an investment with common equity, which essentially represents ownership in a company and its investments. Returns on common

equity, which in part take the form of dividends to stockholders, are not tax deductible which, on a pre-tax basis alone, makes this form of financing about 28% more expensive than debt financing. The second form of corporate financing is preferred stock, which is normally used to a much smaller degree in capital structures. Dividend payments associated with preferred stock are not tax deductible. Corporate debt is the third major form of financing used in the corporate world. There are two basic types of corporate debt: long-term and short-term. Long-term debt is generally understood to be debt that matures in a period of more than one year. Short-term debt is debt that matures in a year or less. Both long-term debt and short-term debt represent liabilities on the company's books that must be repaid prior to any common stockholders or preferred stockholders receiving a return on their investment

**Q. HOW IS A UTILITY'S TOTAL RETURN CALCULATED?**

A. A utility's total return is developed by multiplying the component percentages of its capital structure represented by the percentage ratios of the various forms of capital financing relative to the total financing on the company's books by the cost rates associated with each form of capital and then totaling the results over all of the capital components. When these percentage ratios are applied to various cost rates, a total after-tax rate of return is developed. Because the utility must pay dividends associated with common equity and preferred stock with after-tax funds, the post-tax returns are then converted to pre-tax returns by grossing up the common equity and preferred stock dividends for taxes. The final pre-tax return is then multiplied by the Company's rate base in order to develop the amount of money that customers must pay to the utility for return on investment and tax payments associated with that investment. This return, or profit, is awarded in addition to the utility being allowed to recover its reasonable level of annual operating expenses.

**Q. HOW DOES CAPITAL STRUCTURE IMPACT THIS CALCULATION?**

A. Costs to consumers are greater when the utility finances a higher proportion of its rate base investment with common equity and preferred stock versus long-term debt. However, long-term debt, which is first in line for repayment, imposes a contractual obligation to make fixed payments on a pre-established schedule, as opposed to common equity where no similar obligations exist.

**Q. WHY SHOULD THIS COMMISSION BE CONCERNED ABOUT HOW PIEDMONT FINANCES ITS RATE BASE INVESTMENT?**

A. There are two reasons that the Commission should be concerned about how Piedmont finances its rate base investment. First, Piedmont's cost of common equity is higher than the cost of long-term debt, meaning that an equity percentage above an optimal level will translate into higher costs to Piedmont's customers without any corresponding improvement in quality of service. Long-term debt is a financial promise made by the company and is carried as a liability on the company's books. Common stock is ownership in the company. Due to the nature of this investment, common stockholders require higher rates of return to compensate them for the extra risk involved in owning part of the company versus having a more senior claim against the company's assets.

The second reason the Commission should be concerned about Piedmont's capital structure is due to the tax treatment of debt versus common equity. Public corporations, such as Piedmont, can deduct payments associated with debt financing. Corporations are not, however, allowed to deduct common stock dividend payments for tax purposes. All dividend payments must be made with after-tax funds, which are more expensive than pre-tax funds. Because the regulatory process allows utilities to recover reasonable and prudent expenses, including taxes, rates must be set so that the utility is able to pay all its taxes and has enough left over to pay its common stock dividend. If

a utility is allowed to use a capital structure for ratemaking purposes that is top-heavy in common stock, customers will be forced to pay the associated income tax burden, resulting in unjust, unreasonable, and unnecessarily high rates. Setting rates through the use of capital structure that is top-heavy in common equity violates the fundamental principles of utility regulation that rates must be just and reasonable and only high enough to support the utility's provision of safe, adequate, and reliable service at a fair price.

**Q. HOW IS SETTING A CAPITAL STRUCTURE FOR A RATE-REGULATED GAS UTILITY COMPANY DIFFERENT THAN SETTING A CAPITAL STRUCTURE FOR A NON-REGULATED COMPANY THAT OPERATES IN A COMPETITIVE ENVIRONMENT?**

A. Unregulated companies in competitive markets must carefully weigh the risk of using lower cost debt that can be used to leverage profits versus the use of the more expensive common equity that dilutes profits. Such a capital sourcing decision is based, in large part, on the competitive nature of the business in which the entity operates.

In the case of a rate-regulated gas utility with a licensed service territory that has little-to-no competition in its service territory, there is a strong incentive for the company to use common equity to build assets that can be placed in rate base. The utility is guaranteed the opportunity to earn its allowed rate of return on plant investment and, as such, can maximize profits by building plant and receiving favorable regulatory treatment from state regulators. In essence, normal competitive markets serve to lower capital costs through efficient capital cost decisions whereas gas utility rate regulation can act as an incentive for excessive or unnecessary plant investment.

**Q. PLEASE EXPLAIN HOW ONGOING CONSTRUCTION NEEDS ARE IMPACTING UTILITIES AND THEIR CUSTOMERS.**

A. Utilities finance construction with three primary sources of capital: retained earnings; common equity issuances; and long-term debt issuances. Financing construction with retained earnings is preferable to the utility because using funds from ongoing operations does not dilute common equity (as would an equity issuance) and does not add debt leverage to the utility's balance sheet. However, in most cases, financing a large asset with only retained earnings may not be possible due to sheer size of the plant investment. As a result, utilities undergoing large construction projects often issue common equity or long-term debt to finance these projects.

Selecting the ratio of equity to debt is important. Entities in more competitive markets have a profit motive that provides an incentive for such entities to select the most efficient capitalization ratio. However, gas utilities operating in exclusive, rate-regulated service territories have an incentive to maximize the amount of common equity in their capital structure so as to increase rates and, correspondingly, the utility profit. Rate-regulated gas utilities should only be allowed to recover in rates a revenue requirement derived from a capitalization ratio that allows the utility to provide reliable service at the least cost. Finding the right balance between debt and equity is critical.

**Q. PLEASE EXPLAIN THE RAMIFICATIONS OF RATES BEING SET AT AN UNBALANCED DEBT/EQUITY LEVEL.**

A. If a utility issues too much common equity and not enough debt for a certain project, the consuming public pays higher rates to support a capital structure that is neither prudent nor reasonable. It is also important to recognize how rate levels affect economic development. The reality in today's economy is that economic development occurs in places where costs are lower. A utility

with high rates will, all else being equal, cause its service territory to lose out on economic development opportunities.

If, on the other hand, the utility incurs too much debt, the utility's capitalization ratios presents excess financial risk to the capital markets, thereby driving up the costs required by the markets to compensate them for the added risk. In this case, the consumer would also lose because the cost it must pay the utility for accessing the capital markets is higher than it would pay using a less debt-leveraged capital structure.

One role of regulation is to balance the needs of the capital markets, including utility stockholders, with the needs of ratepayers. Too much equity or too much debt can harm both the stockholders of the corporation as well as the consuming public. Careful study of the risks and costs of various capitalization ratios is important.

**Q. HAVE YOU REVIEWED THE CAPITAL STRUCTURE REQUESTED BY THE COMPANY IN THIS PROCEEDING?**

A. Yes, I have.

**Q. WHAT CAPITAL STRUCTURE IS SEEKING IN THIS CASE?**

A. According to the pre-filed Direct testimony of Company Witness Powers, Piedmont is seeking the following capital structure:

Table 2: Piedmont Requested Capital Structure

| Component | Capital Structure Ratio (%) |
|---|---|
| Long-Term Debt | 47.18% |
| Short-Term Debt | 0.82% |
| Common Equity | 52.00% |
| Total Capitalization | 100.00% |

**Q. WHAT IS THE AVERAGE COMMON EQUITY RATIO OF THE COMPANIES IN YOUR PROXY GROUP?**

A. Table 3 below shows the average common equity ratio of each company in the proxy group.

Table 3: Proxy Group Equity Ratio[6]

| Company | 2018E Ratio |
|---|---|
| Atmos Energy Corp | 65.7% |
| Chesapeake UTIL | 68.0% |
| New Jersey Res. | 54.6% |
| N.W.Natural | 52.5% |
| One Gas, Inc | 61.5% |
| South Jersey INDS | 50.0% |
| Southwest Gas | 51.0% |
| Spire Inc | 54.3% |
| **Average** | **57.2%** |

As can be seen in the table above, the average common equity ratio in the proxy group is 57.2%, which is above the requested equity ratio in this case of 52.00%.

[6] *The Value Line Investment Survey*, Dec 14, 2018; Jan. 25, 2019; and Feb. 15, 2019.

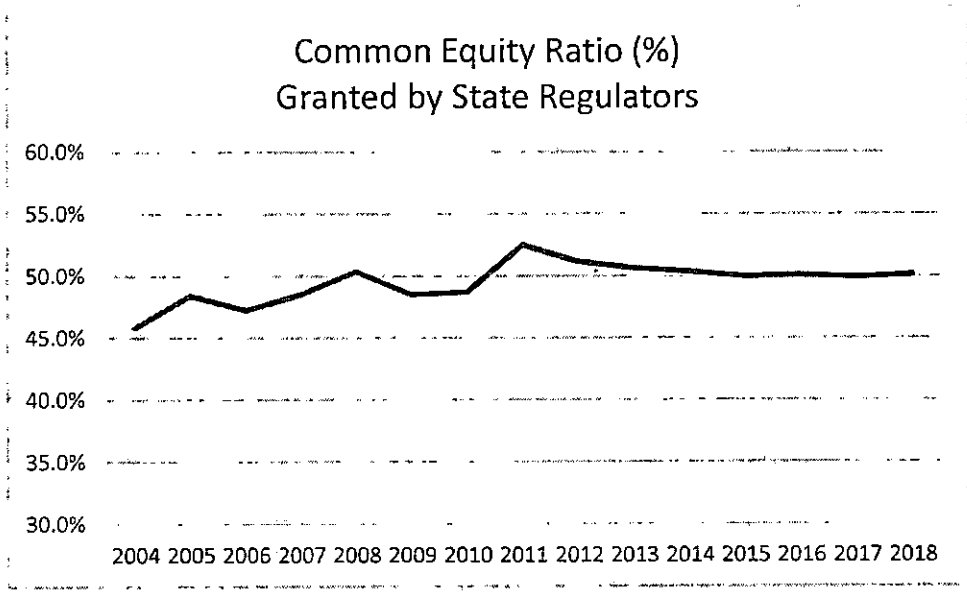
**Q. WHAT IS THE AVERAGE COMMON EQUITY RATIO GRANTED BY UTIILTY REGULATORS ACROSS THE UNITED STATES IN 2018?**

A. The average common equity ratio granted by regulators in 2018 to gas utilities was 50.09%.[7]

**Q. WHAT COMMON EQUITY RATIO HAVE STATE REGULATORS ACROSS THE UNITED STATES GRANTED TO NATURAL GAS UTILITIES OVER THE PAST 15 YEARS?**

A. State regulators have been quite consistent in their rulings in natural gas cases over the past 15 years. From 2004 through 2018, common equity ratios have ranged from roughly 45% to 52%. The average common equity ratio for each year over the past 15 years can be seen in Chart 3 below.

Chart 3: Common Equity Ratio Granted by State Regulators (2004-2018)




The data for Chart 3 is found in Table 4 below.

[7] S&P Global Market Intelligence, RRA Regulatory Focus Major Rate Case Decisions – January – December 2018, Jan. 31, 2019.

Table 4: Common Equity Ratios

| Year | Common Equity (%) [8] |
|---|---|
| 2004 | 45.81% |
| 2005 | 48.40% |
| 2006 | 47.24% |
| 2007 | 48.47% |
| 2008 | 50.35% |
| 2009 | 48.49% |
| 2010 | 48.70% |
| 2011 | 52.49% |
| 2012 | 51.13% |
| 2013 | 50.60% |
| 2014 | 50.35% |
| 2015 | 49.93% |
| 2016 | 50.06% |
| 2017 | 49.88% |
| 2018 | 50.09% |
| Average | **49.47%** |

The average common equity ratio from 2004 through 2018 was slightly below 50%, at 49.47%.

**Q. PLEASE SUMMARIZE YOUR FINDINGS IN REGARD TO THE REQUESTED EQUITY RATO IN THIS CASE RELATIVE TO THE EQUITY RATIO OF OTHER GAS UTILITIES.**

A. Table 5 below provides a summary of how Piedmont's request in this case compares to the following equity ratios: the equity ratio requested by the Company, the equity ratio of the proxy group, and the average allowed equity ratio by state regulators across the country in 2018.

[8] Raw data from snl.com

| Table 5: Common Equity Comparison | |
|---|---|
| Piedmont Request | 52.00% |
| Proxy Group Average | 57.20% |
| 2018 Average Reg Eq Ratio | 50.09% |

**Q. GIVEN THE ABOVE, DO YOU BELIEVE THAT THE CAPITAL STRUCTURE BEING PROPOSED BY PIEDMONT IN THIS CASE IS APPROPRIATE FOR RATEMAKING PURPOSES?**

A. Yes, for purposes of this case, I will accept the Company's proposed capital structure.

## VI. Cost of Common Equity

**Q. PLEASE EXPLAIN HOW THE ISSUE OF DETERMINING AN APPROPRIATE RETURN ON A UTILITY'S COMMON EQUITY INVESTMENT FITS INTO A REGULATORY AUTHORITY'S DETERMINATION OF JUST AND REASONABLE RATES FOR THE UTILITY.**

A. In North Carolina, as in virtually all regulatory jurisdictions, a utility's rates generally must be "just and reasonable." Thus, regulation recognizes that utilities are entitled to an opportunity to recover the reasonable and prudent costs of providing service, and the opportunity to earn a fair rate of return on the capital invested in the utility's facilities, such as gas distribution equipment, buildings, vehicles, and similar long-lived capital assets.

Q. **HOW DOES THE MANNER IN WHICH UTILITIES OBTAIN CAPITAL FUNDING RELATE TO THE COMMISSION'S DETERMINATION OF THE APPROPRIATE COST OF CAPITAL FOR A SPECIFIC UTILITY?**

A. Utilities obtain capital funding through a combination of borrowing (debt financing) and issuing stock (equity financing). Unless in the very rare event a company's borrowing is determined to be imprudent, the determination of ratepayer reimbursement for debt financing is generally uncontroversial, as the amount is simply the principal and interest repaid by the company to bondholders.

