COMMONWEALTH OF PENNSYLVANIA

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June 7, 2022

Via Electronic Mail Only
The Honorable Christopher Pell
The Honorable John M. Coogan
Office of Administrative Law Judge
Pennsylvania Public Utility Commission
801 Market Street, Suite 4063
Philadelphia, PA 19107

Re: Pennsylvania Public Utility Commission
v.
Columbia Gas of Pennsylvania, Inc.
Docket No. R-2022-3031211

Dear Judge Pell and Judge Coogan:

Enclosed please find a copy of the Direct Testimony being submitted on behalf of the Office of Consumer Advocate in the above-referenced proceeding, as follows:

Direct Testimony of Lafayette K. Morgan, OCA Statement 1

(Public and CONFIDENTIAL Versions)

Direct Testimony of David J. Garrett, OCA Statement 2

Direct Testimony of Jerome D. Mierzwa, OCA Statement 3

Direct Testimony of Roger D. Colton, OCA Statement 4

Direct Testimony of Noah D. Eastman, OCA Statement 5

Please note that the **CONFIDENTIAL VERSION** of Statement 1 will only be provided to the parties who have executed a Stipulated Protective Agreement to receive confidential material as indicated on the enclosed Certificate of Service.

Copies have been served on the parties as indicated on the enclosed Certificate of Service. Due to the ongoing emergency period, hard copies of the OCA's testimony cannot be provided at this time. Hard copies can be provided, upon request, as normal operations resume. The OCA appreciates your understanding of this matter.

Respectfully submitted,

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Enclosures:
cc: PUC Secretary Rosemary Chiavetta, (Letter and Certificate of Service only)
Athena Delvillar, ALJ Legal Assistant (**email only**: sdelvillar@pa.gov)
Certificate of Service
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CERTIFICATE OF SERVICE

Re: Pennsylvania Public Utility Commission	:	
	:	
v.	:	Docket No. R-2022-3031211
	:	
Columbia Gas of Pennsylvania, Inc.	:	

I hereby certify that I have this day served a true copy of the following documents, the Office of Consumer Advocate's Direct Testimony as follows:

Direct Testimony of Lafayette K. Morgan, OCA Statement 1

(Public and CONFIDENTIAL Versions)

Direct Testimony of David J. Garrett, OCA Statement 2

Direct Testimony of Jerome D. Mierzwa, OCA Statement 3

Direct Testimony of Roger D. Colton, OCA Statement 4

Direct Testimony of Noah D. Eastman, OCA Statement 5

upon parties of record in this proceeding in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant), in the manner and upon the persons listed below:

Dated this 7th day of June 2022.

***Receiving the CONFIDENTIAL Version of Statement 1**

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Dated: June 7, 2022
*330127

OCA Statement 1

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	)	
	)	
v.	)	Docket No. R-2022-3031211
	)	
Columbia Gas of Pennsylvania, Inc.	)	

DIRECT TESTIMONY

OF

LAFAYETTE K. MORGAN, JR.

ON BEHALF OF THE

OFFICE OF CONSUMER ADVOCATE

Public Version

June 7, 2022

EXETER
ASSOCIATES, INC.
10480 Little Patuxent Parkway, Suite 300
Columbia, Maryland 21044

TABLE OF CONTENTS

I. <u>INTRODUCTION</u>

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Lafayette K. Morgan, Jr. My business address is 10480 Little Patuxent Parkway, Suite 300, Columbia, Maryland, 21044. I am a Public Utilities Consultant working with Exeter Associates, Inc. (Exeter). Exeter is a consulting firm specializing in issues pertaining to public utilities.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND QUALIFICATIONS.

A. I received a Master of Business Administration degree from The George Washington University. The major area of concentration for this degree was Finance. I received a Bachelor of Business Administration degree with concentration in Accounting from North Carolina Central University. I was previously a CPA licensed in the state of North Carolina, however, in 2009, I elected to place my license in an inactive status as I focused on start-up activities for other business interests.

Q. WOULD YOU PLEASE DESCRIBE YOUR PROFESSIONAL EXPERIENCE?

A. From May 1984 until June 1990, I was employed by the North Carolina Utilities Commission - Public Staff in Raleigh, North Carolina. I was responsible for analyzing testimony, exhibits, and other data presented by parties before the North Carolina Utilities Commission. I had the additional responsibility of performing the examination of books and records of utilities involved in rate proceedings and summarizing the results into testimony and exhibits for presentation before that Commission. I was also involved in numerous special projects, including participating in compliance and prudence audits of a major utility, and conducting research on several issues affecting natural gas and electric utilities.

From June 1990 until July 1993, I was employed by Potomac Electric Power Company (Pepco) in Washington, D.C. At Pepco, I was involved in the preparation of the cost of service, rate base and ratemaking adjustments supporting Columbia's requests for revenue increases in the State of Maryland and the District of Columbia.

From July 1993 through 2010, I was employed by Exeter as a Senior Regulatory Analyst. During that period, I was involved in the analysis of the operations of public utilities, with emphasis on utility rate regulation. I reviewed and analyzed utility rate filings, focusing primarily on revenue requirements determination. This work involved natural gas, water, electric, and telephone companies.

In 2010, I left Exeter to focus on start-up activities for other ongoing business interests. In late 2014, I returned to Exeter continuing to work in a similar capacity as prior to my hiatus.

Q. HAVE YOU PREVIOUSLY TESTIFIED IN REGULATORY PROCEEDINGS ON UTILITY RATES?

A. Yes. I have previously presented testimony and affidavits on numerous occasions before the Pennsylvania Public Utility Commission, the North Carolina Utilities Commission, the Virginia Corporation Commission, the Louisiana Public Service Commission, the Georgia Public Service Commission, the Maine Public Utilities Commission, the Kentucky Public Service Commission, the Public Utilities Commission of Rhode Island, the Vermont Public Service Board, the Illinois Commerce Commission, the West Virginia Public Service Commission, the Maryland Public Service Commission, the Corporation Commission of Oklahoma, Kansas

Corporation Commission, the Philadelphia Gas Commission, the Philadelphia Water, Sewer and Storm Water Rate Board, the Colorado Public Utilities Commission, the Public Service Commission of South Carolina, and the Federal Energy Regulatory Commission (FERC). My resume is attached hereto as Appendix A.

Q. ON WHOSE BEHALF ARE YOU APPEARING?

A. I am presenting testimony on behalf of the Pennsylvania Office of Consumer Advocate (OCA).

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

A. Exeter has been retained by the OCA to assist in the evaluation of the general rate filing submitted by Columbia Gas of Pennsylvania (Columbia). I have been asked by the OCA to present my findings with respect to Columbia's revenue requirement and its proposed rate increase. I calculate Columbia's rate base, pro forma operating income under present rates, and overall revenue deficiency based upon my recommended adjustments to Columbia's claims. My findings are based upon incorporating the recommendations and findings of other OCA witnesses who are also presenting testimony in this proceeding.

Q. PLEASE IDENTIFY THE OCA'S OTHER EXPERT WITNESSES WHO ARE PRESENTING TESTIMONY IN THIS PROCEEDING.

A. In addition to my testimony, there are four other witnesses presenting testimony on behalf of the OCA. Mr. David Garrett provides testimony on the appropriate rate of return and cost of capital issues. Mr. Jerome Mierzwa is the OCA's witness who provides testimony on class cost of service and rate design issues. Mr. Roger Colton is the OCA witness who provides testimony on the universal service issues. Mr. Garrett, Mr. Colton, and Mr. Noah Eastman provide testimony on Columbia's claimed management performance adder.

Q. IN CONNECTION WITH THIS CASE, HAVE YOU PERFORMED AN EXAMINATION AND REVIEW OF COLUMBIA'S TESTIMONY AND EXHIBITS?

A. Yes. I have reviewed Columbia's testimonies, exhibits and its rate filing. I have also reviewed Columbia's responses to the OCA, the Office of Small Business Advocate (OSBA), and the Bureau of Investigation & Enforcement (I&E) interrogatories.

Q. WHAT PERIOD HAVE YOU USED IN MAKING YOUR DETERMINATION OF COLUMBIA'S REVENUE REQUIREMENTS?

A. I used the Fully Projected Future Test Year (FPFTY) ending December 31, 2023, as filed by Columbia, as the basis for determining its rate year revenue requirements.

Q. HAVE YOU PREPARED SCHEDULES TO ACCOMPANY YOUR TESTIMONY?

A. Yes. I have prepared Schedules LKM-1 through LKM-13. Schedule LKM-1 provides a summary of revenues and expenses under present and proposed rates. Schedule LKM-2 summarizes my adjustments to Columbia's FPFTY rate base. Schedule LKM-3 provides a summary of my adjustments to the FPFTY revenues and expenses and the resulting operating income. The various adjustments that I am recommending to Columbia's claimed rate base, revenues and operating expenses are presented on Schedules LKM-4 through LKM-13.

Q. HOW IS THE REMAINDER OF YOUR TESTIMONY ORGANIZED?

A. First, I provide a summary of Columbia's filing and my findings and recommendations. Then, I document and explain each of the adjustments I made to Columbia's rate base and operating income to arrive at the rate year revenue requirement shown on Schedule LKM-1. My discussion of these adjustments is organized into sections corresponding to the issue being addressed. These sections are set forth in the Table of Contents for this testimony.

II. SUMMARY AND RECOMMENDATIONS

Q. PLEASE SUMMARIZE THE RATE RELIEF REQUESTED BY COLUMBIA IN ITS FILING.

A. On March 18, 2022, Columbia filed its base rate case with the Pennsylvania Public Utility Commission (the Commission) to increase base utility rates by $82,151,953. According to the Company, if its entire request is approved, the total bill for a residential customer who consumes 70 therms of gas per month, would increase from $123.24 to $135.67 per month, or by 10.09 percent, inclusive of the energy efficiency rider rate. A small commercial customer using 150 therms of gas Columbia per month would experience an increase from $205.73 to $223.51, or by 8.64 percent, inclusive of the energy efficiency rider rate. The total bill for a small industrial customer using 1,316 therms of gas from Columbia per month would increase from $1,476.21 to $1,586.33 per month, or by 7.46 percent.

Q. PLEASE SUMMARIZE YOUR FINDINGS AND RECOMMENDATIONS.

A. As shown on Schedule LKM-1, I have determined that Columbia's current annual revenue should be decreased by $16,249,779 for the FPFTY ending December 31, 2023. This is $98,401,732 million less than Columbia's requested increase of $82,151,953. This is the amount by which revenues exceed those required to generate an overall rate of return on rate base of 6.53 percent after accounting for the OCA's adjustments to Columbia's claimed rate base and operating income. The overall return of 6.53 percent represents OCA witness Garrett's findings regarding Columbia's overall rate of return. In comparison, Columbia is seeking an overall return of 8.08 percent.

Q. WHAT EFFECT DOES MR. GARRETT'S REMOVAL OF MR. MOUL'S MANAGEMENT PERFORMANCE PREMIUM OF 0.25 PERCENT HAVE ON THE COMPANY'S REVENUE REQUIREMENT?

A. Deducting the 0.25 percent management performance premium from the Company's proposed 11.20 percent cost of equity would reduce the Company's filed 11.20 percent equity cost rate to 10.95%. Incorporating this into the overall rate of return would result in an overall return of 7.94 percent instead of the Company's proposed 8.08 percent. The revenue requirement impact would be a reduction of about $5,898,373. (Rate Base of $2,958,295,014 times the rate of return of 7.94 percent equals $234,888,624, or a rate of return reduction of $4,141,613 from the Company's proposed rate of return of $239,030,237. The $4,141,613 is multiplied by the gross revenue factor of 1.42417301 which equals $5,898,373).

Q. WHAT EFFECT DOES MR. GARRETT'S REMOVAL OF MR. MOUL'S LEVERAGE ADJUSTMENT OF 0.99 PERCENT HAVE ON THE COMPANY'S REVENUE REQUIREMENT?

A. Deduction of the 0.99 percent leverage adjustment from the Company's filed 11.20 percent equity cost rate would equal an equity cost rate of 10.21 percent. Incorporating this into the overall rate of return would result in an overall ROR of 7.54 percent instead of the Company's proposed 8.08 percent. The revenue requirement impact would be a reduction of about $22,750,869. (Rate Base of $2,958,295,014 times the rate of return of 7.54 percent equals $223,055,444, or a rate of return reduction of $15,974,793 from the Company's proposed rate of return of $239,030,237. The $15,974,793 is multiplied by the gross revenue factor of 1.42417301 which equals $22,750,869.

Q. WHAT EFFECT DOES MR. GARRETT'S CAPITAL STRUCTURE HAVE ON THE COMPANY'S OVERALL REVENUE REQUIREMENT INCREASE?

A. Based upon Mr. Garrett's overall recommended capital structure, the rate of return proposed by the Company would go down from $239,030,237 to $228,972,034, a decrease of $10,058,203 million. Multiplying this by the gross revenue factor of 1.42417301 would calculate to a $14,324,621 revenue requirement decrease from the Company's proposed increase in revenue requirement of $82,151,955.

III. OCA ADJUSTMENTS TO COLUMBIA'S COST OF SERVICE

A. Rate Base Adjustments

Plant in Service

Q. PLEASE EXPLAIN YOUR ADJUSTMENT TO COLUMBIA'S PLANT IN SERVICE CLAIM.

A. Columbia's FPFTY Plant in Service claim was derived beginning with the Historical Test Year (HTY) Plant in Service balances and adjusted to reflect the projected plant additions expected to occur during the Future Test Year (FTY) and the FPFTY. According to the Company the net plant additions were derived from the forecasted plant additions based on the Company's current capital plan and the forecasted plant retirements as presented in its depreciation study.

I am recommending an adjustment to the Company's Plant in Service claim to reflect two changes. First, from the data supplied by the Company, it has demonstrated a consistent pattern where the value of the actual capital additions is less than the budgeted amounts. It is necessary to reflect this historical pattern in the Company's Plant in Service claim. Second, the Company has delayed the completion date of at least 3 projects until after the FPFTY and cancelled 1 project. To comply with Pennsylvania regulations, these delays and the cancellation should be deducted from the Company's Plant in Service.

Q. WHAT EVIDENCE DO YOU HAVE TO SUPPORT YOUR CLAIM THAT THE VALUE OF COLUMBIA'S ACTUAL PLANT ADDITIONS IS HISTORICALLY LESS THAN THE VALUE OF ITS BUDGETED PLANT ADDITIONS?

A. First, Columbia witness Covert shows in her testimony that the Company was 3.36 percent under the budget provided in Docket No. R-2021-3024296 for net additions for the 12 months ended November 30, 2021.[1] However, the table below[2] provides a 3-year snapshot of the actual to budget plant additions.

Columbia Gas of Pennsylvania, Inc.
Property, Plant & Equipment - Budget to Actual Comparison

Line No.	Description	Budget 2018 Rate Case	Actual 2018	Over/(Under)	Budget 2020 Rate Case	Actual 2020	Over/(Under)	Budget 2021 Rate Case	Actual 2021	Over/(Under)
1	Growth	38,262,315	46,279,079	8,016,764	42,006,774	41,232,544	(774,230)	79,577,354	55,269,234	(24,308,120)
2	Age & Condition	261,629,694	213,623,926	(48,005,768)	296,559,428	294,530,103	(2,029,325)	507,669,433	519,375,712	11,706,279
3	Public Improvement	7,287,194	7,938,319	651,125	8,282,667	9,056,065	773,397	17,511,337	17,300,263	(211,074)
4	Betterment	20,039,783	18,507,910	(1,531,874)	13,843,886	11,443,348	(2,400,538)	82,941,682	37,152,753	(45,788,929)
5	Support Services	4,311,590	3,153,849	(1,157,741)	2,366,476	1,676,748	(689,729)	5,352,332	9,538,702	4,186,370
6	Shared Services	13,839,596	7,182,693	(6,656,903)	14,761,639	10,755,984	(4,005,656)	63,828,694	84,352,389	20,523,695
7	Unallocated SEGA Overheads	-	(554,046)	(554,046)	-	503,875	503,875	-	(592,098)	(592,098)
8	**Total 2021 Capital Additions**	**345,370,173**	**296,131,730**	**(49,238,442)**	**377,820,871**	**369,198,667**	**(8,622,204)**	**756,880,833**	**722,396,955**	**(34,483,877)**
	Percentage Under Budget			**14.3%**			**2.3%**			**4.6%**

[1]Columbia Statement No. 11, page 4, line 1.
[2]Reproduced from Columbia response to OCA 5-002 Attachment A.

As can be seen on the chart above, in each of the last three rate cases, the budgeted plant additions exceeded the actual plant additions. Specifically, in 2018, Columbia budgeted for $345,370,173 in capital additions and only spent $296,131,730, a difference of $49,238,442 (14.3%); in 2020 Columbia budgeted for $377,820,871 in capital additions and only spent $369,198,667, a difference of $8,622,204 (2.3%); and in 2021, Columbia budgeted for $756,880,833 in capital additions and only spent $722,396,955, a difference of $34,483,877 (4.6%). An adjustment to recognize the higher rate case claim in this proceeding is necessary to avoid the pattern of over earning.

In the response to OCA 5-005, Attachment D shows that 12 projects have been delayed from the FTY to the FPFTY, 4 projects have been delayed from the FPFTY until 2024, and 1 project has been cancelled. The Company makes a number of statements that clearly suggest that its capital budget amounts are not firm. On page 2 of the response, Columbia states:

> Please note, for any New Business Project, much of the timing as to whether the project goes to construction is contingent on the customer and their readiness. This is a very fluid process.
>
> Also, for all the other Budget Classes, the current listing of projects identified within OCA 5-005 Attachment A is a dynamic roster that is subject to modification based on emerging conditions…

The point here is that, based on the Company's own information, it reasonable to question whether its projections will be achieved. In fact, as demonstrated in the chart above, the Company has consistently overestimated plant in service costs for each of the past three base rate cases. Thus, the data suggest that Columbia's capital budget is usually ambitious. This is not a criticism, because no one can forecast with 100 percent accuracy. However, with this knowledge, it is necessary to reflect an adjustment to recognize the pattern of overestimation that has been identified. Based upon the data in the table above, on average the actual capital additions is approximately 6.24 percent less than budgeted.[3] Therefore, my adjustment to plant in service will reflect a 6.24 percent reduction to the forecasted plant.

Q. WHAT IS YOUR RESPONSE TO THE COMPANY'S CLAIM THAT "JUST BECAUSE A PROJECT MIGHT HAVE A COMMIT DATE BEYOND 2023, DOES NOT MEAN THAT IT CANNOT BE A PART OF THE 2023 PLAN"?[4]

A. When viewed from the perspective of corporate budgeting, such a statement is valid because in order to spend, the funds should be approved. Also, from the standpoint of corporate budgeting, if the approved expenditures are not made, there is very little financial detriment because, as long as the project is still justified, it can be implemented in the following year.

However, from a ratemaking point of view, if forecasted costs are included in the cost of service, but not incurred, the Company will over-collect those costs, which are then converted into a windfall for shareholders. It is also important to note that because of the Company's historical tendency for budgeted amounts to exceed actuals, there already is a potential over-recover embedded in its plant in service claim. Specifically, there are numerous projects with a projected completion date of December 31, 2023. If the historical data is a guide, some of these projects will not be completed by December 31, 2023, but the costs will be included in rates. Given that there are already known delayed projects and one cancelled project, an adjustment is necessary to avoid an over-recovery of costs.