In contrast, the determination of the allowed ROE is where disputes most frequently arise. The allowed ROE is the amount that is determined to be appropriate for the utility's common stockholders to earn on the capital that they invest in the utility when they buy its stock. If the regulatory authority sets the ROE too low, the stockholders will not have the opportunity to earn a fair return and this may either cause existing shareholders to sell their shares or deter new investors from buying shares. If, on the other hand, the regulatory authority sets the ROE too high, the ratepayers will pay too much. Because ratepayers cannot choose a different utility due to the monopolistic service territory restrictions, countervailing competitive market forces are absent and the resulting rates will be unjust and unreasonable to the ratepayer.

**Q. HOW IS THE ESTIMATED SHARE PRICE USED IN DETERMINING THE LEVEL OF A UTILITY'S ALLOWED EARNINGS?**

A. The required equity return, which is based on the market value of a utility's stock, is combined with the cost of debt to produce the a company's "overall rate of return", which is then applied to the net book value of the utility's investment, otherwise known as the rate base. Under this procedure, the market price of a stock is used only to determine the return that investors expect from that stock. That expectation is then applied to the book value of the utility's investment to identify the level of earnings that regulation should allow the utility the opportunity to earn.

**Q. WHAT IS THE "COMPARABLE EARNINGS" TEST AND HOW DOES THAT FACTOR IN TO DETERMINING THE APPROPRIATE RETURN ON EQUITY?**

A. The "comparable earnings" standard, i.e., that the earnings must be "commensurate with the returns on investments in other enterprises having corresponding risks," is derived from the Supreme Court's ruling in the *Hope Natural Gas* case to which I earlier referred. In my opinion, enterprises of "corresponding" or comparable risk are companies that are engaged in the same activities as Piedmont and are also regulated like Piedmont.

**Q. HOW DO REGULATORY AUTHORITIES GO ABOUT DETERMINING A JUST AND REASONABLE RATE OF RETURN ON EQUITY FOR A UTILITY COMPANY?**

A. Regulatory commissions and boards, as well as financial industry analysts, institutional investors, and individual investors, use different analytical models and methodologies to estimate/calculate reasonable rates of return on equity. Among the measures used are Discounted Cash Flow analysis, the Capital Asset Pricing Model, and Comparable Earnings Analysis ("CEA"). I believe the most useful methodology is the DCF Analysis, but I am also presenting the CAPM and the Comparable Earnings Model as checks for my DCF results.

**Q. CAN YOU EXPLAIN WHY REGULATORY AUTHORITIES AND FINANCIAL ANALYSTS NEED TO USE THESE METHODOLOGIES TO DERIVE A COMPANY'S ESTIMATED RATE OF RETURN ON EQUITY?**

A. Yes. There is no direct, observable way to determine the rate of return required by equity investors in any company or group of companies. Investors must make do with indications from market data and analysts' predictions to estimate the appropriate price of a share. The principal and most reliable methodology for obtaining these indications is the Discounted Cash Flow

procedure. Other procedures, such as the CAPM and the comparable earnings method, are less reliable than the DCF procedure.

**Q. PLEASE EXPLAIN WHY YOU BELIEVE THE DCF MODEL IS SUPERIOR TO THE CAPM AND RISK PREMIUM APPROACHES.**

A. The DCF is a pure investor-driven model that incorporates current investor expectations based on daily and ongoing market prices. When a situation develops in a company that affects its earnings and/or perceived risk level, the price of the stock adjusts immediately. Since the stock price is a major component in the DCF model, the change in risk level and/or earnings expectations is captured in the investor return requirement with either an upward or downward movement to account for the change in the company.

The comparable earnings model is based on earned returns from book equity, not market equity. There is no direct and immediate stockholder input into the comparable earnings model and, as a fault, that model lacks a clear and unmistaken link to stockholder expectations.

The CAPM suffers, to a degree, from the same problem as the comparable earnings model in that there is not a direct and immediate link from stock market prices to the CAPM result. The beta in the CAPM can reflect changes in the ROE, but the delay can, sometimes, make the CAPM results meaningless.

**A. DCF Model**

**Q. PLEASE EXPLAIN THE DISCOUNTED CASH FLOW MODEL.**

A. The DCF method is a widely used method for estimating an investor's required return on a firm's common equity. In my thirty-one years of experience, first with the Public Staff of the North Carolina Utilities Commission and later as a consultant, I have seen the DCF method used much more often than any other

method for estimating the appropriate return on common equity. Consumer advocate witnesses, utility witnesses and other intervenor witnesses have used the DCF method, either by itself or in conjunction with other methods such as the Comparable Earnings Method or the CAPM, in their analyses.

The DCF method is based on the concept that the price which the investor is willing to pay for a stock is the discounted present value (i.e. its present worth) of what the investor *expects* to receive in the future as a result of purchasing that stock. This return to the investor is in the form of future dividends and price appreciation. However, price appreciation is only realized when the investor sells the stock, and a subsequent purchaser presumably is also focused on dividend growth following his or her purchase of the stock. Mathematically, the relationship is:

Let D = dividends per share in the initial future period
g = expected growth rate in dividends
k = cost of equity capital
P = price of asset (or present value of a future stream of dividends)

$$\text{then } P = \frac{D}{(1+k)} + \frac{D(1+g)}{(1+k)^2} + \frac{D(1+g)}{(1+k)^3} + \ldots\ldots + \frac{D(1+g)}{(1+k)^t}$$

This equation represents the amount (P) an investor will be willing to pay *today* for a share of common equity with a given dividend stream over (t) periods.

Reducing the formula to an infinite geometric series, we have:

$$P = \frac{D}{k-g}$$

Solving for k yields:

$$k = \frac{D}{P+G}$$

**Q. MR. O'DONNELL, DO INVESTORS IN UTILITY COMMON STOCKS REALLY USE THE CONSTANT GROWTH DCF MODEL IN MAKING INVESTMENT DECISIONS?**

A. Yes, I believe that to be so. There are three primary reasons for my conclusion. First, there is much literature that supports the fact that, while emotional or so-called "irrational" behavior in the short term may affect (and has affected) share prices, over the long term a company's financial fundamentals drives the market.[9] Second, analysts give great weight to earnings, dividend, and book value growth in formulating their recommendations to clients. Finally, even a casual search on the internet produces hundreds of pages discussing the definition of the DCF methodology and how to apply it for investment decisions, from which I infer that general investor interest in DCF analysis is significant and widespread.

Thus, in today's investment environment, a stock investor will likely calculate (or seek a calculation of) the amount of funds he/she will receive relative to the initial investment, which is defined as the current dividend yield, as well as the amount of funds that the investor can expect in the future from the growth in the dividend. The combination of the current dividend yield and the future growth in dividends is central to the basic tenet of the DCF model.

**Q. IS THE DCF FORMULA EASY TO UNDERSTAND?**

[9] See, for example, "Valuation: Measuring and Managing the Value of Companies," 4th Edition, McKinsey & Company Inc., Tim Koller, Marc Goedhart, David Wessels ("Provided that a company's share price eventually returns to its intrinsic value in the long run, managers would benefit from using a discounted-cash-flow approach for strategic decisions. What should matter is the long-term behavior of the share price of a company, not whether it is undervalued by 5 or 10 percent at any given time." http://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/do-fundamentalsor-emotionsdrive-the-stock-market (accessed March 2, 2016). See also, for example, http://www.businessinsider.com/what-drives-the-stock-market-2012-8 (Accessed March 2, 2016).

A. Yes. While the DCF formula stated above may appear complicated, it is intuitively a very simple model to understand. To determine the total rate of return one expects from investing in a particular equity security, the investor adds the dividend yield, which he or she expects to receive in the future, to the expected growth in dividends over time. If the regulatory authority sets the rate at a fair level, the utility will be able to attract capital at a reasonable cost, without forcing the utility's customers to pay more than necessary to attract needed capital.

**Q. CAN YOU GIVE AN EXAMPLE?**

A. Yes. If investors expect a current dividend yield of 5%, and also expect that dividends will grow at 4%, then the Constant Growth DCF model indicates that investors would buy the utility's common stock if it provided a return on equity of 9%.

**Q. WHAT DIVIDEND YIELD DO YOU THINK IS APPROPRIATE FOR USE IN THE DCF MODEL?**

A. I have calculated the appropriate dividend yield by averaging the dividend yield expected over the next 12 months for each proxy company, as reported by the Value Line Investment Survey. The period covered is from March 15, 2019 through June 7, 2019. To study the short-term as well as long-term movements in dividend yields, I examined the 13-week, 4-week, and 1-week dividend yields for the proxy group. My results appear in Exhibit KWO-1 and show a dividend yield range of 2.5% to 2.6% for the proxy group.

**Q PLEASE EXPLAIN HOW YOU DEVELOPED THE DIVIDEND YIELD RANGES DISCUSSED ABOVE.**

A. I developed the dividend yield range for the proxy group by averaging each Company's Value Line forecasted 12-month dividend yield over the above-stated 13-week, and 4-week periods as well as examining the most recent

forecasted 12-month dividend yield reported by Value Line for each company. I averaged the dividend yield over multiple time periods in order to minimize the possibility of an isolated event skewing the DCF results.

**Q. HOW DID YOU DERIVE THE EXPECTED GROWTH RATE?**

A. I used several methods in determining the growth in dividends that investors expect. The first method I used was an analysis commonly referred to as the "plowback ratio" method. If a company is earning a rate of return (r) on its common equity, and it retains a percentage of these earnings (b), then each year the earnings per share (EPS) are expected to increase by the product (br) of its earnings per share in the previous year. Therefore, br is a good measure of growth in dividends per share. For example, if a company earns 10% on its equity and retains 50% (the other 50% being paid out in dividends), then the expected growth rate in earnings and dividends is 5% (50% of 10%). To calculate a plowback for the proxy group, I used the following formula:

$$g = \frac{br(2017) + br(2018) + br(2019E) + br(2022E\text{-}2024E\ Avg)}{4}$$

The plowback estimates for all companies in the proxy group can be obtained from The Value Line Investment Survey under the title "percent retained to common equity." Exhibit KWO-2 lists the plowback ratios for each company in the proxy group.

A key component in the DCF Method is the expected growth in dividends. In analyzing the proper dividend growth rate to use in the DCF Method, the analyst must consider how dividends are created. Since over the long term dividends cannot be paid out without a corporation first earning the funds paid out, earnings growth is a key element in analyzing what if any growth can be expected in dividends. Similarly, what remains in a corporation after it pays its

dividend is reinvested, or "plowed back", into a corporation in order to generate future growth. As a result, book value growth is another element that, in my opinion, must be considered in analyzing a corporation's expected dividend growth. To analyze the expected growth in dividends, I believe the analyst should first examine the historical record of past earnings, dividends, and book value. Hence, the second method I used to estimate the expected growth rate was to analyze the historical 10-year and 5-year historical compound annual rates of change for earnings per share (EPS), dividends per share (DPS), and book value per share (BPS) as reported by Value Line for each of the relevant corporations.

Value Line is the most recognized investment publication in the industry and, as such, is used by professional money managers, financial analysts, and individual investors worldwide. A prudent investor tries to examine all aspects of an enterprise's performance when making a capital investment decision. As such, it is only practical to examine historical growth rates for the corporation for which the analysis is being performed. The historical growth rates for the proxy group can be seen in O'Donnell Exhibit KWO-1.

Some analysts do not present historical growth rates in their DCF analyses. I believe analysts that do not present such available data fail to completely inform the respective regulatory bodies of the full extent of information on which investors base their expectations. In his analysis, Mr. Hevert presents historical data, but he opines that forecasted earnings should be provided more weight in the DCF analysis.[10]

[10] Direct Testimony of Robert Hevert, p. 61

The third method I used was the Value Line forecasted compound annual rates of change for earnings per share, dividends per share, and book value per share.

The fourth method I used was the forecasted rate of change for earnings per share as recorded by CFRA, a publication of S&P Global Market Intelligence.

The last method was another forecasted earnings growth rate as supplied to Charles Schwab & Co. This forecasted rate of change is not a forecast supplied by Charles Schwab & Co. but is, instead, a compilation of forecasts by industry analysts.

The details of my constant growth DCF analysis can be seen in Exhibit KWO-1.

**Q. SHOULD THE RESULTS REFLECTED IN EXHIBIT KWO-1 BE VIEWED IN LIGHT OF FUNDAMENTAL DEVELOPMENTS IN THE NATURAL GAS UTILITY INDUSTRY THAT HAVE OCCURRED DURING THE PAST EIGHT YEARS?**

A. Yes. As the Commission is well aware, natural gas prices have plummeted since 2008. As a result of the drastically lower natural gas prices, many electric utilities across the country are planning to meet their future electric load requirements through the use of natural gas. Distribution utilities that derive profits from the delivery of natural gas are now in high demand. In 2016, Piedmont Natural Gas, itself, was sold to Duke Energy for a very large premium. Remaining gas utilities are achieving solid growth as natural gas is in high demand across the country.

**Q. WHAT IS THE INVESTOR RETURN REQUIREMENT FROM THE DCF ANALYSIS?**

A. As can be seen on Exhibit KWO-1, the dividend yield for each of the three timeframes studied ranges is equivalent to 2.6% for the proxy group.

In terms of the proper dividend growth rate to employ for the proxy group in the DCF analysis, it is appropriate to examine the recent history of earnings and dividend growth to assess and provide the best estimate of the dividend growth that investors expect in the future. An examination of the 10-year and 5-year historical growth rates for the proxy group show a change in the earnings and dividend growth rates. For the 10-year history, on first review, earnings per share grew faster than dividends per share. However, when the -10.5% growth rate for Northwest Natural Gas is omitted, the earnings per share (5.8%) over the past 10 years is close to the 10-year historical dividends per share (5.8%). The same situation is also evident in the 5-year historical growth rates. When the -18.0% for Northwest Natural Gas is omitted, the average for the proxy group changes from 2.1% to 5.5%, which is close to the 5-year average dividend growth rate of 5.9%. The forecast of the proxy group's various growth rates is consistent with the understanding that natural gas is growing in prominence in the energy industry around the country. The forecasted growth rates from Value Line range from 5.5% to 10.0%. However, the high end (10.0%) of the range is significantly influenced by the 27.0% forecasted earnings per share for Northwest Natural Gas from Value Line. Eliminating that one growth rate reduces the average Value Line forecasted earnings per share from 10.0% to 7.6%.