[3] $92,344,523 (sum of budget differences) / $1,480,071,673 (sum of projections) = 6.24%.
[4] Response to OCA 5-005

Q. DOES AN ADJUSTMENT TO RECOGNIZE THE 6.24 PERCENT DECREASE IN THE VALUE OF THE BUDGETED PLANT IN SERVICE RESULT IN A COST DISALLOWANCE?

A. No. Columbia has a practice of filing frequent rate cases. The Company will be able to include these costs in a future rate case assuming they are reasonable and prudent. As a result, there is not a significant risk that the Company will not be able recover its capital costs.

Q. PLEASE SUMMARIZE YOUR PLANT IN SERVICE ADJUSTMENT.

On Schedule LKM-5, I present my adjustment to Plant in Service which reduces rate base by $47,153,708.

Materials & Supplies and Prepayments

Q. PLEASE EXPLAIN YOUR ADJUSTMENT TO MATERIALS & SUPPLIES AND PREPAYMENTS.

A. For the FPFTY, Columbia determined the monthly balances for Materials & Supplies and Prepayments by escalating the previous year's balances by an inflation factor.

I disagree with the use of an inflationary escalation for these costs for several reasons. First, inflationary adjustments are not actually known and measurable cost changes because they are not the product of the Company's planned activities. Instead, inflation adjustments are typically broad estimates that are used in an instance where there cost changes are unknown. As a result, inflation escalation adjustments do not represent an integration or alignment of Columbia's operational, regulatory, and financial plans. Second, costs should be based upon evidence or documentation of activities that support the Company's adjustments. I do not believe this broad approach to increase these costs is reasonable.

On Schedule LKM-6, I present my adjustment to reduce Materials & Supplies by $49,094, and on Schedule LKM-7, I present my adjustment to reduce Prepayments by $269,071. These adjustments are necessary to avoid an overstatement of the amount included in rate base.

B. <u>Operating Expenses and Taxes Adjustments</u>

<u>Payroll Expense</u>

Q. PLEASE EXPLAIN YOUR ADJUSTMENT TO PAYROLL EXPENSE?

A. For the FPFTY, the Company made two adjustments to payroll expense as shown on Exhibit No. 104, Schedule No. 2, Page 1, lines 6 through 10. One adjustment was to reflect the wage rate increases to be granted during 2023 (the FPFTY) and the other was to annualize the effect of the FPFTY wage rate increase. In essence, the adjustment to annualize the wage rate increases that are expected to go into effect during the FPFTY are post-FPFTY costs. In other words, these are not costs that would be incurred during the FPFTY. Instead, they will be incurred during 2024.

I am recommending an adjustment to payroll expense to remove the post-FPFTY wage rate increases from the payroll expense that is included in the cost of service because the post-FPFTY costs are not eligible for recovery in this proceeding.

Q. WHY ARE THE POST-FPFTY COSTS NOT ELIGIBLE FOR RECOVERY IN THIS PROCEEDING?

A. The use of a fully projected future test year is intended to allow rates to be set to reflect the costs and revenues that will be incurred during the first year the new rates will be in effect. Columbia's wage increase adjustment attempts to include cost increases that will occur after the end of the test year – in this case, costs that will be incurred beyond

December 31, 2023. As a result, inclusion of these costs would violate the FPFTY concept.

In utility ratemaking, the test year serves as a hard cut-off point for cost recognition, otherwise the decision over what costs to include in the costs of service could become subjective and biased. It should be noted that under the use of the FPFTY, pursuant to Act 11 of 2012 (Act 11), the basis of the cost of service for utilities in Pennsylvania is to allow the costs that are expected to be incurred during the rate effective period. In the Implementation Order for Act 11, on page 5, the Commission states:

> Section 315 of the Code, 66 Pa. C.S. § 315, contains the burden of proof a utility has in various proceedings before the Commission. With the enactment of Act 11, the burden of proof standard for utilities in rate proceedings has been amended to permit use of either a future test year or a "fully-projected future test year" in rate cases. The fully-projected test year is defined as the 12-month period that begins with the first month that the new rates will be placed into effect, after application of the full suspension period permitted under Section 1308(d). *See* 66 Pa. C.S. § 1308(d). Under this approach, the risks associated with regulatory lag will be substantially reduced because the new rates will be consistent with the test year used to establish those rates for at least the first year.[5]

Columbia's post-FPFTY pay rate increase reaches out beyond the FPFTY to capture payroll costs as if they will be in effect for the entire FPFTY. The inclusion of the post-test year costs creates a mismatch with revenues and other expenses that are based on FPFTY.

Based on the foregoing, I am adjusting payroll expense to reflect a decrease of $451,694 on Schedule LKM-8. On this schedule, I also present the corresponding

[5] Implementation of Act 11 of 2012, Docket No. M-2012-2293611, Final Implementation Order (Aug. 2012)

adjustment to reduce payroll taxes by $32,964 since those costs are calculated as a percentage of payroll.

Incentive Compensation

Q. PLEASE DESCRIBE THE COMPANY'S INCENTIVE COMPENSATION PLANS.

A. NiSource Inc. and its affiliates offer two Cash-Based Awards Programs. Under one program, all exempt and non-exempt Employees of the Company and its Affiliates are eligible to participate. The other program is limited to employees who hold the title of Chief Executive Officer, Executive Vice President, Senior Vice President, President, Vice President or equivalent positions. These plans are administered by the Compensation Committee of the NiSource Board of Directors (Committee). It is important to note that the Committee has the discretion to determine the amount and whether it should make any payments under these plans. NiSource also has discretion to establish payment thresholds and the authority to determine whether thresholds that trigger payment of incentive compensation have been achieved and whether any adjustments need to be made in the determination of the earnings threshold to reflect unusual or nonrecurring events. NiSource also offers the Omnibus Incentive Plan. This plan permits the granting of options, stock appreciation rights ("SARs"), restricted stock, restricted stock units, performance shares, performance units, Cash-Based awards, and other stock-based awards.[6]

The two Cash-Based Awards Programs are governed by certain common performance measures and targets. For 2021 and 2022, the performance measures were Financial, Safety and Customer Satisfaction. Seventy percent (70%) of the Programs'

[6] See Columbia response to Standard Data Request Question No. GAS-RR-027.

payout is related to the achievement of a specific Net Operating Earnings per Share (NOEPS), ten percent (10%) related to Safety goals and twenty percent (20%) related to Customer Satisfaction and Perception. Regarding NiSource's Omnibus Incentive Plan, the Plan is designed to promote the achievement of both NiSource's short-term and long-term objectives by aligning compensation of participants with the interests of stockholders; enhancing the interest of participants in NiSource's growth and success; and attracting and retaining participants of outstanding competence.

Q. WHAT ADJUSTMENT ARE YOU RECOMMENDING TO THE INCENTIVE COMPENSATION EXPENSE?

A. The incentive compensation costs in the cost of service include amounts related to Columbia Gas of Pennsylvania, Inc. and NiSource Corporate Service Company (NCSC). I am recommending an adjustment to remove the portion of the incentive compensation that is related to achieving earnings goals from the cost of service. For the two Cash-Based Award Programs, 70 percent of payout is tied to achieving a NOEPS target. Therefore, I am removing 70 percent of the Cash-Based Award Programs costs that the Company included in the cost of service. I am also removing the amount related to the NiSource Omnibus Incentive Plan. The stated objective of that plan primarily concerns enhancing the interests of shareholders, so it is not appropriate to recover those costs from ratepayers through the cost of service.

Q. WHY IS IT APPROPRIATE TO REMOVE INCENTIVE COMPENSATION FROM THE COST OF SERVICE?

A. As indicated above, the adjustment I am recommending is to remove the portion of the incentive plan costs that are associated with earnings goals and enhancing shareholder value. These types of goals are targeted towards benefitting shareholders. Therefore, these costs are not properly recoverable from ratepayers because if the financial targets are set properly, after achieving the financial targets, the funds from which to pay incentive compensation would be available. In other words, the incentive plan should be self-funding. The purpose of an incentive plan is to provide a reward for achieving a goal that would not easily be attained absent the reward. In this instance, the goal is to achieve a specific income level. In my opinion, the targets of the plan should be established on the basis that if the financial target were not established as a goal to work towards, it would not be attained. Therefore, the NOEPS level established should be sufficient to cover the incentive compensation. Asking ratepayers to pay the incentive compensation for achieving the NOEPS is unfair and inappropriate because once the income level is attained, the shareholder retains the additional income. A rebate or reduction in rates is not given to the ratepayer. Consequently, paying the incentive compensation related to earnings does not serve the ratepayer's interest. In fact, in NiSource's Cash-Based Awards Program document, the Company agrees with this. The document states:

> The NOEPS measure is based on the Corporation's achievement of net operating earnings per share, after accounting for the cost of payments under the Program ("NOEPS"). The Corporation shall have full discretion and authority to determine whether this measure has been achieved and whether any adjustments shall be made in the calculation of NOEPS to reflect unusual or non-recurring events.[7]

My understanding of this section of the Cash-Based Award Program document is that the intent is for the plan to pay for itself. Consistent with that section of the plan document, the incentive plan costs should not be included in the cost of service.

[7] GAS-RR-027, Attachment B, Page 2 of 6, see "NOEPS Financial Measure".

Q. WHAT IS THE EFFECT OF YOUR ADJUSTMENT TO ELIMINATE INCENTIVE COMPENSATION PAYMENTS?

A. The adjustment to incentive compensation is presented on Schedules LKM-9. On this schedule, I present my adjustment which reduces O&M expenses by $6,949,000.