In addition to the above forecasted Value Line growth rates, the plowback growth rate for the proxy group is 4.3%, the CFRA forecasted EPS growth rate is 5.9%, and the Schwab forecasted earnings growth rate is 5.5%.

The fact that the proxy group forecasted growth rates are all between roughly 5% to 7% indicates that the natural gas utility industry is expecting solid and steady growth in earnings, dividends, and book value in the future.

**Q. IN ESTIMATING THE COST OF EQUITY AT THE PRESENT MOMENT, SHOULD MORE WEIGHT BE PLACED ON FORECASTED GROWTH RATES OR HISTORICAL GROWTH RATES AND HOW DOES YOUR ANSWER AFFECT YOUR CONCLUSIONS AS TO THE PROPER GROWTH RATE RANGE FOR PROXY GROUP OF COMPANIES IN THE DCF ANALYSIS?**

A. Due to the effects of the fundamental changes that have occurred in the natural gas utility industry over the past eight years that I mentioned previously, I believe that it is proper to place more weight on forecasted figures than historical figures in estimating the cost of equity for the proxy group. As a result, I believe that the proper growth rate range for the proxy group of companies to use in the DCF analysis is 5.0% to 7.0%. The lower end (5.0%) of the range is above the above the plowback growth rates and is slightly below the forecasted Value Line earnings growth rate whereas the upper end of the range (7.0%) is in the center of the Value Line forecasted growth rate range.

**Q. SHOULD ONLY EARNINGS GROWTH RATES IN THE DCF METHODOLOGY BE USED? IF NOT, WHAT DID YOU DO TO MITIGATE THIS PROBLEM?**

A. No. Since the DCF formula is dependent on future dividend growth, it would be inaccurate to use only earnings growth rates in the DCF. Doing so produces unrealistically high return on equity numbers that cannot be sustained in real life.

**Q. PLEASE PROVIDE EXAMPLES OF ACADEMIC LITERATURE THAT CALLS INTO QUESTION THE ACCURACY OF ANALYST FORECASTS.**

A. In the June/July, 1999 edition of the Journal of Business Finance and Accounting, Richard D.F. Harris authored a study entitled "The Accuracy, Bias and Efficiency of Analysts' Long Run Earnings Growth Forecasts." His conclusions regarding analyst forecasts were, in part, as follows:

1. the accuracy of forecasts was extremely low; [11]
2. analyst forecasts are overly optimistic[12]; and
3. forecasts by analysts are inefficient.[13]

In November, 2003, Louis K. C. Chan, Jason Karceski and Josef Lakonishok published an article entitled "Analysts' Conflict of Interest and Biases in Earnings Forecasts" in the Journal of Finance. The conclusion of the paper stated:

> ...it is commonly suggested that one group of informed participants, security analysts, may have some ability to predict growth. The dispersion in analysts' forecasts indicates their willingness to distinguish boldly between high- and low-growth prospects. IBES long-term growth estimates are associated with realized growth in the immediate short-term future. Over long horizons, however, there is little forecastability in earnings, and analysts' estimates tend to be overly optimistic.[14]

[11] "The Accuracy, Bias, and Efficiency of Analysts' Long Run Earnings Growth Forecasts," Journal of Business Finance & Accounting, (June/July 1999), p. 751;
[12] id
[13] id
[14] K. Chan, L., Karceski, J., & Lakonishok, J., "The Level and Persistence of Growth Rates," Journal of Finance (2003), p. 683

In 2010, Marc H. Goedhart, Rishi Raj, and Abhishek Saxena wrote "Equity analysts: Still too bullish" that was published in McKinsey on Finance. The article stated:

> No executive would dispute that analysts' forecasts serve as an important benchmark of the current and future health of companies. To better understand their accuracy, we undertook research nearly a decade ago that produced sobering results. Analysts, we found, were typically overoptimistic, slow to revise their forecasts to reflect new economic conditions, and prone to making increasingly inaccurate forecasts when economic growth declined. [15]

In June, 2007, in the Journal of Accounting Research, Peter D. Easton and Gregory A. Sommers wrote a paper entitled "Effect of Analysts' Optimism on Estimates of the Expected Rate of Return Implied by Earnings Forecasts".

> We show that, on average, the difference between the estimate of the expected rate of return based on analysts' earnings forecasts and the estimate based on current earnings realizations is 2.84%. When estimates of the expected rate of return in the extant literature are adjusted to remove the effect of optimistic bias in analysts' forecasts, the equally weighted estimate of the equity risk premium appears to be close to zero. [16]

As can be seen in these academical articles and contrary to the statement as provided by Mr. Hevert, the concept that analysts provide accurate investors expectations is still a highly debated topic.

To mitigate the problems as cited above, I have presented EPS, DPS, and BPS figures to the Commission and systematically explained my rationale for

[15] "Equity Analysts, Still Too Bullish," McKinsey on Finance, (Spring, 2010), p. 14

[16] "Effect of Analysts' Optimism on Estimates of the Expected Rate of Return Implied by Earnings Forecasts", Journal of Accounting Research, December, 2007, p. 1012

arriving at the above stated growth rates. I believe it is incumbent upon every analyst presenting testimony in this case to present such a robust analysis to the Commission.

**Q. WHAT IS THE DCF RANGE THAT YOUR ANALYSES PRODUCED?**

A. Combining the proxy group's dividend yield of 2.6% with the growth rate range of 5.0% to 7.0% produces a DCF range of 7.6% to 9.6%. Based on this analysis, the DCF results are in the range of 7.6% to 9.6%.

**B. Comparable Earnings Analysis**

**Q. PLEASE EXPLAIN THE COMPARABLE EARNINGS (CE) ANALYSIS AND HOW YOU PERFORMED THIS ANALYSIS.**

A. The Comparable Earnings analysis is a process whereby companies that are deemed similar in risk are compared to assess a relative valuation. In this process, the analyst simply examines details of companies within its comparable group and within its industry to assess a relative rate of return for the examined company.

In the CE analysis I performed in this case, I examined actual earned returns on book value, not market value, for the comparable group. As a result, the earned returns I examined were higher than what investors are actually requiring in todays marketplace.

**Q. PLEASE EXPLAIN THE DIFFERENCE BETWEEN MARKET VALUE AND BOOK VALUE.**

A. Market values reflect the actual price that investors are willing to pay for a share of a company's stock. Book value, on the other hand, is the actual net assets of a company divided by the number of shares outstanding.

**Q. HOW DOES THE MARKET VALUE OF COMPANIES IN THE COMPARABLE GROUP COMPARE TO THE BOOK VALUE OF THESE SAME COMPANIES?**

A. The market value of the companies in the comparable group far exceeds the book value. Table 6 below provides the results.

Table 6: Comparable Group Market-to-Book Ratios

| Utility | Mkt Value | Book Value | MV/BV Ratio |
|---|---|---|---|
| Atmos | $97.30 | $42.87 | 2.27 |
| Chesapeake | $91.13 | $31.80 | 2.87 |
| New Jersey NG | $46.99 | $16.18 | 2.90 |
| Northwest NG | $64.18 | $26.30 | 2.44 |
| OneGas | $84.14 | $38.85 | 2.17 |
| South Jersey Ind. | $31.29 | $15.15 | 2.07 |
| Southwest Gas | $82.16 | $42.40 | 1.94 |
| Spire | $76.86 | $44.51 | 1.73 |
| | | Average | 2.30 |

As can be seen in the table above, market values are well in excess of book value. As a result, it is a mathematical fact that a return on book value will be far greater than a return on market value as the denominator in a return on market value will be greater than the denominator in a return on book value calculation.

**Q. CAN YOU USE PROVIDE AN EXAMPLE OF A RETURN ON BOOK VALUE BEING IN EXCESS OF A RETURN ON MARKET VALUE?**

A. Yes. Suppose a company had a net income in a particular year of $10 million and its book value was $100 million, but investors were willing to pay a total of $200 million in the current market valuation for the stock. The return on book equity would be 10% ($10 million/$100 million) whereas the return on market value would be 5% ($10 million/$200 million). Hence, when the market value of a stock is well in excess of its book value, the return on book value will be greater than the return on market value.

The above illustration provides an example of why I believe the stated returns on common equity should be used only as a guide to the DCF market-required estimates. Simply put, analysts can mistakenly equate the two returns and cause confusion for regulators.

**Q. PLEASE EXPLAIN HOW YOU PERFORMED THE COMPARABLE EARNINGS ANALYSIS.**

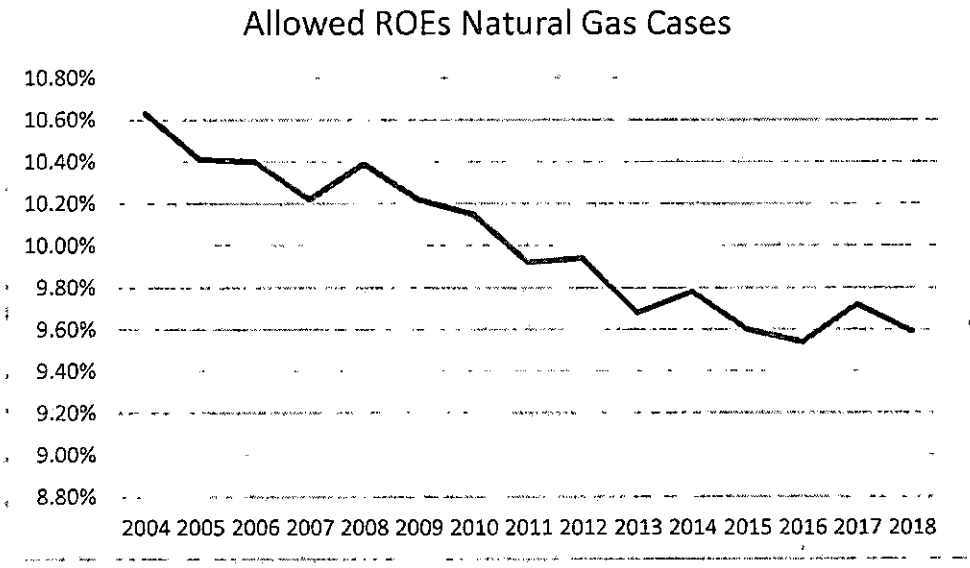
A. Exhibit KWO-3 presents a list of the earned returns on equity of the comparable group over the period of 2017 through 2024. I picked this range to provide the Commission with two years of historical returns and five years of forecasted returns. As can be seen in this exhibit, the average earned returns on equity for the proxy group are range from 9.3% to 10.6%.

**Q. DO YOU HAVE ANOTHER COMPARABLE EARNINGS METHODOLOGY TO PRESENT IN THIS CASE?**

A. Yes. It is important to understand what state regulatory commissions across the country are allowing for earned ROEs. Allowed ROEs are widely known and discussed in the financial community and investors take these regulatory decisions into account when they set prices in the open market for which they are willing to purchase the stock of a regulated utility.

As this Commission is likely aware, regulated ROEs have trended down over the past 15 years. In Chart 4 below, I have provided a chart that shows the allowed ROEs allowed for natural gas utilities by state regulators across the United States from 2004 through 2018.

Chart 4: Allowed ROEs 2004 – 2018




Source for raw data: S&P Global Market Intelligence, RRA Regulatory Focus Major Rate Case Decisions – January – December 2018, Jan. 31, 2019

As for the most recent year, 2018, the overall allowed ROE for gas utilities was 9.59%, which was down from the 9.72% allowed by state regulators for gas utilities in 2017.

**Q. ARE YOU AWARE OF ANY STATE REGULATORY BODY IN THE SOUTHEAST THAT HAS RECENTLY ENTERED AN ORDER IN WHICH MR. HEVERT HAS BEEN THE WITNESS FOR THE PETITIONING UTILITY? IF SO, WHAT WAS THE ALLOWED ROE SET BY THAT REGUALTORY BODY?**

A. Yes. Mr. Hevert testified in the Duke Energy subsidiary rate cases heard in South Carolina. Mr. Hevert recommended a 10.75% ROE in both cases. However, on May 1, 2019, the South Carolina Public Service Commission (SCPSC) authorized Duke Energy Progress to earn a 9.50% ROE. On May 21, 2019, the SCPSC authorized Duke Energy Carolinas to earn a 9.50% ROE.

**Q. ARE YOU AWARE OF ANY REGULATORY BODY THAT HAS RECENTLY AUTHORIZED A ROE OF LESS THAN 9.50%?**

A. Yes. On May 28, 2019, the Public Utility Commission of South Dakota authorized a 8.75% ROE for Otter Tail Power in Docket No. EL 18-021.

**Q. WHO WAS THE RATE OF RETURN WITNESS FOR OTTER TAIL POWER IN THAT RATE CASE AND WHAT WAS HIS/HER RECOMMENDATION?**

A. Mr. Robert Hevert, who is also the witness for Piedmont in the current proceeding, was the witness for Otter Tail Power in the South Dakota proceeding. Mr. Hevert's recommendation in the South Dakota case was 10.3%.

**Q. WHAT CONCLUSIONS DO YOU DRAW FROM THE COMPARABLE EARNINGS ANALYSIS?**

A. As noted previously, gas utilities are expected to have strong growth in the future due to the abundance of natural gas now produced in the United States and the increasing demand for natural gas services. Electric utilities, for example, are turning almost entirely now to constructing natural gas generation plants as opposed to nuclear and coal units. Hence, the strength in the natural gas industry should continue unabated for several years to come.

Regulators across the United States have continued to recognize the decrease in capital cost and, as found in Chart 4 above, steadily reduced the allowed returns of utilities over the past 15 years.

Based on the above-stated findings, I believe the proper rate of return using a comparable earnings analysis is in the range of 9.0% to 10.0%. This lower end of this range represents the fact that regulators across the country are recognizing the lower cost of capital and setting ROEs at lower points. The

high end of the range is at the midpoint between the Value Line forecasted earned return on common equity for the proxy group in 2019 and 2022/2024. This average allowed ROE for gas utilities, as reported by snl.com, is also in the midpoint of this range of 9.0% to 10.0%.