Additional Labor and Benefits

Q. WHAT ADJUSTMENT ARE YOU RECOMMENDING TO COLUMBIA'S ADDITIONAL LABOR AND BENEFITS CLAIM?

A. The Company explains that when the cost of service for this case was prepared, the Company was in labor negotiations with several unions. According to Columbia, subsequent to the filing of this case, it reached agreement with the unions to include an annual wage increase of fifty cents per hour in the FTY and the FPFTY, as well as the application of merit increases to the increase in FTY and FPFTY.[8]

According to the workpapers *****BEGIN CONFIDENTIAL***** [redacted]

[redacted]

[redacted] ***END CONFIDENTIAL***

With respect to the employee benefits and payroll taxes, I have modified the Company's claim based on the following reasons. First, I reduced the incentive plan amount consistent with my position that 70 percent of the incentive plan is related to corporate earnings goals. I also removed the 20 percent associated with the benefits to labor expense ratio. The benefits for the individuals for which the wage adjustment is being made has already been included in the cost of service. The 20 percent is a ratio of benefits to labor expense, and is a quick way to estimate benefits expense, usually for new employees. However, benefits are not tied to wages linearly. For example, the cost of medical insurance, or tuition benefits do not increase when wages rise. Given, that the employees in this instance are not new employees, the increase in their wages will not necessarily increase as their wage rates increase.

As a result of reflecting these changes, I am recommending an adjustment to decrease O&M expenses by $730,425 as shown on Schedule LKM-10.

<u>Outside Services Expense</u>

Q. WHAT ADJUSTMENT ARE YOU RECOMMENDING TO OUTSIDE SERVICES EXPENSE?

A. The Company indicates that the Outside Services expense that is included in the cost of service was determined based upon the historical spend that was escalated by inflation. The increase in Outside Services between HTY and FTY of $3,398,969 is primarily driven by using an inflation factor of 3 percent between the two periods and the increase between FTY and FPFTY of $1,110,056 is primarily driven by using an inflation factor of 3 percent between the two periods.[9] In this instance the 3 percent inflation rate is being used as a proxy for determining the FPFTY O&M expenses rather than actual planned or scheduled activities for the FPFTY.

I disagree with the use of the 3.0 percent inflation rate for determining the FPFTY Outside Services expense. Inflationary adjustments are not actually known and measurable costs because they are not the product of the Company's planned activities. Instead, inflation adjustments are typically broad estimates that are used in an instance

[9] Response to IE-RE-21 and 22.

where there cost changes are unknown. As a result, inflation escalation adjustments do not represent an integration or alignment of Columbia's operational, regulatory, and financial plans because they are not specific to the Company, nor do they reflect planned activities. Costs should be based upon evidence or documentation of activities that support the Company's adjustments. I do not believe the determination of expenses for the FPFTY was envisioned to be simply applying an inflation rate to expenses.

§ 315 (e) of the Pennsylvania code addresses the burden of proof. It states:

> ...Whenever a utility utilizes a future test year or a fully projected future test year in any rate proceeding and such future test year or a fully projected test year forms a substantive basis for the final rate determination of the commission, the utility shall provide, as specified by the commission in its final order, appropriate data evidencing the accuracy of the estimates contained in the future test year or a fully projected future test year, and the commission may after reasonable notice and hearing, in its discretion, adjust the utility's rates on the basis of such data. Notwithstanding section 1315 (relating to limitation on consideration of certain costs for electric utilities), the commission may permit facilities which are projected to be in service during the fully projected future test year to be included in the rate base.

It is clear from reading § 315 (e) that the accuracy and the reasonableness of the projections is expected. This means that projections should be based upon actual planned activities using the best cost estimates available. Escalating the historical amounts by an inflation factor is not a method of cost projection for ratemaking because it bears no relationship to the activities planned for the rate year.

On Schedule LKM-11, I am recommending an adjustment to decrease O&M expense by $2,414,867 to remove the effect of inflation on Outside Services from the cost of service.

Strategic O&M Safety Initiatives

Q. PLEASE SUMMARIZE THE ELEMENTS OF THE COMPANY'S STRATEGIC O&M SAFETY INITIATIVES ADJUSTMENTS.

A. The Company presents several adjustments that it characterizes as safety initiatives. The Company admits that these costs are not included in the budgets.[10] Considering that projects or initiatives that have been included in the budget are approved for expenditure to begin, it is fair to say that the Strategic O&M Safety Initiatives have not yet been approved, at least not for the FPFTY.

The Company is proposing to include costs of $14,895,000 for the following initiatives in the cost of service:

- Additional O&M Expense of $2,700,000 for Cross Bores Inspection
- Additional O&M Expense of $600,000 for Abnormal Operating Conditions Remediation
- Additional O&M Expense of $10,900,000 for the Picarro Leak Detection Program
- Additional O&M Expense of $417,000 for Additional Safety Positions
- Additional O&M Expense of $13,000 for Natural Gas Methane Gas Detectors
- Additional O&M Expense of $265,000 for Blackline Safety Devices

The Cross Bore Program began in September 2013, as a result of identifying cross bores as a potential risk in Columbia's Distribution Integrity Management Program (DIMP) plan. The Company states that this program is currently on pace to be completed in 31 years. It proposes to accelerate the program's pace to be completed in 16 years by seeking $2,700,000 in the cost of service.

[10] Columbia Statement No. 14, beginning at Page 26, line 17.

For the Abnormal Operating Condition (AOC) Remediation Program, the Company states that the program is designed to proactively address identified AOCs across Columbia's system. An AOC is a condition identified by the operator that may indicate a malfunction of a component or deviation from normal operations that may indicate a condition exceeding design limit, or result in a hazard to persons, property, or the environment.

The Picarro Leak Detection Program is a system designed to enhance the process of leak detection and to refine the prioritization of repairs and replacements for its natural gas distribution system. According to the Company, use of the Picarro Leak Detection System will serve to advance the Company's leak detection capabilities, as Columbia shifts compliance leak survey from traditional walking leakage inspection to advanced mobile leak detection. NiSource conducted a pilot of the Picarro technology in 2021.[11] The Company states that it implemented a webpage to inform customers about Picarro in 2021.[12] Yet, the Company's expenses to implement the Picarro program are projected to occur in the FPFTY.[13]

Regarding the Additional Safety Staffing Increase, Columbia explains that increased safety resources will result in strengthening safety programs and initiatives and better enable Columbia to focus on hazard identification and mitigation in the field.

According to Columbia's Natural Gas Detectors for Home Use Program, the natural gas detectors are battery powered devices that allow for placement at higher elevations within the home to provide earlier and more accurate warnings. When a

[11] Company Response to OSBA-1-13
[12] Company St. No. 1, Mark Kempic Direct at 42; Company Response to OCA-9-12, Att. A, p. 3 (Columbia Jan. 2022 report to PUC).
[13] Company Exh. No. 14, Sch. No. 2, p. 18, li. 6

dangerous threshold of natural gas is reached, it sounds an 85db alarm. Columbia intends to provide 200-250 detectors at no cost during low-income home audits in 2023.

Regarding Columbia's Blackline Safety Devices Program, Columbia Gas states that it plans to deploy the Blackline device to all frontline workers in the third quarter of 2022. The Blackline device is a wearable personal safety monitor that provides an extra layer of protection for employees. [14]

Q. WHAT ADJUSTMENT ARE YOU RECOMMENDING TO STRATEGIC O&M SAFETY INITIATIVES?

A. I am recommending an adjustment to remove the additional costs included in the cost of service for the Cross Bores Inspection, the Abnormal Operating Conditions Remediation, and the Picarro Leak Detection Program. The costs of these initiatives are significant, particularly the Cross Bores Inspection and the Picarro Leak Detection Program and would typically have to be justified and approved by management before expenditures would begin. Despite the request to produce such documents, the Company has failed to adequately show justification or management approval of these initiatives. For the Cross Bore Program, the Company was specifically asked to provide all studies, analysis and other documentation submitted to the Company's management to approve changing the program completion to 16 years. No corporate documents were provided showing approval of the accelerated period or the justification for change to 16 years.[15] The only documentation that was provided appeared to be industry journals. In fact, when asked to explain why the 16-year target was chosen, the Company stated:

> Cross bores have been identified as a high risk within Columbia's DIMP evaluations. The proposal to complete the Cross Bore program

[14] Response to I&E RE-73-D.
[15] Response to OCA-8-001.

in 16 years was based on the associated risk along with Columbia's ability to accelerate and manage its program.[16]

In other words, the decision does not appear to be data driven nor does it appear to incorporate any financial analysis to determine if the 16-year period is reasonable.

Similarly, for the Picarro Leak Detection Program, despite the $10,900,000 cost in the FPFTY, the Company offers no documentation to show that the Company's management has approved this expenditure. When asked to provide the purpose and justification document(s) including all studies, analysis and other documentation submitted to the Company's management for approval of the incremental funding of $10,900,000,[17] Columbia referred to an OSBA data request response in which the Company stated that return-on-investment analysis has not been completed for the Picarro Leak Detection Program.[18] The Attachment to that response is only a cost summary, not a purpose and justification document for management's approval of the $10,900,000

Given the significant level of costs, it would be inappropriate to include the costs without a showing that these costs have been approved and a full understanding of the cost estimates. Therefore, on Schedule LKM-12, I have removed the total cost of $14,200,000 from the cost of service.

<u>Interest Synchronization</u>

Q. PLEASE EXPLAIN YOUR INTEREST SYNCHRONIZATION ADJUSTMENT.

A. To determine the tax deductible interest expense for ratemaking, I have multiplied the OCA's recommended rate base by the weighted cost of debt included in the capital

[16] <u>Id.</u>
[17] See the Response to OCA-8-006.
[18] Response to OSBA 01-013.

structure recommended by OCA witness Garrett. This procedure synchronizes the interest expense deduction for tax purposes with the interest component of the return on rate base to be recovered from ratepayers. As shown at the bottom of Schedule LKM-13, this adjustment increases the interest expense deduction by $5,750,203 to a total of $64,620,274 compared to the interest deduction of $58,870,071 calculated by Columbia. This decreases state and federal income taxes by $574,445 and $1,086,909, respectively.