### C. Capital Asset Pricing Model (CAPM)

**Q. HAVE YOU PREVIOUSLY PRESENTED THE CAPM IN COST OF EQUITY TESTIMONIES?**

A. Yes, but I have not given it much weight. I have long maintained the application of the CAPM can lead one to erroneous results when it is applied in an inaccurate manner, such as when "forecasted" risk premiums or "forecasted" interest rates are employed. For this reason, I have historically not used the CAPM in cost of equity analyses. However, I am aware that this Commission relies primarily on the DCF model, with consideration of other methods as a check. As a result, I am adding the CAPM in my analysis to supplement my DCF analysis as well as my Comparable Earnings analysis.

**Q. PLEASE EXPLAIN THE CAPITAL ASSET PRICING MODEL.**

A. The CAPM is a risk premium model that determines a firm's ROE relative to the overall market return on equity. The formula for the CAPM is as follows:

$$ROE = Rf + Beta\ [E(RM) - Rf]$$

where ROE is the return on equity;
Rf is the risk-free rate;
Beta is the risk of the studied company relative to the overall market; and
E(RM) is the expected return on the market.

To be specific, the CAPM is a measure of firm-specific risk, known as unsystematic risk and measured by beta, as well as overall market risk,

otherwise known as systematic risk and measured by the expected return on the market.

The CAPM calculates ROE based on a company's risk and can be restated as follows:

ROE = Rf + (Beta * Risk Premium)

where Risk Premium represents the adjusted company-specific risk of the company.

**Q. HOW IS THE RISK-FREE RATE MEASURED?**

A. The risk-free rate is designated as the yield on United States government bonds as the risk of default is seen as highly unlikely. Utility witnesses and consumer witnesses all use United States government bond yields as the risk-free rate in the CAPM. However, what is often debated in the risk-free portion of the CAPM is the term of those bonds. In my analysis for this case, I have developed risk premiums relative to the 30-year US Treasury bonds as this time period is the longest available in the marketplace, thereby affording consumers the longest protection at the risk-free rate. Chart 1, which I provided earlier in this testimony, provides the yield on 30-year US Treasury bonds over the past year.

**Q. IS THE CURRENT LEVEL OF INTEREST RATES EXPECTED TO CHANGE MATERIALLY IN THE FORESEEABLE FUTURE?**

A. No. Economic forecasters as well as the Federal Reserve all believe that the current interest rate environment is expected to remain relatively stable for many years to come. In fact, in June 16, 2016, Bloomberg published an article entitled "Yellen Says Forces Holding Down Rates May Be Long Lasting." The key takeaway from the article is the following statement:

> In a press conference after the Fed held policy steady, Yellen spoke of a sense that rates may be depressed by "factors that are not going to be rapidly disappearing, but will be part of the new normal."[17]

The statement above is confirmed by the fact that the Federal Reserve recently stated that it would not be increasing interest rates any further in 2019.[18]

**Q. HOW IS BETA MEASURED IN THE CAPM?**

A. Beta is a statistical calculation of a company's stock price movement relative to the overall stock movement. A company whose stock price is less volatile than the overall market will have a beta less than 1.0. A company whose stock price is more volatile than the overall market will have a beta more than 1.0. Since utilities are generally conservative equity investments, utility betas are almost always less than 1.0.

**Q. WHAT IS THE CURRENT MARKET RISK PREMIUM APPROPRIATE FOR USE IN THE CAPM?**

A. The development of the current market risk premium is, undoubtedly, the most controversial aspect of the CAPM calculations. To gauge the historical risk premium, I turned to the Ibbotson database published by Morningstar. The long-term geometric and arithmetic returns for both equities and fixed income securities and the resulting risk premiums are as follows:

[17] https://www.bloomberg.com/news/articles/2016-06-15/yellen-seems-to-sign-on-to-summers-view-of-lingering-low-rates

[18] https://www.cnbc.com/2019/03/20/fed-leaves-rates-unchanged.html

Table 7: Equity Risk Premium Calculations

| Asset Class | Geometric Mean | Arithmetic Mean |
|---|---|---|
| Large Company Stocks | 10.0% | 12.0% |
| Long-Term Govt. Bonds | 6.0% | 6.3% |
| Resulting Risk Premium | 4.0% | 5.7% |

Source: Exhibit 2.3, Ibbotson® SBBI®, 2017 Classic Yearbook: Stocks, Bonds, Bills, and Inflation, 1926-2016

**Q. WHAT MARKET RETURNS ARE WELL-KNOWN PROFESSIONAL INVESTORS EXPECTING FOR THE FORESEEABLE FUTURE?**

A. On January 10, 2019, Morningstar.com published an article entitled "Experts Forecast Long-Term Stock and Bond Returns: 2019 Edition."[19] By future returns, these market experts are discussing total market returns, and not just the equity risk premium. Below are some of the market return forecasts from this article:

BlackRock Investment Institute
7% nominal (not inflation adjusted) return for US large caps over the next decade and 9% for non-US large caps.

John Bogle, Founder of Vanguard Group
4% - 5% nominal equity returns during the next decade

Grantham, Mayo, & van Otterloo ("GMO")
-4.1% real (inflation adjusted) returns for US large caps over the next 7 years

JP Morgan Asset Management
5.25% nominal return for US equities over a 10-15 year horizon

[19] https://www.morningstar.com/articles/907378/experts-forecast-longterm-stock-and-bond-returns-2.html

Morningstar Investment Management
1.8% 10-year nominal returns for US stocks

Research Affiliates
0.7% real (inflation adjusted) returns for US large caps furring the next 10 years

Vanguard
Nominal equity market returns of 3% to 5% during the next decade

The above-stated equity returns display a very large range. On the low side is GMO, which forecasts that US large caps will, after inflation, lose 4.1% of asset value annually over the next seven years. On the more positive side is BlackRock Investment that expects a nominal (before inflation adjustment) of 7% per year. Of the above-stated returns, Vanguard, John Bogle, JP Morgan, and BlackRock all forecast nominal (not inflation adjusted) returns in the range of 3% to 7%. A mid-range estimate is 4% to 6% for the group.

In 2018, Duke University finance professors published their annual equity risk premium estimates that stated the expected average risk premium exhibited by a survey of U.S. Chief Financial Officers around the country is 4.42%. [20] The article states as follows:

> During the past 18 years, we have collected almost 25,000 responses to the survey. Panel A of Table 1 presents the date that the survey window opened, the number of responses for each survey, the 10-year Treasury bond rate, as well as the average and median expected excess returns. There is relatively little time variation in the risk premium. This is confirmed in Fig. 1a, which displays the historical risk premiums contained in Table 1. **The current premium, 4.42%, is above the historical average of 3.64%**. The December 2017 survey shows that the expected annual S&P 500 return is 6.79%

[20] "The Equity Risk Premium in 2018", John R. Graham and, Campbell R Harvey, Duke University, March 28, 2018, p. 3-4.

(=4.42%+2.37%) which is slightly below the overall average of 7.11%. The total return forecasts are presented in Fig. 1b.2 [21] (underline and bold added)

**Q. WHAT IS YOUR CONCLUSION AS TO THE ESTIMATED EQUITY RISK PREMIUM FOR USE IN THE CAPM?**

A. Using historical data as well as ex ante (forecasts) data, the evidence suggests the equity risk premium is clearly within the range of 4% to 6%.

**Q. HOW DID YOU DETERMINE THE BETA YOU USED IN THE CAPM?**

A. I used the Value Line derived beta that I found in the most recent Value Line editions for each company in the proxy group.

**Q. WHAT WERE YOUR CAPM RESULTS?**

A. The actual calculations for the CAPM can be seen in Schedule KWO-4. The yield on 30-year US Treasury yields (Rf) has ranged from 2.47% to 3.46% in the past year. The average beta for the proxy group is 0.69 which, when multiplied by the risk premium range of 4.0% to 6.0%, produces a beta-adjusted risk premium of 2.76% to 4.14%. The 30-year US Treasury yield (Rf) range of 2.53% to 3.46% is next added to the beta-adjusted risk premium range of 2.76% to 4.14% to arrive at the proxy group CAPM result range of 5.22% to 7.59%.

Based on this range of results for the CAPM, I find the proper ROE derived from the CAPM is in the range of 5.5% to 7.5%. The low-end (5.5%) of this range is at the low-end of the proxy group CAPM results using the 4.0% of the equity risk premium. The high end (7.5%) of the range is slightly lower than the high end of the proxy group CAPM results.

[21] Id, p. 3-4.

**D. Return on Equity Summary**

**Q. MR. O'DONNELL, PLEASE SUMMARIZE THE RESULTS OF YOUR ROE ANALYSIS IN THIS CASE.**

A. Table 8 below lists the results of my DCF analysis, the comparable earnings analysis, and CAPM analysis.

Table 8: ROE Method Results

| | ROE Results | |
|---|---|---|
| Method | Low | High |
| DCF | 7.60% | 9.60% |
| Comparable Earnings | 9.00% | 10.00% |
| CAPM | 5.50% | 7.50% |

**Q. WHAT IS YOUR RETURN ON EQUITY RECOMMENDATION IN THIS PROCEEDING?**

A. My recommendation in this case is for the Commission to grant Piedmont Natural Gas a return on equity of 9.0% This 9.0% ROE is slightly above the midpoint of the DCF results for the proxy group, well above the CAPM results, and is at the low end of the Comparable Earnings results.

**Q. WOULD YOU PLEASE PROVIDE THE REASONS FOR YOUR RECOMMENDATION?**

**A.** As the Commission is aware, interest rates remain quite low relative to historic levels. Individuals seeking an income stream see utility dividends as good alternatives at the present time with the lack of adequate fixed income (bond)

opportunities. This "chase for yield" is part of the reason that the Dow Jones Utility Average has nearly doubled since 2013.

In making this recommendation, I am herein recognizing the strength of the stock market since Piedmont's last rate case in 2013, as evidenced in Chart 2 above, and I am actually recommending a ROE slightly higher than midpoint of the DCF results which, in my opinion, is the most indicative result of investor expectations for gas utilities.

When stock prices increase, dividend *yields* decrease even though the dollar amount of the dividend remains the same or even increases. Hence, over the past years, the increase in utility stock prices has driven dividend yields of utility stocks downward. Thus, we cannot ignore the current low cost of capital environment. If a utility's rates are set too high, the economy in its service territory will suffer and stockholders will receive a windfall at the expense of captive ratepayers.

**Q. WHAT IS YOUR OVERALL RECOMMENDED RATE OF RETURN IN THIS PROCEEDING?**

A. The overall rate of return I am recommending is 6.85% and can be seen in the table below.

Table 9: Recommended Overall Rate of Return

| Component | Capital Structure Ratio (%) | Cost Rate (%) | Wgtd. Cost Rate (%) |
|---|---|---|---|
| Long-Term Debt | 47.18% | 4.55% | 2.15% |
| Short-Term Debt | 0.82% | 2.82% | 0.02% |
| Common Equity | 52.00% | 9.00% | 4.68% |
| Total Capitalization | 100.00% | | 6.85% |

## VII. Consistency Matters – A review of Company Witness Hevert's History of Changing Cost of Equity Models

**Q. WHAT RETURN ON EQUITY DID PIEDMONT ASK THE COMMISSION TO GRANT IT IN THIS PROCEEDING?**

A. According to Company Witness Hevert, the return on equity that should be afforded the Company in this proceeding is 10.60%.

**Q. DO YOU AGREE WITH PIEDMONT'S REQUESTED ROE?**

A. No. I disagree with Piedmont's requested ROE. The requested ROE is excessive and unwarranted given the current financial market conditions, and simply does not comport with the current economic reality facing investor-owned utilities.

Moreover, the models and inputs used by Company Witness Hevert to determine Piedmont's cost of equity are biased, in nearly every sense, to artificially inflate his ROE results. If the Commission were to accept Mr. Hevert's proposed ROE, Piedmont's customers would be forced to take on the

burden of natural gas rates that encompass the highest allowed ROE for an investor-owned natural gas utility in recent years.

Taken together, these factors make it clear that Company Witness Hevert is recommending a ROE significantly exceeding the standards constituting a just and reasonable rate for an investor owned utility (IOU) in the state of North Carolina—and in virtually every other state in the country.

Q. **MR. O'DONNELL, SHOULD WITNESSES IN REGULATORY CASES BE CONSISTENT IN THEIR APPLICATIONS BEFORE COMMISSIONS?**

A. I certainly think so. A witness builds trust and respect amongst state regulators by being consistent in his or her appearances before regulatory bodies.

One of my favorite quotes is from Lincoln Chafee, who stated that "Trust is built with consistency."[22]

This Commission relies on expert witnesses to give it unbiased advice so it can make a determination in the best interests of consumers and the regulated utilities.

**Q. MR. O'DONNELL, HAS MR. HEVERT BEEN CONSISTENT IN HIS APPLICATION OF THE VARIOUS COST OF CAPITAL METHODS OVER THE YEARS THAT HE HAS BEEN PRESENTING TESTIMONY ON BEHALF OF HIS UTILITY CLIENTS?**

A. No. Mr. Hevert has changed the application of his cost of capital models over the years so that the results produce higher cost of capital results for his utility clients.

[22] https://www.brainyquote.com/quotes/lincoln_chafee_446309.

**A. Hevert CAPM Changes**

**Q. PLEASE EXPLAIN HOW MR. HEVERT APPLIES THE CAPITAL ASSET PRICING MODEL ("CAPM") IN THE CURRENT CASE.**

A. In the current case, Mr. Hevert uses a forward-looking discount cash flow ("DCF") model to determine an expected market return. He then subtracts out the yield on 30-year Treasury bonds to determine a market risk premium for use in the CAPM. [23]

**Q. IS MR. HEVERT'S APPLICATION OF THE CAPM IN THIS CASE CONSISTENT WITH THE WAY HE HAS APPLIED THE CAPM IN PAST CASES?**

A. No, it is not.

**Q. HOW IS MR. HEVERT'S CURRENT APPLICATION OF THE CAPM DIFFERENT FROM HIS PAST APPLICATIONS?**

A. Mr. Hevert has changed his application of the CAPM in two very distinct ways:

1. he has changed the actual market risk premiums used in the CAPM; and
2. he has changed his reliance on historical data versus forecasted data as employed in the CAPM.

The result of these two changes is that Mr. Hevert's calculations lead to higher return on equity numbers for his clients.

**Q. PLEASE EXPLAIN MR. HEVERT'S CHANGES IN THE MARKET**

[23] Prefiled direct testimony of Robert Hevert, p. 70

**RISK PREMIUMS USED IN THE CAPM.**

A. Mr. Hevert has been presenting testimony on behalf of utilities for a number of years and has built up a history of cases in which he has used the CAPM. A review of prior cases shows Mr. Hevert has changed his risk premiums frequently throughout his tenure as an expert witness before various state regulatory bodies. As an example, Table 10 below shows Mr. Hevert's calculated risk premiums in eight cases since 2008.

Table 10: Historical Hevert Market Risk Premiums

| Year | Implied Mkt. Premium |
|---|---|
| 2008 | 7.10% [24] |
| 2009 | 7.19% - 8.10% [25] |
| 2014 | 8.71% - 10.31% [26] |
| 2015 | 10.07% - 10.82% [27] |
| 2016 | 9.99% - 11.81% [28] |
| 2017 | 9.37% - 11.27% [29] |
| 2018 | 11.21% - 11.38% [30] |
| 2019 | 11.47% - 13.41% [31] |

[24] Otter Tail Power Company, South Dakota Public Utilities Commission, Docket No. EL08-030, Schedule 4, 1.
[25] South Carolina Electric & Gas, South Carolina Public Service Commission, Docket No. 2009-489-E, Exhibit RBH-2, 1.
[26] Public Service of Colorado, Public Utilities Commission of Colorado, Docket No. 14AL-0660E, Attachment RBH-6, 1.
[27] Virginia Electric & Power, Virginia State Corporation Commission, Docket No. 2015-00027, Schedule 4, 1.
[28] Potomac Electric Power, District of Columbia Public Service Commission, Exhibit PEPCO (D)-5, 1.
[29] Duke Energy Progress, North Carolina Utilities Commission, Docket No. E-2, Sub 1142, Exhibit RBH-5, p. 1.
[30] South Carolina Electric and Gas, South Carolina Public Service Commission, Docket No. 2017-305-E, Exhibit RBH-5.
[31] Potomac Electric Power Company, Maryland Public Service Commission, Case No. 9602, Exhibit RBH-4, p. 1.

As shown in this table, in 2008, Mr. Hevert used a market risk premium of 7.10% in his CAPM calculations. In 2019, Mr. Hevert employed a risk premium as high as 13.41% in his CAPM. In his 2008 South Dakota testimony, Mr. Hevert states that the 30-day average yield on a 30-year U.S. Treasury bond was 4.22%.[32]

Even though the risk-free rate has fallen over 140 basis points since 2008[33], Mr. Hevert's risk premiums have increased 631 basis points during this same time period. With such continuous unsubstantiated increases in the risk premiums, Mr. Hevert's unique application of the CAPM will never result in a lower ROE for his client. Mr. Hevert's testimony, therefore, irrespective of the current interest rate environment, can and does produce high ROE values for Piedmont and Mr. Hevert's other utility clients. However, such analysis is suspect on many levels.

Mr. Hevert's Chart 13, which is found on p. 74 of his prefiled testimony, shows that Mr. Hevert's market premiums tend to increase when interest rates decrease.[34] In this case, Mr. Hevert is using a market risk premium of 10.65%[35] to 13.77%[36] at a time when 30-year Treasury bonds are yielding 3.37%. However, when one looks at Mr. Hevert's Chart 13, the risk premium for 30-year US Treasury bonds yielding 3.06% is approximately 7%, not the 10.65% to 13.77% as claimed by Mr. Hevert. In fact, a risk premium of anything over 8% is not even found on Mr. Hevert's Chart 13, thereby showing Mr. Hevert's own data prove his methods are biased to generate a high ROE for his utility clients.

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[32] South Dakota Public Utilities Commission, Docket No. EL08-030, Schedule 4

[33] 30-year US Treasury yield on April 8, 2008 was 4.32%, same bond on April 4, 2008 was 2.92%. https://www.treasury.gov/resource-center/data-chart-center/interest-rates/pages/TextView.aspx?data=yieldYear&year=2008, 2019.

[34] Prefiled direct testimony of Robert Hevert, p. 37.

[35] Prefiled direct testimony of Robert Hevert, Exhibit RBH-3, p. 1

[36] Prefiled direct testimony of Robert Hevert, Exhibit RBH-3, p. 8

Previously, I noted the importance of consistency in evaluating the integrity of a witness. My testimony speaks to the fact that Mr. Hevert has, over the years, changed his application of the Capital Asset Pricing Model so as to inflate his clients' risk premiums against, even, the counterweight of a falling risk-free rate and a favorable economy. He has made those changes, moreover, while failing to adequately explain the reasoning behind them. These facts show clearly that the models Mr. Hevert uses to power his own arguments are inconsistent and, in my opinion, very unreliable.

**Q. HAS MR. HEVERT CHANGED ANY OTHER ASPECT OF HIS CAPM RISK PREMIUM CALCULATIONS OVER THE YEARS?**

A. Yes. In 2008, Mr. Hevert advocated using historical returns from the Ibbotson data series to determine a risk premium of 7.1%. In 2019, however, Mr. Hevert abandoned his use of historical data and, instead, now advocates for the use of a forecasted DCF model to forecast a risk premium which, in this case, is a market premium of 10.65% to 13.77%. [37] Mr. Hevert did not provide any explanation as to why he has abandoned the use of historical premiums in favor of his current preference for forecasted risk premiums.

Historic data is proven data, while projections are just that - projections. It is a known truth in the financial community that investors and analysts rely on historic, proven data to make investment decisions at least as much as they rely on speculative projections. Earlier in this testimony, I provided citations to several articles that call into question analyst forecasts.

It stands to reason, then, that the sheer volume of historic data available to investors - both as annual reports from individual companies and as market-

[37] Prefiled direct testimony of Robert Hevert, Exhibit RBH-4

wide research released by trusted financial institutions - speaks to the flawed logic in depending almost solely on speculative, uncertain inputs for financial models. As such, Company Witness Hevert's abandonment of such a valuable investor resource as historic returns, while offering no justifiable defense of his reasoning, is yet more evidence of the inconsistency in his argument.

**Q. WHAT EXPECTED MARKET RETURN DOES MR. HEVERT USE IN THE CAPM ANALYSIS HE EMPLOYS IN THIS CASE?**

A. In his direct testimony in this case, Mr. Hevert uses expected market return estimates of 13.68%[38] to 16.81%[39] return on the market.

**Q. DO YOU BELIEVE A 13.68% TO 16.81% RETURN ON THE MARKET IS A REASONABLE FORECAST?**

A. No, not all. Such a return is simply unrealistic. As an example, the average market return for the period of 1926 through 2013, as reported by Morningstar, was 10.10% using a geometric mean calculation and 12.10% with an arithmetic mean. Mr. Hevert now wants this Commission to believe the future market return is going to be grossly in excess of the average market return over the past nearly 100 years. The reality is market forecasters are expecting returns to average approximately half of what Mr. Hevert is forecasting in this case.

**B. Changes in Hevert's Risk Premium Models**

**Q. HAS MR. HEVERT CHANGED THE MANNER IN WHICH HE CALCULATES HIS RISK PREMIUM MODEL IN THE LAST YEARS?**

[38] Hevert direct testimony, Exhibit RBH-3, p. 1
[39] Id, p. 8

A. Yes. The inconsistencies that Mr. Hevert has exhibited in his application of the CAPM over the last several years also exist in his use of the Risk Premium model.

**Q. PLEASE EXPLAIN THE INCONSISTENCIES THAT YOU FOUND IN MR. HEVERT'S RISK PREMIUM ANALYSES IN HIS PREVIOUS TESTIMONIES.**

A. On p. 37, l. 4 of his prefiled testimony, Mr. Hevert states that the risk premium between ROEs granted by state regulators across the country and 30-year U.S. Treasury bond yields is 469 basis points. However, in his analysis in this case, Mr. Hevert increases that risk premium by another 216 basis points (685 as found in Exhibit RBH-6, p. 1 less 469). To be specific, on p. 74-75 of his pre-filed testimony, Mr. Hevert states the following:

> As Chart 13 illustrates, over time there has been a statistically significant, negative relationship between the 30-year Treasury yield and the Equity Risk Premium. Consequently, simply applying the long-term average Equity Risk Premium of 4.69 percent would significantly understate the Cost of Equity. Based on the regression coefficients in Chart 13, however, the implied ROE is between 9.89 percent and 10.11 percent (see Exhibit RBH-6 and Table 10, below).

Mr. Hevert did not provide a reason why he increased his risk premium nor did he provide any evidence. Hence, the Commission is left to wonder why he made such an unwarranted and unsubstantiated adjustment.

In his 2010 testimony before the South Carolina Public Service Commission in the general rate case of South Carolina Electric & Gas, Mr. Hevert performed the same regression analysis as noted in his testimony in this case and found a risk premium of 588 basis points to be appropriate.[40] In that 2010 case, Mr.

[40] *See* Hevert, p. 48 of SC PSC Docket 2009-489-E.

Hevert found a ROE in the range of 10.78% to 11.11%.[41] Mr. Hevert did not make any adjustments for "adders" in 2010 as he has done in the current case. This case comparison shows that Mr. Hevert has, again, changed his current testimony from his previous testimonies. This change is significant and leads to an unsubstantiated increase in Mr. Hevert's calculation of the cost of equity for Piedmont.

**Q. HAS MR. HEVERT EVER USED ANY OTHER MODELS THAN THE CONSTANT GROWTH DCF, CAPM, AND RISK PREMIUM MODELS THAT HE PRESENTS IN THIS CASE?**

A. Yes. In at least one past case, Mr. Hevert used what he called the "Multi-Stage DCF" model.[42]

**Q. DID MR. HEVERT PRESENT THE MULTI-STAGE DCF MODEL IN THIS CASE?**

A. No, he did not.

**Q. WHY DO YOU BELIEVE MR. HEVERT CHOSE NOT TO SUBMIT THE MULTI-STAGE DCF MODEL IN THIS CASE?**

A. The Multi-Stage DCF model that Mr. Hevert presented in the past, such as in the 2017 Duke Energy Carolinas ("DEC") North Carolina rate case[43], required an assumption of GDP growth. In the 2017 DEC case, Mr. Hevert's forecasted GDP growth estimate was 5.38%.[44] However, in 2017, the US Congressional Budget Office was projecting GDP growth of 2.0% from 2017 through 2027.[45] The use of the Multi-Stage DCF simply does not work well when one cannot substantiate GDP forecasts that conflict with forecasts from independent

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[42] Hevert Testimony in 2017 Duke Energy Carolinas rate case, NC Utilities Commission, Docket No. E-7, Sub 1146, p. 28
[43] Id.
[44] Id, p. 32.
[45] https://www.cbo.gov/publication/52370.

entities like the Congressional Budget Office. I am not surprised to see that Mr. Hevert stopped using the Multi-Stage DCF model.

### C. Changes in Weighting of Hevert Cost of Capital Methods

**Q. HAS MR. HEVERT BEEN CONSISTENT IN THE WEIGHTING OF THE RESULTS OF HIS COST OF CAPITAL METHODS FROM CASE TO CASE?**

A. No. In comparison to past cases, in this case Mr. Hevert has changed the weights he places on the methods.

**Q. CAN YOU PROVIDE US AN EXAMPLE OF THE CHANGE IN MR. HEVERT'S WEIGHTING OF HIS COST OF CAPITAL METHODS?**

A. Yes. The following Q&A is from Mr. Hevert's 2010 South Carolina Electric & Gas testimony:

> **Q. DID YOU UNDERTAKE ANY ADDITIONAL ANALYSES TO SUPPORT YOUR DCF MODEL RESULTS?**
>
> A. Yes. As noted earlier, I also used the CAPM and the Risk Premium approach as a means of assessing the reasonableness of my [Constant Growth] DCF results.[46] (insertion added)

However, in the recent Potomac Electric Power Company (Pepco) rate case heard before the Maryland Public Service Commission in Formal Case No. 9602 filed on January 15, 2019, Mr. Hevert attempts to dismiss the Constant Growth DCF model. To be specific, he states:

> **Q38. Do you believe that the Constant Growth DCF model currently provides a reasonable estimate of the Company's Cost of Equity?**

[46] South Carolina Public Service Commission Docket No. 2009-489-E, Hevert Testimony, 38.

A38. No, I do not. As a practical matter, the period over which my analyses were performed included market data that were inconsistent with the model's fundamental assumptions. As such, the model produced results at odds with current observable capital market conditions. Regardless of the method employed, however, an authorized ROE that is well below returns authorized for other utilities (1) runs counter to the *Hope* and *Bluefield* "comparable risk" standard, (2) would place the Company at a competitive disadvantage, and (3) would make it difficult for the Company to compete for capital at reasonable terms. [47]

So, in the prior South Carolina case, Mr. Hevert stated that he used the CAPM and Risk Premium models to assess the reasonableness of his DCF models. However, since the 2010 case in South Carolina, Mr. Hevert has drastically changed his application of the CAPM and Risk Premium models such that the changes result in higher cost estimates. The very simple fact is that the cost of capital has gone down dramatically over the past several years, a fact that Mr. Hevert is simply unwilling to acknowledge.

**Q. DO YOU AGREE WITH MR. HEVERT THAT THE CURRENT MARKET IS SO DIFFERENT FROM PAST MARKETS THAT ANALYSTS SHOULD CHANGE THEIR COST OF CAPITAL METHODOLOGIES FROM CASE-TO-CASE IN VARIOUS JURISDICTIONS?**

A. No. In the investing community, many consider the four most dangerous words to be: "***this time is different.***" There is no reason to doubt that a model that has worked well in the past should not work well in current times. Mr. Hevert's argument that the current financial times are different from the past ignores the fact that we have experienced "different" financial times in the past as well. Situations like the Great Depression, WWII, 9-11, the Great

[47] Hevert prefiled direct testimony, page 26-27.

Recession, and the multitude of other recessions experienced by this country have all been "different" in manners not unlike current market times. Mr. Hevert is attempting to convince state regulators that because a few economic elements in current times are unprecedented, the methods he used in the past are no longer valid. Such a position is not accurate. In reality, Mr. Hevert is simply choosing to forgo methods he used in the past because they no longer provide him the results that he needs – higher ROEs.