Q. PLEASE SUMMARIZE YOUR RECOMMENDATION.

A. In this proceeding, Columbia sought an increase in base rates of $82,151,953. As a result of my examination of Columbia's filing and the discovery responses, I have recommended several adjustments to the Company's rate base and operating income. I have also incorporated the findings of OCA witness Garrett with regard to the capital structure and rate of return. Below is a table that provides a reconciliation of the Company's requested increase and the OCA's recommended decrease to revenues.

Columbia Gas of Pennsylvania Reconciliation of Company Increase to OCA Decrease	
Company Requested Increase in Revenues	$ 82,151,955
OCA Adjustments:	
Change in ROE	(56,034,549)
Change in Capital Structure	(12,068,570)
Adjustment to Plant	(5,178,303)
Adjustment to Materials & Supplies	(4,118)
Adjustment to Prepayments	(22,564)
Adjustment to Annualize Payroll Expense	(490,813)
Adjustment to Incentive Compensation Expense	(7,037,249)
Adjustment to Reflect Additional Labor & Benefits	(739,701)
Adjustment to Outside Services Expense	(2,445,534)
Adjustment to Strategic Initiatives Expense	(14,380,333)
Total OCA Adjustments	(98,401,734)
OCA Recommended Decrease in Revenues	$ (16,249,779)

Q. DOES THIS COMPLETE YOUR DIRECT TESTIMONY?

A. Yes, it does.

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	)	
	)	
v.	)	Docket No. R-2022-3031211
	)	
Columbia Gas of Pennsylvania, Inc.	)	

SCHEDULES ACCOMPANYING THE
DIRECT TESTIMONY

OF

LAFAYETTE K. MORGAN, JR.

ON BEHALF OF THE

OFFICE OF CONSUMER ADVOCATE

June 7, 2022

EXETER
ASSOCIATES, INC.
10480 Little Patuxent Parkway, Suite 300
Columbia, Maryland 21044

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	)	
	)	
v.	)	Docket No. R-2022-3031211
	)	
Columbia Gas of Pennsylvania, Inc.		

Appendix A

LAFAYETTE K. MORGAN, JR.

Mr. Morgan is an independent regulatory consultant focusing in the area of the analysis of the operations of public utilities with particular emphasis on rate regulation. He has reviewed and analyzed utility rate filings, focusing primarily on revenue requirements determination, accounting and regulatory policy and cost recovery mechanisms. This work has included natural gas, water, electric, and telephone utilities.

<u>Education and Qualifications</u>

B.B.A. (Accounting) – North Carolina Central University, 1983

M.B.A. (Finance) – The George Washington University, 1993

C.P.A. – Licensed in the State of North Carolina (Inactive status)

<u>Previous Employment</u>

1993-2010	Senior Regulatory Analyst Exeter Associates, Inc. Columbia, MD
1990-1993	Senior Financial Analyst Potomac Electric Power Company Washington, D.C.
1984-1990	Staff Accountant North Carolina Utilities Commission – Public Staff Raleigh, NC

<u>Professional Experience</u>

As a Staff Accountant with the North Carolina Utilities Commission – Public Staff, Mr. Morgan was responsible for analyzing testimony, exhibits, and other data presented by parties before the Commission. In addition, he performed examinations of the books and records of utilities involved in rate proceedings and summarized the results into testimony and exhibits for presentation before the Commission. Mr. Morgan also participated in several policy proceedings and audits involving regulated utilities.

As a Senior Financial Analyst with Potomac Electric Power Company, Mr. Morgan was a lead analyst and was involved in the preparation of the cost of service, rate base, and ratemaking adjustments supporting the Company's request for revenue increases in its retail jurisdictions.

As a Senior Regulatory Analyst with Exeter Associates, Inc., Mr. Morgan has been involved in the analysis of the operations of public utilities with particular emphasis on rate regulation. He has reviewed and analyzed utility rate filings, focusing primarily on revenue requirements determination, accounting and regulatory policy and cost recovery mechanisms. This work included natural gas, water, electric, and telephone utilities.

Expert Testimony

of Lafayette K. Morgan, Jr.

Kings Grant Water Company (North Carolina Utilities Commission, Docket No. W-250, Sub 5), 1984. Presented testimony on rate base, cost of service, and revenue and expense adjustments on behalf of the North Carolina Utilities Commission – Public Staff.

Northwood Water Company (North Carolina Utilities Commission, Docket No. W-690, Sub 1), 1985. Presented testimony on rate base, cost of service, and revenue and expense adjustments on behalf of the North Carolina Utilities Commission – Public Staff.

Emerald Village Water System (North Carolina Utilities Commission, Docket No. W-184, Sub 3), 1985. Presented testimony on rate base, cost of service, and revenue and expense adjustments on behalf of the North Carolina Utilities Commission – Public Staff.

General Telephone Company of the South (North Carolina Utilities Commission, Docket No. P-19, Sub 207), July 1986. Presented testimony on the level of cash working capital allowance on behalf of the North Carolina Utilities Commission – Public Staff.

Heins Telephone Company (North Carolina Utilities Commission, Docket No. P-26, Sub 93), November 1986. Presented testimony on rate base, cost of service, and revenue and expense adjustments on behalf of the North Carolina Utilities Commission – Public Staff.

Carolina Power and Light Company (North Carolina Utilities Commission, Docket No. E-2, Sub 537), March 1988. Presented testimony on rate base, cost of service, and revenue and expense adjustments on behalf of the North Carolina Utilities Commission – Public Staff.

Public Service Company of North Carolina, Inc. (North Carolina Utilities Commission, Docket No. G-5, Sub 246), August 1989. Presented testimony on rate base, cash working capital allowance, cost of service, and revenue and expense adjustments on behalf of the North Carolina Utilities Commission – Public Staff.

Conestoga Telephone and Telegraph Company (Pennsylvania Public Utility Commission, Docket No. I-00920015), September 1993. Presented testimony on cost of service on behalf of the Pennsylvania Office of Consumer Advocate.

Louisiana Power and Light Company (Louisiana Public Service Commission, Docket No. U-20925), February 1995. Presented testimony on rate base and working capital issues on behalf of the Louisiana Public Service Commission Staff.

South Central Bell Telephone Company – Louisiana (Louisiana Public Service Commission, Docket No. U-17949, Subdocket E), June 1995. Presented testimony on rate base and working capital issues on behalf of the Louisiana Public Service Commission Staff.

Expert Testimony

of Lafayette K. Morgan, Jr.

Apollo Gas Company (Pennsylvania Public Utility Commission, Docket No. R-00953378), August 1995. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

Carnegie Natural Gas Company (Pennsylvania Public Utility Commission, Docket No. R-00953379), August 1995. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

Tennessee Gas Pipeline Company (Federal Energy Regulatory Commission, Docket No. RP95-112), September 1995. Presented testimony rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

Virginia-American Water Company (Virginia State Corporation Commission, Case No. PUE-950003), March 1996. Presented testimony on rate base and cost of service issues on behalf of the City of Alexandria.

GTE North, Inc. Interconnection Arbitration (Pennsylvania Public Utility Commission, Docket No. A-310125F0002), September 1996. Presented testimony on the determination of the appropriate resale discount on behalf of the Pennsylvania Office of Consumer Advocate.

United Cities Gas Company (Georgia Public Service Commission, Docket No. 6691-U), October 1996. Presented testimony on rate base and cost of service issues on behalf of the Office of Governor, Consumer Utility Counsel Division.

GTE North, Inc. (Pennsylvania Public Utility Commission, Docket Nos. R-00963666 and R-00963666C001), February 1997. Presented testimony on the determination of the appropriate resale discount on behalf of the Pennsylvania Office of Consumer Advocate.

Consumers Maine Water Company (Maine Public Utilities Commission, Docket No. 96-739), May 1997. Presented testimony on rate base, cost of service, and rate of return issues on behalf of the Maine Office of the Public Advocate.

Pennsylvania-American Water Company (Pennsylvania Public Utility Commission, Docket No. R-00973944), July 1997. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

Pennsylvania-American Water Company – Wastewater Operations (Pennsylvania Public Utility Commission, Docket No. R-00973973), July 1997. Presented testimony on rate base, cost of service, depreciation, and rate design issues on behalf of the Pennsylvania Office of Consumer Advocate.

Expert Testimony

of Lafayette K. Morgan, Jr.

Jackson Purchase Electric Cooperative Corporation (Kentucky Public Service Commission, Case No. 97-224), December 1997. Presented testimony on rate base and cost of service issues on behalf of the Kentucky Office of the Attorney General.

Henderson Union Electric Cooperative Corporation (Kentucky Public Service Commission, Case No. 97-220), January 1998. Presented testimony on the return of patronage capital on behalf of the Kentucky Office of the Attorney General.

Green River Electric Corporation (Kentucky Public Service Commission, Case No. 97-219), January 1998. Presented testimony on the return of patronage capital on behalf of the Kentucky Office of the Attorney General.

Western Kentucky Gas Company (Kentucky Public Service Commission, Case No. 99-070), November 1999. Presented testimony on rate base and cost of service issues on behalf of the Kentucky Office of the Attorney General.

American Broadband, Inc. (Rhode Island Public Utilities Commission, Docket No. 2000-C-3), June 2000. Presented report and testimony on the Company's financing plan on behalf of the Rhode Island Division of Public Utilities and Carriers.