**Q. HAVE OTHER STATE REGULATORY BODIES RECOGNIZED THE INCONSISTENCY OF MR. HEVERT'S TESTIMONY OVER THE YEARS?**

A. Yes. Mr. Hevert filed testimony on behalf of Dominion Virginia State Corporation Commission ("Virginia SCC") in Case No. PUR-2017-00038. Mr. Hevert's recommendation was that Dominion Virginia Power ("DVP") should be granted a 10.5% ROE. The Virginia SCC weighed the evidence and instead granted DVP a 9.2% ROE. In regard to Mr. Hevert's testimony, the Virginia SCC found the following:

1. Mr. Hevert's proposed cost of equity of 10.25% to 10.75% did not represent the actual cost of equity in the marketplace nor a reasonable ROE for DVP; [48]
2. Mr. Hevert's recommended ROE of 10.5% is not supported by reasonable growth rates, DCF methods or risk premium analyses; [49]
3. Mr. Hevert's application of the CAPM is flawed and his application of the Bond Yield Plus Risk Premium model contains similar flaws as his CAPM analysis; [50] and

[48] Virginia SCC Final Order in Case No. PUR-2017-0003, Nov. 29, 2017, at p. 4.
[49] Id.

4. Mr. Hevert's claim of Dominion deserving a 10.5% ROE due to certain business was summarily rejected because the majority of DVP's future cap-ex could be recovered through automatic revenue adjustment clauses (RACs).[51]

## VIII. Cost of Service Study and Rate Design

**Q. WHAT PIEDMONT WITNESS PRESENTED THE COMPANY'S COST OF SERVICE STUDY AND PROPOSED RATE DESIGN IN THIS CASE?**

A. Piedmont retained the services of Mr. Daniel P. Yardley for the development of its cost of service study and its proposed rate design in this case.

**Q. PLEASE EXPLAIN HOW MR. YARDLEY PERFORMED THE COSS PRESENTED IN THIS CASE.**

A. In his prefiled direct testimony, Mr. Yardley presented an allocated cost of service study (ACOSS) in which he used various allocation factors to apportion Piedmont's costs and investments amongst its customer classes. The end result is, in essence, an income statement and rate base for each customer class from which a rate of return per class can be determined. Based on the results of the ACOSS, an analyst can design rates that will more accurately reflect the actual cost to serve a particular customer class.

**Q. DO YOU AGREE WITH THE MANNER IN WHICH MR. YARDLEY CALCULATED HIS ACOSS?**

A. No. Mr. Yardley used the peak and average allocation factor to apportion the fixed gas costs for Piedmont and, in doing so, skewed the results of the ACOSS.

[50] Id, 5.
[51] Id, 6.

**Q. WHAT ARE FIXED GAS COSTS AND HOW DOES THE ALLOCATION OF THESE COSTS AFFECT THE RESULTS OF THE ACOSS?**

A. Fixed gas costs represent the capacity costs associated with moving natural gas across the interstate pipelines and into North Carolina. These costs include firm transportation, incremental transportation, and peaking services transportation on the Transco pipeline as well as other similar costs on the Columbia, Cardinal, East Tennessee, Midwestern, and Texas Eastern Pipelines.

A data request [52] response provided by the Company shows that Piedmont incurred over $110 million in fixed gas costs during the test year. A slight change in the allocation of these costs can cause a wide change in the customer class rates of return in the ACOSS and, therein, should also cause a change in the rate design.

**Q. HOW DID MR. YARDLEY ALLOCATE FIXED GAS COSTS WITHIN HIS ACOSS?**

A. Mr. Yardley used the peak and average cost allocation method for allocating fixed gas costs in his ACOSS.

**Q. PLEASE EXPLAIN THE PEAK AND AVERAGE ALLOCATION METHOD.**

A. The peak and average allocation method apportions fixed gas costs at the ratio of 50% of the ratio of customer class usage at the time of the annual peak demand of the utility plus 50% of the ratio of the customer class usage (throughput) as compared to the total throughout for the entire year. Hence, the peak and average allocation factor gives equal weight to customer class usage

[52] Piedmont response 2-2Attachment.xlsx

at the time of the system peak and the customer class usage throughout the entire year.

**Q. IS THERE ANY OTHER ALLOCATION METHOD THAT COULD BE USED TO ALLOCATE FIXED GAS COSTS?**

A. Yes, the peak day allocation method is often used to allocate fixed gas costs.

**Q. PLEASE EXPLAIN THE PEAK DAY ALLOCATION.**

A. Piedmont's natural gas system is designed to meet the system peak day. Similarly, the Company purchases interstate pipeline capacity to meet its peak day demands. The peak day allocation method allocates fixed gas costs in the manner the utility purchases its needs to serve customers at its annual peak demand.

**Q. HOW WOULD THE CHANGE IN ALLOCATION FACTORS FROM PEAK AND AVERAGE TO PEAK DAY AFFECT THE ACOSS?**

A. A gas utility system's primary requirement at the time of the system peak is to serve its firm customers that absolutely must have their natural gas supplies met. These customers are called high priority gas customers and are, typically, residential and commercial consumers. However, Piedmont also has another set of customer(s) that have agreed to be interrupted at the time of the system peak so as to make room on the interstate pipeline for Piedmont's firm customers. These interruptible customers are typically manufacturers that are served at a lower rate with the expectation they will not be able to take natural gas service from Piedmont at the time of the system peak or on other high use days.

Based on the above, one can easily conclude that the use of the peak day demand allocation as opposed to the peak and average allocation will allocate

more fixed gas costs to residential and small commercial customers and less to interruptible customers.

**Q. WHAT ARE THE CUSTOMER CLASS RATES OF RETURN USING THE PEAK AND AVERAGE ALLOCATION FACTOR FOR FIXED GAS COSTS VERSUS USING THE PEAK DAY ALLOCATION FACTOR FOR FIXED GAS COSTS?**

A. Table 11 below provides the customer class rates of return using these two different allocation factors for apportioning fixed gas costs.

Table 11: Customer Class Rates of Return
Based on Fixed Gas Cost Allocation

| Customer Class | Customer Class RORs (%) | |
|---|---|---|
| | Peak & Average | Peak Day |
| Residential Rate 101 | 4.55% | 3.77% |
| Small GS Rate 102 | 8.09% | 7.58% |
| Medium GS Rate 152 | 18.86% | 19.50% |
| Large GS Sales Rate 103 | -4.80% | -2.43% |
| Large GS Transport Rate 113 | -3.31% | -2.01% |
| Interruptible Sales Rate 104 | 13.05% | 54.02% |
| Int Trans Rate 114 | 29.64% | 71.25% |
| Military Trans Rate T-10 | -2.36% | -2.59% |

As can be seen in the table above, with the exception of the interruptible sales and interruptible transportation classes, there is not much of a difference in the class rates per the ACOSS. The obvious reason for the huge increase in the

class rate of return for the interruptible classes is that, with the peak day allocation factor, these two rate classes are not being allocated much, if any, fixed gas costs. As a result, their class rates of return jump when these costs are excluded.

**Q. BASED ON THE RESULTS OF HIS ACOSS, HOW DID MR. YARDLEY DESIGN RATES TO BE APPROVED IN THIS CASE?**

A. Mr. Yardley paid little mind to the customer class rates of return he developed in his ACOSS. Instead, Mr. Yardley applied an equal rate increase across all customer classes to arrive at his suggested rate increase. Mr. Yardley addresses how he developed the across-the-board rate increase in his direct testimony when he states:

> **Q. What factors guided your recommendation that the proposed revenue increase be applied on an equal percentage basis to all rate classes?**
>
> A. The results of the ACOSS are one consideration in the development of proposed rates. Another important consideration is the current rate structure including the MDT and the level of fixed and variable charges. In addition, the historic level of returns and existing rates for each class are important considerations as is the need to develop prices that are fair and not unduly discriminatory. Taking into account all of these factors, I believe that applying the revenue increase on an equal percentage basis to all rate classes is reasonable and appropriate in this case.[53]

In the above quote, Mr. Yardley states that the results of the ACOSS are a consideration in the development of the proposed rates. However, Mr. Yardley's ACOSS indicates interruptible transportation customers are paying a class rate of return of 29.64% but, yet, he recommends a rate increase of 16.4% for this class. Contrary to his statement about taking into account "all of these factors", Mr. Yardley took an easy path by applying an equal increase to all customer classes.

[53] Prefiled Direct Testimony of Daniel Yardley, p. 9

**Q. WHAT ARE MR. YARDLEY'S PROPOSED CUSTOMER CLASS RATE INCREASES AND THE RESULTING CLASS RATES OF RETURN USING THE SWPA METHODOLOGY?**

A. Table 12 below provides the requested customer class increases and the resulting class rates of return

Table12: Piedmont Proposed Class Rate Increases and Class Rates of Return

| Customer Class | Requested Rate Increase (%) | Cust Class Rate of Return(%) |
|---|---|---|
| Residential - Rate 101 | 14.70% | 7.70% |
| Small GS - Rate 102 | 14.80% | 12.43% |
| Medium GS - Rate 152 | 14.70% | 26.58% |
| Large GS Sales - Rate 103 | 7.40% | 12.93% |
| Large GS Trans. - Rate 113 | 17.80% | 2.38% |
| Int. Sales - Rate 104 | 7.20% | **132.33%** |
| Int Trans - Rate 114 | 16.40% | **40.88%** |
| Military Trans | 14.50% | 2.30% |
| Special Contracts | | 14.35% |
| Municipal Contracts | | -2.33% |
| Power Gen Contracts | | 3.16% |

I have highlighted the Interruptible Sales (Rate 104) and Interruptible Transportation (Rate 114) class rates of return for the Commission's attention. Needless to say, such a high class rate of return is punitive and abusive. Manufacturers that use natural gas are already paying exorbitant rates and Mr. Yardley's proposal is to make these rates even more expensive and unfair.

**Q. ARE YOU PRESENTING A RATE DESIGN AS PART OF YOUR ANALYSIS IN THIS CASE?**

A. Yes, I am.

**Q. PLEASE EXPLAIN HOW YOU DEVELOPED YOUR RECOMMENDED RATE DESIGN.**

A. The basis of my rate design is the assumption that the sum of all my rate recommendations must allow Piedmont to earn my recommended overall cost of capital of 6.85%. I then made a second assumption that no customer class could sustain a rate increase or decrease of more than 10%. This last assumption is critical as, if we followed the details of the ACOSS results, interruptible sale and interruptible transportation customers would warrant a much greater rate reduction than 10%. My recommended rate change per customer class and the resulting class rates of return are found in Table 13 below.

Table 13: CUCA Recommended Rate Change
and Resulting Class Rates of Return

| Customer Class | CUCA Rec Rate Increase (%) | Cust Class Rate of Return(%) |
|---|---|---|
| Residential - Rate 101 | 9.5% | 7.60% |
| Small GS - Rate 102 | 5.60% | 10.26% |
| Medium GS - Rate 152 | -5.00% | 15.85% |
| Large GS Sales - Rate 103 | 6.00% | -1.00% |
| Large GS Trans. - Rate 113 | 8.00% | -2.13% |
| Int. Sales - Rate 104 | 0.00% | 13.05% |
| Int Trans - Rate 114 | -9.00% | 21.59% |
| Military Trans | 5.00% | -1.70% |
| Municipal Contracts | 10.00% | -0.28% |

In the above rate design, I attempted to balance the interests of all customer classes without allowing any one particular class to sustain excessive rate hikes while other classes enjoyed significant rate cuts. The customer class rates of return are still not cost-justified based on a risk/return basis, but the results are closer and more equitable than Mr. Yardley's results.

**Q. DID YOU USE THE SWPA ACOSS OR THE PEAK DAY DEMAND ACOSS IN THE DEVELOPMENT OF THE ABOVE-STATED RATE CHANGES AND ACCOMPANYING CLASS RATES OF RETURN?**

A. I used the SWPA ACOSS in the development of my recommended rate design. The reason is that use of the Peak Day ACOSS would not have altered my recommended rate design in any meaningful way. As noted in Table 13 above, the class rates of return for both the SWPA ACOSS and the Peak Day ACOSS are, with the exception of interruptible sales and interruptible transportation, very close to one other. Since I limited the rate change of any customer class to +/-10%, the resulting class rates of return could not change to a point of risk/return parity amongst the customer classes.

## IX. Rate Case Fees

**Q. WHAT ARE MR. YARDLEY'S FEES IN THIS CASE?**

A. According to Piedmont's response to CUCA DR 1-13, Mr. Yardley is being paid $160,000 for his participation in this rate case. For $160,000, Mr. Yardley developed the ACOSS and then, in his rate design, ignored the ACOSS. The $160,000 fee charged by Mr. Yardley in this case alone is much greater than the annual compensation of members of this Commission as well as that of Public Staff Natural Gas engineers, who have similar experience and skills as Mr. Yardley. Ratepayers should not be required to pay such an excessive expense.

**Q. WHAT ARE MR. HEVERT'S RATE CASE FEES IN THIS CASE?**

A. In response to CUCA DR 1-13, Piedmont has indicated that Mr. Hevert's fees in this case are expected to total $120,000. These fees, like those of Mr. Yardley, are excessive and unwarranted.

**Q. WHAT ARE THE LEGAL EXPENSES OF MR. JEFFRIES IN THIS CASE?**

A. In response to CUCA DR 1-13, Piedmont has indicated that the McGuire Woods fees in this case are expected to total $900,000. As with the consulting fees, such legal fees are excessive and unwarranted.

**Q. HAS THIS COMMISSION HISTORICALLY DISALLOWED RATE CASE EXPENSES IN THE PAST?**

A. No. Historically, this Commission has not disallowed rate case-related fees. One reason, perhaps, is that rate case fees are generally amortized over 3-5 years and are only a small part of the overall revenue requirement in any rate case. While I understand this concept, I believe the Commission should take a longer look at this issue to see how it impacts the regulatory and legislative process in this State and how it increases customer rates.