PPL Utilities (Pennsylvania Public Utility Commission, Docket No. R-00005277), October 2000. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

T.W. Phillips Oil and Gas Company (Pennsylvania Public Utility Commission, Docket No. R-00005459), October 2000. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

Pike County Light & Power Company (Pennsylvania Public Utility Commission, Docket No. P-00011872), May 2001. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

Vermont Gas Systems, Inc. (Vermont Public Service Board, Docket No. 6495), June 2001. Presented testimony on rate base and cost of service issues on behalf of the Vermont Public Service Department.

Community Service Telephone Company (Maine Public Utilities Commission, Docket No. 2001-249), July 2001. Presented joint testimony on rate base and cost of service issues on behalf of the Maine Office of the Public Advocate.

Expert Testimony

of Lafayette K. Morgan, Jr.

West Virginia-American Water Company (Public Service Commission of West Virginia, Docket No. 01-0326-W-42-T), August 2001. Presented testimony on rate base and cost of service issues on behalf of the Consumer Advocate Division.

Philadelphia Suburban Water Company (Pennsylvania Public Utility Commission, Docket No. R-00016750) February 2002. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

Illinois-American Water Company (Illinois Commerce Commission, Docket No. 02-0690) January 2003. Presented testimony on cost of service issues on behalf of Citizens Utility Board.

Pennsylvania-American Water Company (Pennsylvania Public Utility Commission, Docket No. R-00027983), February 2003. Presented testimony addressing surcharge mechanism to recover security costs on behalf of the Pennsylvania Office of Consumer Advocate.

FairPoint New England Telephone Companies (Maine Public Utilities Commission, Docket Nos. 2002-747, 2003-34, 2003-35, 2003-36, and 2003-37), June 2003. Presented testimony on rate base and cost of service issues on behalf of the Maine Office of the Consumer Advocate.

Pennsylvania-American Water Company (Pennsylvania Public Utility Commission, Docket No. R-00038304), August 2003. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

PPL Electric Utilities Corporation (Pennsylvania Public Utility Commission, Docket No. R-00049255), June 2004. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

Entergy Louisiana, Inc. (Louisiana Public Service Commission, Docket No. U-20925 RRF 2004), August 2004. Presented testimony on rate base and cost of service issues on behalf of the Louisiana Public Service Commission Staff.

Vectren Energy Delivery of Indiana (Indiana Utility Regulatory Commission, Cause No. 42598), September 2004. Presented testimony on O&M expense issues on behalf of the Indiana Office of Utility Consumer Counselor.

National Fuel Gas Distribution Corporation (Pennsylvania Public Utility Commission, Docket No. R-00049656), December 2004. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

Expert Testimony

of Lafayette K. Morgan, Jr.

Block Island Power Company (Rhode Island Public Utilities Commission, Docket No. 3655), April 2005. Presented testimony on cash working capital on behalf of the Rhode Island Division of Public Utilities & Carriers.

Verizon New England, Inc. (Maine Public Utilities Commission, Docket No. 2005-155), September 2005. Presented joint testimony with Thomas S. Catlin on rate base and cost of service issues on behalf of the Maine Office of the Public Advocate.

T.W. Phillips Oil and Gas Company (Pennsylvania Public Utility Commission, Docket No. R-00051178), May 2006. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

Duquesne Light Company (Pennsylvania Public Utility Commission, Docket No. R-00061346), July 2006. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

National Fuel Gas Distribution Company (Pennsylvania Public Utility Commission, Docket No. R-00061493), September 2006. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

Southern Indiana Gas & Electric Co. (Indiana Utility Regulatory Commission, Cause No. 43112), January 2007. Presented testimony on rate base and cost of service issues on behalf of the Indiana Office of Utility Consumer Counsel.

PPL Electric Utilities (Pennsylvania Public Utility Commission, Docket No. R-00072155), July 2007. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

Aqua Pennsylvania, Inc. (Pennsylvania Public Utility Commission, Docket No. R-00072711), February 2008. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

Equitable Gas Company (Pennsylvania Public Utility Commission, Docket No. R-2008-2029325), October 2008. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

The Narragansett Bay Commission (Rhode Island Public Utilities Commission, Docket No. 4026), April 2009. Presented testimony on rate base and cost of service issues on behalf of the Rhode Island Division of Public Utilities and Carriers.

Expert Testimony

of Lafayette K. Morgan, Jr.

Maryland-American Water Company (Maryland Public Service Commission, Case No. 9187), July 2009. Presented testimony on rate base and cost of service issues on behalf of the Maryland Office of People's Counsel.

Monongahela Power Company & The Potomac Edison Company, both d/b/a Allegheny Power Company (West Virginia Public Service Commission, Case No. 09-1352-E-42T), February 2010. Presented testimony on rate base and cost of service issues on behalf of the West Virginia Consumer Advocate Division.

PPL Electric Utilities (Pennsylvania Public Utility Commission, Docket No. R-2010-2161694), June 2010. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

Pawtucket Water Supply Board (Rhode Island Public Utilities Commission, Docket No. 4550), June 2015. Presented testimony on revenue requirements issues on behalf of the Rhode Island Division of Public Utilities and Carriers.

Columbia Gas of Pennsylvania (Pennsylvania Public Utility Commission, Docket No. R-2015-2468056), June 2015. Presented testimony on rate base and cost of service issues on behalf of the Pennsylvania Office of Consumer Advocate.

Indianapolis Power and Light Company (Indiana Utility Regulatory Commission, Cause No. 44576/44602), July 2015. Presented testimony on revenue requirements issues on behalf of the Indiana Office of Utility Consumer Counselor.

Public Service Company of Oklahoma (Corporation Commission of Oklahoma, Cause No. PUD 201500208), October 2015. Presented testimony on revenue requirements and environmental compliance rider issues on behalf of the United States Department of Defense and the Federal Executive Agencies.

Northern Indiana Public Service Company (Indiana Utility Regulatory Commission, Cause No. 44688), January 2016. Presented testimony on the company's electric division operating revenues, operating expenses and income taxes issues on behalf of the Indiana Office of Utility Consumer Counselor.

Philadelphia Water Department (Philadelphia Water, Sewer And Storm Water Rate Board, FY2017-2018 Rate Proceeding), March 2016. Presented testimony on revenue requirements issues on behalf of the Public Advocate.

Columbia Gas of Maryland (Public Service Commission of Maryland, Case No. 9417), June 2016. Presented testimony on rate base and cost of service issues on behalf of the Office of People's Counsel.

Expert Testimony

of Lafayette K. Morgan, Jr.

Chesapeake Utilities Corporation (Delaware Public Service Commission, PSC Docket No. 15-1734), August 2016. Presented testimony on rate base and cost of service issues on behalf of the Staff of the Delaware Public Service Commission.

Kent County Water Authority (Public Service Commission of Rhode Island, Docket No. 4611), September 2016. Presented testimony on rate base and cost of service issues on behalf of the Division of Public Utilities and Carriers.

Northern Utilities, Inc. (Maine Public Utilities Commission, Docket No. 2017-00065), August 2017. Assisted the Maine Office of Public Advocate (OPA) with Northern Utilities application for an increase in rates. Mr. Morgan provided testimony, on behalf of the OPA, on accounting issues including test year revenue requirements, the utility's request to renew and modify its alternative rate plan, and its Targeted Infrastructure Replacement Adjustment.

Indiana Michigan Power Company (Indiana Utility Regulatory Commission, Cause No. 44967), November 2017. Presented testimony on rate base, operating revenues and operating expenses issues on behalf of the Indiana Office of Utility Consumer Counselor.

Emera Maine (Maine Public Utilities Commission, Docket No. 2017-00198), December 2017. Assisted the Maine Office of Public Advocate (OPA) with Emera Maine's application for an increase in rates. Mr. Morgan provided testimony, on behalf of the OPA, on accounting issues including test year revenue requirements, the utility's request to reflect the changes brought about by the Tax Change and Jobs Act of 2017.

UGI-Electric (Pennsylvania Public Utility Commission, Docket No. R-2017-2640058), April 2018. Assisted the Pennsylvania Office of Consumer Advocate (OCA) with UGI-Electric's application for an increase in rates. Mr. Morgan provided testimony, on behalf of the OCA, on accounting issues including test year revenue requirements, the utility's request to reflect the changes brought about by the Tax Change and Jobs Act of 2017.

Philadelphia Water Department (Philadelphia Water, Sewer And Storm Water Rate Board, FY2019-2020 Rate Proceeding), April 2018. Presented testimony on revenue requirements and the Department's three-year rate plan issues on behalf of the Public Advocate.

Westar Energy, Inc. (Westar Energy) and Kansas Gas and Electric Company (KGE), (Kansas State Corporation Commission, Docket No. 18-WSEE-328-RTS), May 2018. Presented testimony on revenue requirements on behalf on behalf of the Federal Executive Agencies.

Expert Testimony

of Lafayette K. Morgan, Jr.

Duquesne Light Company (Pennsylvania Public Utility Commission, Docket No. R-2018-3000124), June 2018. Assisted the Pennsylvania Office of Consumer Advocate (OCA) with UGI-Electric's application for an increase in rates. Presented testimony, on behalf of the OCA, on accounting issues including test year revenue requirements, the utility's request to reflect the changes brought about by the Tax Change and Jobs Act of 2017.

Bangor Natural Gas Company (Maine Public Utilities Commission, Docket No. 2018-00007), June 2018. Assisted the Maine Office of Public Advocate (OPA) Presented testimony, on behalf of the OPA, on the changes brought about by the Tax Change and Jobs Act of 2017.