**Q. PLEASE EXPLAIN YOUR CONCERN ABOUT HOW UNCHECKED RATE CASE EXPENSES ARE AFFECTING THE REGULATORY AND LEGISLATIVE PROCESS IN NORTH CAROLINA.**

A. As this Commission is aware, Piedmont's parent company, Duke Energy, is currently attempting to pass legislation that would change the fundamental nature of how the regulatory system operates in North Carolina. One of the stated reasons for the proposed change is the high cost of rate case expenses. I find it highly ironic that Duke Energy can make such a claim when one of its subsidiary companies, Piedmont in this case, is willing to pay its consultants excessive fees. I believe that if Duke/Piedmont had to pay these rate case

expenses, instead of passing on these costs to ratepayers, the costs for these consultants would be much lower. However, a utility is allowed recovery of prudent rate case expenses and, as evidenced in this case, Piedmont has not shown constraint.

Another concern I have with these excessive rate case expenses is how these rate case expenses appear to consumer witnesses in North Carolina cases. If the Company is allowed rate case expenses of $120,000 (Mr. Hevert) to $900,000 (Mr. Jeffries) that are far in excess of the annual compensation of consumers' witnesses, such as employees of the Public Staff, it sends a poor regulatory message. I have known many of the Public Staff employees for well over 30 years and they are some of the best utility regulatory minds in the country. There is no basis or reason why Piedmont's witnesses should be compensated far more than Public Staff employees.

Similarly, put the McGuire Woods legal costs in perspective. The cost of $900,000 represents the annual cost of, probably, four or five or six Public Staff attorneys.

**Q. WHAT IS YOUR RECOMMENDATION AS TO HOW THIS COMMISSION TREAT THE RATE CASE FEES OF MR. YARDLEY AND MR. HEVERT IN THIS RATE CASE?**

A. The typical annual compensation, which includes salary and benefits, for a utilities rate engineer is approximately $150,000. I surmise that the development of the ACOSS would have taken Mr. Yardley, or any other experienced rate engineer, no more than 3 months to develop. As a result, I recommend Mr. Yardley's fees be cut 75% in this case. Specifically, I recommend the Commission disallow $120,000 of Mr. Yardley's fees in this case.

As to Mr. Hevert's fees, the Public Staff paid $50,000 for a ROE witness to present testimony in both the Duke Energy Carolinas (DEC) and Duke Energy Progress (DEP) rate cases. The cost, therefore, for each case was $25,000. Based on what the Public Staff paid for its ROE consultant just last year, I recommend that Mr. Hevert's rate case expenses be cut by $95,000 so that the total allowed cost is equal to the same $25,000 the Public Staff paid for its outside consultant.

As for legal costs, I recommend these costs be reduced 67% so that ratepayers bear only $300,000 for these expenses. Such a fee would represent the annual cost of close to two Public Staff attorneys, counting salary and benefits.

A disallowance of a portion of the rate fee expenses in this case would send a clear message to Piedmont that the Commission does not believe that utility consultants' work products are any more valuable than that of Public Staff employees. Such a message would also let Piedmont and its sister subsidiaries, Duke Energy Progress and Duke Energy Carolinas, know there is a cap to the scope of acceptable rate case-related fees that will be funded by ratepayers.

Lastly, let me be clear that my recommendation pertains only to recovery of rate case fees that are part of the allowed revenue requirement in this case. Piedmont can pay whatever it chooses for its consultants. However, stockholders should pick up all disallowed rate case expenses. Again, this would send the clear signal that unlimited cost recovery for ratepayer-funded rate case expenses will no longer be approved.

## X. Summary

**Q. MR. O'DONNELL, PLEASE SUMMARIZE YOUR TESTIMONY.**

A. Piedmont Natural Gas' requested rate increase in this case is excessive, unnecessary, and financially burdensome on the ratepayers of North Carolina. My specific recommendations in this case are as follows:

- Mr. Hevert's recommended rate of return is unreasonable, unnecessary, and excessive;
- Mr. Hevert's constantly changing application of the various cost of equity models underlies the fact that he is biased on behalf of his utility clients;
- the Company's allowed return on equity should be set at 9.0%
- the overall rate of return that Piedmont Natural Gas should be allowed to earn in this proceeding is 6.85%;
- rate design should be set such that the following changes occur to each customer class: 9.50% increase for residential consumers; 5.60% increase for small GS customers; -5.0% for medium GS customers; 6.0% for Large GS customers; 8.0% increase for Large GS Transportation customers; 0% change for Interruptible Sales customers; 9.0% cut for interruptible transportation customers; 5.0% increase for military customers; and a 10.0% increase for municipal customers
- Piedmont's requested rate case expenses should be slashed from $1.18 million to $365,000 as these costs are unreasonable and grossly excessive in comparison to consumer costs for the same work product.

**Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

A. Yes.

# Appendix A

# Kevin W. O'Donnell, CFA

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Kevin W. O'Donnell, is the founder of Nova Energy Consultants, Inc. in Cary, NC. Mr. O'Donnell's academic credentials include a B.S. in Civil Engineering - Construction Option from North Carolina State University as well as a MBA in Finance from Florida State University. Mr. O'Donnell is also a Chartered Financial Analyst (CFA).

Mr. O'Donnell has over thirty-three years of experience working in the electric, natural gas, and water/sewer industries. He is very active in municipal power projects and has assisted numerous southeastern U.S. municipalities cut their wholesale cost of power by as much as 67%. On Dec. 12, 1998, ***The Wilson Daily Times*** made the following statement about O'Donnell.

> **Although we were skeptical of O'Donnell's efforts at first, he has shown that he can deliver on promises to cut electrical rates.**

Through 2018, Mr. O'Donnell has completed close to 30 wholesale power projects for municipal and university-owned electric systems throughout North and South Carolina. In May of 1996 Mr. O'Donnell testified before the U.S. House of Representatives, Committee on Commerce, Subcommittee on Energy and Power regarding the restructuring of the electric utility industry.

Mr. O'Donnell has appeared as an expert witness in over 100 regulatory proceedings before the North Carolina Utilities Commission, the South Carolina Public Service Commission, the Virginia Corporation Commission, the Minnesota Public Service Commission, the New Jersey Board of Public Utilities, the Colorado Public Service Commission, Public Service Commission of the District of Columbia, the Maryland Public Service Commission, the Public Utility Commission of Texas, the Wisconsin Public Service Commission, the Oklahoma State Corporation Commission, and the Florida Public Service Commission. His area of expertise has included rate design, cost of service, rate of return, capital structure, creditworthiness issues, fuel adjustments, merger transactions, cogeneration studies, holding company applications, as well as numerous other accounting, financial, and utility rate-related issues.

Mr. O'Donnell is the author of the following two articles: "Aggregating Municipal Loads: The Future is Today" which was published in the Oct. 1, 1995 edition of *Public Utilities Fortnightly;* and "Worth the Wait, But Still at Risk" which was published in the May 1, 2000 edition of *Public Utilities Fortnightly.* Mr. O'Donnell is also the co-author of "Small Towns, Big Rate Cuts" which was published in the January, 1997 edition of *Energy Buyers Guide.* All of these articles discuss how rural electric systems can use the wholesale power markets to procure wholesale power supplies.

# Regulatory Cases of Kevin W. O'Donnell, CFA
## Nova Energy Consultants, Inc.

| Year | Name of Applicant | State Jusrisdiction | Docket No. | Client/ Employer | Case Issues |
|---|---|---|---|---|---|
| 1985 | Public Service Company of NC | NC | G-5, Sub 200 | Public Staff of NCUC | Return on equity, capital structure |
| 1985 | Piedmont Natural Gas Company | NC | G-9, Sub 251 | Public Staff of NCUC | Return on equity, capital structure |
| 1986 | General Telephone of the South | NC | P-19, Sub 207 | Public Staff of NCUC | Return on equity, capital structure |
| 1987 | Public Service Company of NC | NC | G-5, Sub 207 | Public Staff of NCUC | Return on equity, capital structure |
| 1988 | Piedmont Natural Gas Company | NC | G-9, Sub 278 | Public Staff of NCUC | Return on equity, capital structure |
| 1989 | Public Service Company of NC | NC | G-5, Sub 246 | Public Staff of NCUC | Return on equity, capital structure |
| 1990 | North Carolina Power | NC | E-22, Sub 314 | Public Staff of NCUC | Return on equity, capital structure |
| 1991 | Duke Energy | NC | E-7, Sub 487 | Public Staff of NCUC | Return on equity, capital structure |
| 1992 | North Carolina Natural Gas | NC | G-21, Sub 306 | Public Staff of NCUC | Natural gas expansion fund |
| 1992 | North Carolina Natural Gas | NC | G-21, Sub 307 | Public Staff of NCUC | Natural gas expansion fund |
| 1995 | Penn & Southern Gas Company | NC | G-3, Sub 186 | Public Staff of NCUC | Return on equity, capital structure |
| 1995 | North Carolina Natural Gas | NC | G-21, Sub 334 | Carolina Utility Customers Assoc. | Return on equity, capital structure, rate design, cost of service |
| 1995 | Carolina Power & Light Company | NC | E-2, Sub 680 | Carolina Utility Customers Assoc. | Fuel adjustment proceeding |
| 1995 | Duke Power | NC | E-7, Sub 559 | Carolina Utility Customers Assoc. | Fuel adjustment proceeding |
| 1996 | Piedmont Natural Gas Company | NC | G-9, Sub 378 | Carolina Utility Customers Assoc. | Return on equity, capital structure, rate design, cost of service |
| 1996 | Piedmont Natural Gas Company | NC | G-9, Sub 382 | Carolina Utility Customers Assoc. | Return on equity, capital structure, rate design, cost of service |
| 1996 | Public Service Company of NC | NC | G-5, Sub 356 | Carolina Utility Customers Assoc. | Return on equity, capital structure, rate design, cost of service |
| 1996 | Cardinal Extension Company | NC | G-39, Sub 0 | Carolina Utility Customers Assoc. | Capital structure, cost of capital |
| 1997 | Public Service Company of NC | NC | G-5, Sub 327 | Carolina Utility Customers Assoc. | Return on equity, capital structure, rate design, cost of service |
| 1998 | Public Service Company of NC | NC | G-5, Sub 386 | Carolina Utility Customers Assoc. | Return on equity, capital structure, rate design, cost of service |
| 1998 | Public Service Company of NC | NC | G-5, Sub 386 | Carolina Utility Customers Assoc. | Natural gas transporation rates |
| 1999 | Public Service Company of NC/SCANA | NC | G-5, Sub 400 | Carolina Utility Customers Assoc. | Merger case |
| 1999 | Public Service Company of NC/SCANA | NC | G-43 | Carolina Utility Customers Assoc. | Merger Case |
| 1999 | Carolina Power & Light Company | NC | E-2, Sub 753 | Carolina Utility Customers Assoc. | Holding company application |
| 1999 | Carolina Power & Light Company | NC | G-21, Sub 387 | Carolina Utility Customers Assoc. | Holding company application |
| 1999 | Carolina Power & Light Company | NC | P-708, Sub 5 | Carolina Utility Customers Assoc. | Holding company application |
| 2000 | Piedmont Natural Gas Company | NC | G-9, Sub 428 | Carolina Utility Customers Assoc. | Return on equity, capital structure, rate design, cost of service |
| 2000 | NUI Corporation | NC | G-3, Sub 224 | Carolina Utility Customers Assoc. | Holding company application |
| 2000 | NUI Corporation/Virginia Gas Compan | NC | G-3, Sub 232 | Carolina Utility Customers Assoc. | Merger application |
| 2001 | Duke Power | NC | E-7, Sub 685 | Carolina Utility Customers Assoc. | Emission allowances and environmental compliance costs |
| 2001 | NUI Corporation | NC | G-3, Sub 235 | Carolina Utility Customers Assoc. | Tariff change request. |
| 2001 | Carolina Power & Light Company/Prog | NC | E-2, Sub 778 | Carolina Utility Customers Assoc. | Asset transfer case |
| 2001 | Duke Power | NC | E-7, Sub 694 | Carolina Utility Customers Assoc. | Restructuring application |
| 2002 | Piedmont Natural Gas Company | NC | G-9, Sub 461 | Carolina Utility Customers Assoc. | Return on equity, capital structure, rate design, cost of service |
| 2002 | Cardinal Pipeline Company | NC | G-39, Sub 4 | Carolina Utility Customers Assoc. | Cost of capital, capital structure |
| 2002 | South Carolina Public Service Commiss | SC | 2002-63-G | South Carolina Energy Users Committee | Rate of return, accounting, rate design, cost of service |
| 2003 | Piedmont Natural Gas/North Carolina I | NC | G-9, Sub 470 | Carolina Utility Customers Assoc. | Merger application |