SUEZ Water Pennsylvania, Inc. (Pennsylvania Public Utility Commission, R-2018-3000834), July 2018. Assisted the Pennsylvania Office of Consumer Advocate (OCA) with SUEZ Water's application for an increase in rates. Presented testimony, on behalf of the OCA, on accounting issues including Rate Base, Operating Income, Inclusion of Costs Related to Expansion Territories and the utility's request to reflect the changes brought about by the Tax Change and Jobs Act of 2017.

Woonsocket Water Division (Public Service Commission of Rhode Island, Docket No. 4879), January 2019. Presented testimony on cost of service issues on behalf of the Division of Public Utilities and Carriers.

Central Maine Power Company (Maine Public Utilities Commission, Docket No. 2018-00194), January 2019. Assisted the Maine Office of Public Advocate (OPA) with Central Maine Power's application for an increase in rates. Mr. Morgan provided testimony, on behalf of the OPA, on accounting issues including test year revenue requirements, the utility's request to reflect the changes brought about by the Tax Change and Jobs Act of 2017.

Newport Water Department (Public Service Commission of Rhode Island, Docket No. 4933), July 2019. Presented testimony on cost of service issues on behalf of the Division of Public Utilities and Carriers.

UGI-Gas (Pennsylvania Public Utility Commission, Docket No. R-2018-3006814), April 2019. Assisted the Pennsylvania Office of Consumer Advocate (OCA) with UGI-Gas' application for an increase in rates. Mr. Morgan provided testimony, on behalf of the OCA, on accounting issues including Rate Base and Net Operating Income.

Columbia Gas of Maryland (Public Service Commission of Maryland, Case No. 9609), August 2019. Presented testimony on rate base and cost of service issues on behalf of the Office of People's Counsel.

Expert Testimony

of Lafayette K. Morgan, Jr.

Public Service Company of Colorado (Colorado Public Utility Commission, Proceeding No. 19AL-0268E), September 2019. Mr. Morgan provided testimony, on behalf of the Department of Energy and the Federal Executive Agencies, on accounting issues including test year revenue requirements, Rate Base and Net Operating Income.

Northern Utilities, Inc. (Maine Public Utilities Commission, Docket No. 2019-00092), September 2019. Assisted the Maine Office of Public Advocate (OPA) with Northern Utilities application for an increase in rates. Mr. Morgan provided testimony, on behalf of the OPA, on accounting issues including test year revenue requirements and the utility's request to institute a Capital Investment Recovery Mechanism.

Citizens' Electric Company of Lewisburg (Pennsylvania Public Utility Commission, Docket No. R-2019-3008212), October 2019. Provided testimony on Plant in Service, Construction Work in Progress, Materials and Supplies, Customer Deposits, Depreciation Expense, Growth Factor, and The Tax Cuts and Jobs Act. Mr. Morgan provided testimony, on behalf of the Pennsylvania Office of Consumer Advocate (OCA).

Valley Energy, Inc. (Pennsylvania Public Utility Commission, Docket No. R-2019-3008209), October 2019. Provided testimony on Plant in Service, Construction Work in Progress, Materials and Supplies, Customer Deposits, Depreciation Expense, Growth Factor, and The Tax Cuts and Jobs Act. Mr. Morgan provided testimony, on behalf of the Pennsylvania Office of Consumer Advocate (OCA).

Wellsboro Electric Company (Pennsylvania Public Utility Commission, Docket No. R-2019-3008208), October 2019. Provided testimony on Plant in Service, Construction Work in Progress, Materials and Supplies, Customer Deposits, Depreciation Expense, Growth Factor, and The Tax Cuts and Jobs Act. Mr. Morgan provided testimony, on behalf of the Pennsylvania Office of Consumer Advocate (OCA).

Blue Granite Water Company (Public Service Commission of South Carolina, (Docket No. 2019-290-WS), January 2020. Assisted the South Carolina Department of Consumer Affairs. Presented testimony on accounting policy issues including test year revenue requirements.

UGI-Gas (Pennsylvania Public Utility Commission, Docket No. R-2019-3015162), May 2020. Assisted the Pennsylvania Office of Consumer Advocate (OCA) with UGI-Gas' application for an increase in rates. Mr. Morgan provided testimony, on behalf of the OCA, on accounting issues including Rate Base and Net Operating Income.

Columbia Gas of Maryland (Public Service Commission of Maryland, Case No. 9644), July 2020. Presented testimony on rate base and cost of service issues on behalf of the Office of People's Counsel.

Expert Testimony

of Lafayette K. Morgan, Jr.

PECO Energy Company - Gas Division (Pennsylvania Public Utility Commission, Docket No. R-2020-3018929), December 2020. Assisted the Pennsylvania Office of Consumer Advocate (OCA) with PECO-Gas' application for an increase in rates. Mr. Morgan provided testimony, on behalf of the OCA, on accounting issues including Rate Base and Net Operating Income.

Philadelphia Water Department (Philadelphia Water, Sewer And Storm Water Rate Board, Fiscal Years 2022 - 2023 Rates Proceeding), March 2021. Presented testimony on revenue requirements and the Department's three-year rate plan issues on behalf of the Public Advocate.

Versant Maine (Maine Public Utilities Commission, Docket No. 2020-00316), April 2021. Assisted the Maine Office of Public Advocate (OPA) with Emera Maine's application for an increase in rates. Mr. Morgan provided testimony, on behalf of the OPA, on accounting issues including test year revenue requirements.

Maine Water Company (Maine Public Utilities Commission, Docket No. 2021-00053), April 2021. Assisted the Maine Office of Public Advocate (OPA) with Maine Water Company's Request for Approval of Rate Increase and Rate Smoothing Mechanism Pertaining to The Maine Water Company Biddeford & Saco Division. Mr. Morgan provided testimony, on the authorization of the Rate Smoothing Mechanism.

UGI-Electric (Pennsylvania Public Utility Commission, Docket No. R-2021-3023618), May 2021. Assisted the Pennsylvania Office of Consumer Advocate (OCA) with UGI-Electric's application for an increase in rates. Mr. Morgan provided testimony, on behalf of the OCA, on accounting issues including Rate Base and Net Operating Income.

Bangor Natural Gas Company (Maine Public Utilities Commission, Docket No. 2021-00024), June 2021. Assisted the Maine Office of Public Advocate (OPA) with Bangor Natural Gas' application for an increase in rates. Mr. Morgan provided testimony, on behalf of the OPA, on accounting issues including test year revenue requirements.

Philadelphia Gas Works (Philadelphia Gas Commission, Fiscal Years 2021 - 2022 Operating Budget Proceeding), June 2021. Presented testimony on the reasonableness of the Fiscal Year 2022 Operating Budget on behalf of the Public Advocate.

Duquesne Light Company (Pennsylvania Public Utility Commission, Docket No. R-2021-3024750), June 2021. Assisted the Pennsylvania Office of Consumer Advocate (OCA) with UGI-Electric's application for an increase in rates. Presented testimony, on behalf of the OCA, on accounting issues including test year revenue requirements.

Expert Testimony

of Lafayette K. Morgan, Jr.

Columbia Gas of Maryland (Public Service Commission of Maryland, Case No. 9664), July 2021. Presented testimony on rate base and cost of service issues on behalf of the Office of People's Counsel.

Palmetto Wastewater Reclamation, Inc. (Public Service Commission of South Carolina, (Docket No. 2021-153-S), September 2021. Assisted the South Carolina Department of Consumer Affairs. Presented testimony on accounting policy issues including test year revenue requirements.

Maine Water Company (Maine Public Utilities Commission, Docket No. 2021-00289), November 2021. Assisted the Maine Office of Public Advocate (OPA) with Maine Water Company's application for an increase in rates. Mr. Morgan provided testimony, on behalf of the OPA, on accounting issues including test year revenue requirements.

City of Lancaster – Water Department (Pennsylvania Public Utility Commission, Docket No. R-2021-3026682), December 2021. Assisted the Pennsylvania Office of Consumer Advocate (OCA) with the City of Lancaster – Water Department's application for an increase in rates. Presented testimony, on behalf of the OCA, on accounting issues including test year revenue requirements.

Maryland Water Service (Public Service Commission of Maryland, Case No. 9671), January 2022. Presented testimony on rate base and cost of service issues on behalf of the Office of People's Counsel.

Commonwealth Edison Company (Illinois Commerce Commission, ICC Docket No. 21-0607 & ICC Docket No. 21-0739 (consolidated)), February 2022. Provided testimony related to the review and evaluation of the rate effects of Commonwealth Edison's misconduct admitted in the Deferred Prosecution Agreement between the United States Attorney for the Northern District of Illinois and Commonwealth Edison. Provided testimony on behalf of the Office of the Illinois Attorney General, the City of Chicago, and the Citizens Utility Board.

Philadelphia Gas Works (Philadelphia Gas Commission, Fiscal Years 2022 - 2023 Capital Budget Proceeding), February 2022. Presented testimony proposing several adjustments to Philadelphia Gas Works' Fiscal Year 2023 Capital Budget on behalf of the Public Advocate.

Philadelphia Water Department (Philadelphia Water, Sewer And Storm Water Rate Board, 2022 Tiered Assistance Program Rate Rider Surcharge Rates Proceeding), March 2022. Presented testimony regarding the appropriate adjustments to the 2022 TAP-R determination. Presented testimony on behalf of the Public Advocate.

Expert Testimony

of Lafayette K. Morgan, Jr.

Philadelphia Water Department (Philadelphia Water, Sewer And Storm Water Rate Board, Fiscal Years 2023 Special Rate Proceeding), April 2022. Presented testimony that demonstrated Philadelphia Water Department's outperformance and proposed a sharing of the utility's outperformance earnings. Presented testimony on behalf of the Public Advocate.

Special Projects

Developed a Uniform System of Accounts and Financial Data Collection Template for five countries participating in the National Association of Regulatory Utility Commissioners (NARUC)/East Africa Regional Energy Regulatory Partnership. Also conducted training seminars and participated as a panel member addressing issues in the utility industry from the perspective of the regulator. This work was conducted by NARUC) and the United States Agency for International Development (USAID).