# Regulatory Cases of Kevin W. O'Donnell, CFA
## Nova Energy Consultants, Inc.

| Year | Name of Applicant | State Jusrisdiction | Docket No. | Client/ Employer | Case Issues |
|---|---|---|---|---|---|
| 2003 | Piedmont Natural Gas/North Carolina ! | NC | G-9, Sub 430 | Carolina Utility Customers Assoc. | Merger application |
| 2003 | Piedmont Natural Gas/North Carolina ! | NC | E-2, Sub 825 | Carolina Utility Customers Assoc. | Merger application |
| 2003 | Carolina Power & Light Company | NC | E-2, Sub 833 | Carolina Utility Customers Assoc. | Fuel case |
| 2004 | South Carolina Electric & Gas | SC | 2004-178-E | South Carolina Energy Users Committee | Return on equity, capital structure, rate design, cost of service |
| 2005 | Carolina Power & Light Company | NC | E-2, Sub 868 | Carolina Utility Customers Assoc. | Fuel case |
| 2005 | Piedmont Natural Gas Company | NC | G-9, Sub 499 | Carolina Utility Customers Assoc. | Return on equity, capital structure, rate design, cost of service |
| 2005 | South Carolina Electric & Gas | SC | 2005-2-E | South Carolina Energy Users Committee | Fuel application |
| 2005 | Carolina Power & Light Company | SC | 2006-1-E | South Carolina Energy Users Committee | Fuel application |
| 2006 | IRP in North Carolina | NC | E-100, Sub 103 | Carolina Utility Customers Assoc. | Submitted rebuttal testimony in investigation of IRP in NC. |
| 2006 | Piedmont Natural Gas Company | NC | G-9, Sub 519 | Carolina Utility Customers Assoc. | Creditworthiness issue |
| 2006 | Public Service Company of NC | NC | G-5, Sub 481 | Carolina Utility Customers Assoc. | Return on equity, capital structure, rate design, cost of service |
| 2006 | Duke Power | NC | E-7, 751 | Carolina Utility Customers Assoc. | App to share net revenues from certain wholesale pwr trans |
| 2006 | South Carolina Electric & Gas | SC | 2006-192-E | South Carolina Energy Users Committee | Fuel application |
| 2007 | Duke Power | NC | E-7, Sub 790 | Carolina Utility Customers Assoc. | Application to construct generation |
| 2007 | South Carolina Electric & Gas | SC | 2007-229-E | South Carolina Energy Users Committee | Rate of return, accounting, rate design, cost of service |
| 2008 | South Carolina Electric & Gas | SC | 2008-196-E | South Carolina Energy Users Committee | Base load review act proceeding |
| 2009 | Western Carolina University | NC | E-35, Sub 37 | Western Carolina University | Rate of return, accounting, rate design, cost of service |
| 2009 | Duke Power | NC | E-7, Sub 909 | Carolina Utility Customers Assoc. | Cost of service, rate design, return on equity, capital structure |
| 2009 | South Carolina Electric & Gas | SC | 2009-261-E | South Carolina Energy Users Committee | DSM/EE rate filing |
| 2009 | Duke Power | SC | 2009-226-E | South Carolina Energy Users Committee | Return on equity, capital structure, rate design, cost of service |
| 2009 | Tampa Electric | FL | 080317-EI | Florida Retail Federation | Return on equity, capital structure |
| 2010 | Duke Power | SC | 2010-3-E | South Carolina Energy Users Committee | Fuel application - assisted in settlement |
| 2010 | South Carolina Electric & Gas | SC | 2009-489-E | South Carolina Energy Users Committee | Return on equity, capital structure, rate design, cost of service |
| 2010 | Virginia Power | VA | PUE-2010-00006 | Mead Westvaco | Rate design |
| 2011 | Duke Energy | SC | 2011-20-E | South Carolina Energy Users Committee | Nuclear construction financing |
| 2011 | Northern States Power | MN | E002/GR-10-971 | Xcel Large Industrials | Return on equity, capital structure |
| 2011 | Virginia Power | VA | PUE-2011-0027 | Mead Westvaco | Capital structure, revenue requirement |
| 2011 | Duke Energy | NC | E-7, Sub 989 | Carolina Utility Customers Assoc. | Accounting, cost of service, rate design, ROE, capital structure |
| 2011 | Duke Energy | SC | 2011-271-E | South Carolina Energy Users Committee | Accounting, cost of service, rate design, ROE, capital structure |
| 2011 | Dominion Virginia Power | VA | PUE-2011-00073 | Mead Westvaco | Rate design |
| 2012 | Town of Smithfield/Partners Equity Gr | NC | ES-160, Sub 0 | Partners Equity Group | Rate design, asset valuation |
| 2012 | Florida Power & Light | FL | 120015-EI | Florida Office of Public Counsel | Capital structure |
| 2012 | South Carolina Electric & Gas | SC | 2012-218-E | South Carolina Energy Users Committee | Accounting, cost of service, rate design, ROE, capital structure |
| 2013 | Progress Energy Carolinas | NC | E-2, Sub 1023 | Carolina Utility Customers Assoc. | Accounting, cost of service, rate design, ROE, capital structure |
| 2013 | Duke Energy Carolinas | NC | E-7, Sub 1026 | Carolina Utility Customers Assoc. | Rate design |
| 2013 | Jersey Central Power & Light | NJ | BPU ER12111052 | Gerdau Ameristeel | Return on equity, capital structure |
| 2013 | Duke Energy Carolinas | SC | 2013-59-E | South Carolina Energy Users Committee | Accounting, cost of service, rate design, ROE, capital structure |

# Regulatory Cases of Kevin W. O'Donnell, CFA
## Nova Energy Consultants, Inc.

| Year | Name of Applicant | State Jusrisdiction | Docket No. | Client/ Employer | Case Issues |
|---|---|---|---|---|---|
| 2013 | Tampa Electric | FL | 130040-EI | Florida Office of Public Counsel | Capital structure and financial integrity |
| 2013 | Piedmont Natural Gas | NC | G-9, Sub 631 | Carolina Utility Customers Assoc. | Accounting, cost of service, rate design, ROE, capital structure |
| 2014 | Dominion Virginia Power | VA | PUE-2014-00033 | Mead Westvaco | Recoverable fuel costs, hedging strategies |
| 2014 | Public Service Company of Colorado | CO | 14AL-0660E | Colorado Healthcare Electric Coordinating Council | Return on equity, capital structure |
| 2015 | WEC Acquisition of Integrys | WI | 9400-YO-100 | Staff of Wisconsin Public Service Commission | Merger analysis |
| 2015 | Dominion Virginia Power | VA | PUE-2015-00027 | Federal Executive Agencies | Return on equity |
| 2015 | South Carolina Electric & Gas | SC | 2015-103-E | South Carolina Energy Users Committee | Return on equity |
| 2015 | Western Carolina University | NC | E-35, Sub 45 | Western Carolina University | Accounting, cost of service, rate design, ROE, capital structure |
| 2016 | Sandpiper Energy | MD | 9410 | Maryland Office of People's Counsel | Return on equity, capital structure |
| 2016 | Washington Gas Light | DC | FC 1137 | Washington, DC Office of People's Counsel | Return on equity, capital structure |
| 2016 | Florida Power & Light | FL | 160021-EI | Florida Office of Public Counsel | Capital Structure |
| 2016 | Jersey Central Power & Light | NJ | EM15060733 | NJ Division of Rate Counsel | Asset valuation |
| 2016 | Rockland Electric Company | NJ | ER16050428 | NJ Division of Rate Counsel | Rate design |
| 2016 | Dominon NC Power | NC | E-22, Sub 532 | Carolina Utility Customers Assoc. | Accounting, cost of service, rate design, ROE, capital structure |
| 2017 | Potomac Electric Power | DC | FC 1139 | Healthcare Council of the National Capitol Area (HCNCA) | ROE and capital structure |
| 2017 | Columbia Gas of Maryland | MD | FC 9447 | Maryland Office of People's Counsel | ROE and capital structure |
| 2017 | Washington Gas Light | DC | FC 1142 | Washington, DC Office of People's Counsel | Merger analysis |
| 2017 | Duke Energy Progress | NC | E-2, Sub 1142 | Carolina Utility Customers Assoc. | Accounting, cost of service, rate design, ROE, capital structure |
| 2018 | Public Service Electric & Gas | NJ | GR17070776 | NJ Division of Rate Counsel | ROE and capital structure |
| 2018 | Duke Energy Carolinas | NC | E-7, Sub 1146 | Carolina Utility Customers Assoc. | Accounting, cost of service, rate design, ROE, capital structure |
| 2018 | Elkton Gas/SJI | MD | FC 9475 | Maryland Office of People's Counsel | Merger analysis |
| 2018 | Entergy Texas | TX | PUC 48371 | Public Utilities Commission of Texas | ROE |
| 2018 | Duke Energy Carolinas | SC | 2018-3-E | South Carolina Energy Users Committee | Fuel case |
| 2018 | Elkton Gas Company | MD | FC 9488 | Maryland Office of People's Counsel | Accounting, ROE, capital structure |
| 2018 | Baltimore Gas & Electric | MD | FC9484 | Maryland Office of People's Counsel | ROE, capital structure |
| 2018 | South Carolina Electric & Gas | SC | 2017-370-E | South Carolina Energy Users Committee | Creditworthiness issue |
| 2018 | Jersey Central Power & Light | NJ | EO18070728 | NJ Division of Rate Counsel | ROE and capital structure |
| 2019 | Duke Energy Carolinas | SC | 2018-319-E | South Carolina Energy Users Committee | Accounting, rate design |
| 2019 | Duke Energy Progress | SC | 2018-318-E | South Carolina Energy Users Committee | Accounting, rate design |
| 2019 | Public Service Electric and Gas | NJ | EO18060629 | NJ Division of Rate Counsel | ROE and capital structure |
| 2019 | Potomac Electric Power | MD | FC 9602 | Maryland Office of People's Counsel | ROE, capital structure |
| 2019 | Oklahoma Gas and Electric | OK | PUD 201800140 | Sierra Club | Creditworthiness issue |
| 2019 | Peoples Natural Gas | PA | R-2018-3006818 | Pennsylvania Office of Consumer Advocate | ROE, capital structure |
| 2019 | UGI Natural Gas | PA | R-2018-3006814 | Pennsylvania Office of Consumer Advocate | ROE, capital structure |
| 2019 | Dominion Virginia Power | VA | PUR-2019-00050 | Federal Executive Agencies | Return on Equity |

# Piedmont Natural Gas
## DCF Summary
## NCUC Docket No. G-9, Sub 743

| Company | DCF Results | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 13 Wk. Avg. Dividend Yield | 4 Wk. Avg. Dividend Yield | Current Dividend Yield | Value Line | | | | | | | | | Plowback Growth Rate | CFRA Forecasted EPS | Schwab Forecasted EPS |
| | | | | 10 Year | | | 5 Year | | | Forecasted | | | | | |
| | | | | EPS | DPS | BPS | EPS | DPS | BPS | EPS | DPS | BPS | | | |
| Atmos Energy Corp | 2.2% | 2.2% | 2.2% | 6.5% | 3.5% | 5.5% | 10.0% | 5.5% | 7.0% | 7.5% | 7.0% | 7.0% | 4.8% | 6.0% | 6.5% |
| Chesapeake UTIL | 1.7% | 1.8% | 1.8% | 9.0% | 5.0% | 10.0% | 8.0% | 6.0% | 10.5% | 9.0% | 9.0% | 9.0% | 5.7% | NA | 7.2% |
| New Jersey Res. | 2.4% | 2.4% | 2.4% | 7.0% | 7.5% | 7.0% | 5.5% | 6.5% | 8.0% | 3.5% | 4.0% | 7.0% | 6.3% | 6.0% | 6.0% |
| N.W.Natural | 2.9% | 2.7% | 2.7% | -10.5% | 2.5% | 2.0% | -18.0% | 1.0% | — | 27.0% | 2.5% | 1.0% | 2.9% | 4.0% | 4.0% |
| One Gas, Inc | 2.3% | 2.4% | 2.4% | — | — | — | — | — | — | 8.0% | 8.5% | 4.5% | 3.8% | 6.0% | 5.0% |
| South Jersey INDS | 3.8% | 3.8% | 3.8% | 1.5% | 8.0% | 6.5% | -2.5% | 6.0% | 6.0% | 10.5% | 4.0% | 4.5% | 2.5% | 9.0% | 5.5% |
| Southwest Gas | 2.6% | 2.6% | 2.6% | 7.0% | 8.5% | 5.5% | 4.5% | 10.5% | 6.0% | 9.0% | 5.0% | 7.5% | 4.5% | 6.0% | 6.1% |
| Spire Inc | 2.9% | 2.8% | 2.8% | 4.0% | 4.0% | 7.5% | 7.5% | 5.0% | 8.0% | 5.5% | 4.0% | 4.0% | 3.9% | 4.0% | 3.4% |
| Average | 2.6% | 2.6% | 2.6% | 3.5% | 5.6% | 6.3% | 2.1% | 5.8% | 7.6% | 10.0% | 5.5% | 5.6% | 4.3% | 5.9% | 5.5% |

Exhibit KWO-1

# Piedmont Natural Gas
## Plowback Analysis
## NCUC Docket No. G-9, Sub 743

| Company | % Retained to Common Equity | | | | |
|---|---|---|---|---|---|
| | 2017 | 2018 | 2019E | 2022E/2024E | Average |
| Atmos Energy Corp | 4.9% | 4.8% | 4.5% | 5.0% | 4.8% |
| Chesapeake UTIL | 4.9% | 6.7% | 5.0% | 6.0% | 5.7% |
| New Jersey Res. | 5.0% | 10.3% | 5.0% | 5.0% | 6.3% |
| N.W.Natural | NMF | 2.1% | 2.0% | 4.5% | 2.9% |
| One Gas, Inc | 3.7% | 3.5% | 3.5% | 4.5% | 3.8% |
| South Jersey INDS | 0.9% | 1.7% | nmf | 5.0% | 2.5% |
| Southwest Gas | 4.5% | 3.6% | 4.5% | 5.5% | 4.5% |
| Spire Inc | 3.3% | 4.7% | 3.0% | 4.5% | 3.9% |

Source: The Value Line Investment Survey, May 31, 2019

# Piedmont Natural Gas
## Earned ROEs
## NCUC Docket No. G-9, Sub 743

| Company | % Return on Common Equity | | | |
|---|---|---|---|---|
| | 2017 | 2018E | 2019E | 2022E/2024E |
| Atmos Energy Corp | 9.8% | 9.3% | 9.0% | 10.0% |
| Chesapeake UTIL | 9.0% | 10.0% | 10.0% | 10.0% |
| New Jersey Res. | 12.1% | 17.1% | 11.5% | 11.0% |
| N.W.Natural | NMF | 8.5% | 9.0% | 12.0% |
| One Gas, Inc | 8.2% | 8.5% | 8.5% | 10.0% |
| South Jersey INDS | 8.2% | 10.5% | 10.0% | 12.0% |
| Southwest Gas | 9.6% | 9.0% | 8.5% | 9.5% |
| Spire Inc | 8.1% | 9.5% | 8.0% | 10.5% |
| Average | **9.3%** | **10.3%** | **9.3%** | **10.6%** |

Source: The Value Line Investment Survey, May 31, 2019

# Piedmont Natural Gas
## CAPM Results
## NCUC Docket No. G-9, Sub 743

Comparable Group

| | Risk-Free Rate | Beta | Equity Risk Premium | Equity Cost Rate |
|---|---|---|---|---|
| Treasury - Maximum | 3.46% | 0.69 | 4.00% | 6.21% |
| Treasury - Average | 3.02% | 0.69 | 4.00% | 5.77% |
| Treasury - Minimum | 2.47% | 0.69 | 4.00% | 5.22% |

| | Risk-Free Rate | Beta | Equity Risk Premium | Equity Cost Rate |
|---|---|---|---|---|
| Treasury - Maximum | 3.46% | 0.69 | 6.00% | 7.59% |
| Treasury - Average | 3.02% | 0.69 | 6.00% | 7.15% |
| Treasury - Minimum | 2.47% | 0.69 | 6.00% | 6.60% |