Other Projects

Texas Gas Transmission Corporation (Federal Energy Regulatory Commission, Docket No. RP93-106). Technical analysis and participation in settlement negotiations on cost of service, invested capital, and revenue deficiency on behalf of the Indiana Office of Utility Consumer Counselor.

Natural Gas Pipeline Company of America (Federal Energy Regulatory Commission, Docket No. RP93-36). Technical analysis and participation in settlement negotiations on cost of service, invested capital, and revenue deficiency on behalf of the Indiana Office of Utility Consumer Counselor.

Texas Gas Transmission Company (Federal Energy Regulatory Commission, Docket No. RP94-423). Technical analysis and participation in settlement negotiations on cost of service, invested capital, and revenue deficiency on behalf of the Indiana Office of Utility Consumer Counselor.

Lafourche Telephone Company (Louisiana Public Service Commission, Docket No. U-21181). Analysis and investigation of earnings and appropriate rate of return on behalf of the Louisiana Public Service Commission Staff.

Natural Gas Pipeline Company of America (Federal Energy Regulatory Commission, Docket No. RP95-326). Technical analysis and participation in settlement negotiations on cost of service, invested capital, and revenue deficiency on behalf of the Indiana Office of Utility Consumer Counselor.

Pymatuning Independent Telephone Company (Pennsylvania Public Utility Commission, Docket No. R-00953502). Technical analysis and development of settlement position in the Company's rate case on behalf of the Pennsylvania Office of Consumer Advocate.

Illinois Bell Telephone Company (Illinois Commerce Commission, Docket No. 96-0172). Technical analysis of the Company's annual rate filing pursuant to its Price Cap Plan on behalf of Citizens Utility Board.

Illinois Bell Telephone Company (Illinois Commerce Commission, Docket No. 97-0157). Technical analysis of the Company's annual rate filing pursuant to its Price Cap Plan on behalf of Citizens Utility Board.

TDS Telecom (Pennsylvania Public Utility Commission, Docket Nos. R-00973892 and R-00973893). Technical analysis regarding rate base, cost of service, rate design, and rate of return, and assistance in settlement negotiations in the Company's rate case and alternative regulatory filing on behalf of the Pennsylvania Office of Consumer Advocate.

Appalachian Power Company (Virginia State Corporation Commission, Case No. PUE 960301). Technical analysis regarding rate base and cost of service and assistance in settlement negotiations in the Company's rate case and alternative regulatory filing on behalf of the Virginia Office of the Attorney General.

Central Maine Power Company (Maine Public Utilities Commission, Docket No. 97-580). Technical analysis regarding attrition and accounting issues in the Company's Transmission and Distribution unbundling proceeding on behalf of the Maine Public Utilities Commission Staff.

Illinois Bell Telephone Company (Illinois Commerce Commission, Docket No. 98-0259). Technical Analysis of the Company's annual rate filing pursuant to its Price Cap Plan on behalf of Citizens Utility Board.

Maine Public Service Company (Maine Public Utilities Commission, Docket No. 98-577). Technical analysis regarding attrition and accounting issues in the Company's Transmission and Distribution unbundling proceeding on behalf of the Maine Public Utilities Commission Staff.

Bangor Hydro-Electric Company (Maine Public Utilities Commission, Docket No. 97-596). Technical analysis regarding attrition and accounting issues in the Company's Transmission and Distribution unbundling proceeding on behalf of the Maine Public Utilities Commission Staff.

TDS Telecom (Maine Public Utilities Commission, Docket Nos. 98-894, 98-895, 98-904, 98-906, 98-911, and 98-912). Technical analysis regarding accounting issues and access rate changes on behalf of the Maine Office of the Public Advocate.

Mid-Maine Telecom (Maine Public Utilities Commission, Docket No. 2000-810). Technical analysis regarding accounting issues and access rate changes on behalf of the Maine Office of the Public Advocate.

Unitel, Inc. (Maine Public Utilities Commission, Docket No. 2000-813). Technical analysis regarding accounting issues and access rate changes on behalf of the Maine Office of the Public Advocate.

Hydraulics International, Inc. (Armed Services Board of Contract Appeals, ASBCA No. 51285). Technical analysis and support relating to the Economic Adjustment Clause claim on behalf of the Air Force Materiel Command.

Tidewater Telecom and Lincolnville Telephone Company (Maine Public Utilities Commission, Docket Nos. 2002-100 and 2002-99). Technical analysis regarding accounting issues and access rate changes on behalf of the Maine Office of the Public Advocate.

TDS Telecom (Vermont Public Service Board, Docket No. 6576). Technical analysis regarding rate base, cost of service, and depreciation expense on behalf of the Vermont Department of Public Service.

CenterPoint Energy-Entex (Louisiana Public Service Commission, Docket No. U-26720, Subdocket A). Technical analysis regarding rate base and cost of service on behalf of the Louisiana Public Service Commission Staff.

CenterPoint Energy-Arkla (Louisiana Public Service Commission, Docket No. U-27676). Technical analysis regarding rate base and cost of service on behalf of the Louisiana Public Service Commission Staff.

Provided technical analysis and support on behalf of the Louisiana Public Service Commission Staff relating to CLECO Power LLC Rate Stabilization Plan.

Provided technical analysis and support on behalf of the Louisiana Public Service Commission Staff relating to CLECO Power LLC post-Katrina power purchases.

Provided technical analysis and support on behalf of the Louisiana Public Service Commission Staff relating to Entergy Louisiana LLC recovery of storm damage costs.

Westar Energy, Inc. (Westar Energy) and Kansas Gas and Electric Company (KGE), (Kansas State Corporation Commission, Docket No. 17-WSEE-147-RTS). Technical analysis regarding rate base and cost of service on behalf of the Federal Executive Agencies.

Westar Energy, Inc. (Westar Energy) and Kansas Gas and Electric Company (KGE), (Kansas State Corporation Commission, Docket No. 17-WSEE-147-RTS). Technical analysis regarding rate base and cost of service on behalf of the Federal Executive Agencies.

COLUMBIA GAS OF PENNSYLVANIA INC.

Summary of Operating Income
For the Rate Year Ending December 31, 2023

Line No.	Description	Company Amounts at Present Rates	OCA Adjustments	Amounts After OCA Adjustments	Change in Revenues	Amounts After Change in Revenues
1	Total Operating Revenues	$ 814,505,439	$ -	$ 814,505,439	$ (16,249,779)	$ 798,255,660
2						
3	Operating Revenue Deductions					
4	Gas Supply Expense	$ 235,166,198	$ -	$ 235,166,198	$ -	$ 235,166,198
5	Off System Sales Expense	-	-	-	-	-
6	Gas Used in Company Operations	-	-	-	-	-
7	Operating and Maintenance Expense	245,615,375	(24,745,986)	220,869,389	(203,776)	220,665,613
8	Depreciation and Amortization Exp.	111,589,933	(1,208,468)	110,381,465	-	110,381,465
9	Net Salvage Amortized	5,134,298	-	5,134,298	-	5,134,298
10	Taxes Other Than Income	3,580,973	(32,964)	3,548,009	-	3,548,009
11	Total Operating Revenue Deductions	601,086,777	(25,987,417)	575,099,360	(203,776)	574,895,584
12						
13	Operating Income Before Income Taxes	213,418,662	25,987,417	239,406,079	(16,046,003)	223,360,076
14						
15	Income Taxes	32,293,750	5,846,957	38,140,707	(4,636,027)	33,504,679
16	Investment Tax Credit	(221,354)	-	(221,354)	-	(221,354)
17						
18	Net Operating Income	$ 181,346,266	$ 20,140,461	$ 201,486,727	$ (11,409,976)	$ 190,076,751
19						
20	Rate Base	$ 2,958,295,014		$ 2,910,823,141		$ 2,910,823,141
21						
22	Return On Rate Base	6.13%		6.92%		6.53%

COLUMBIA GAS OF PENNSYLVANIA INC.

Summary of Revenue Increase at OCA Rate of Return
For the Rate Year Ending December 31, 2023

Line No.	Description	Amount	
1	Adjusted Rate Base	$ 2,910,823,141	Schedule LKM-2, Page 2
2	Required Rate of Return	6.53%	
3			
4	Net Operating Income Required	$ 190,076,751	
5	Net Operating Income at Present Rates	201,486,727	Schedule LKM-1, Page 1
6			
7	Income Deficiency/(Surplus)	$ (11,409,976)	
8	Revenue Multiplier	1.42417301	
9			
10	Required Change in Company Revenue	$ (16,249,779)	
11			
12	Proposed Revenue Change	$ (16,249,779)	
13	Less: Uncollectibles	(203,776)	
14	Income Before State Taxes	$ (16,046,003)	
15	Less: State Income Tax @ 9.99%	(1,602,996)	
16			
17	Income Before Federal Taxes	$ (14,443,007)	
18	Federal Income Tax @ 21.0%	(3,033,032)	
19			
20	Net Income (Surplus)/Deficiency	$ (11,409,976)	

COLUMBIA GAS OF PENNSYLVANIA INC.

Summary of Rate Base
For the Rate Year Ending December 31, 2023

Description	Amount per Company Filing	OCA Rate Base Adjustments	Amount After OCA Adjustments
Property Plant and Equipment			
Gas Plant in Service	$ 4,061,081,498	$ (50,093,817)	$ 4,010,987,681
Construction Work in Progress	-	-	-
Gas Stored Underground - Non Current	3,794,693	-	3,794,693
Depreciation Reserve	(708,267,711)	2,940,109	(705,327,602)
Accumulated Provision Gas - Underground Storage	(163,467)	-	(163,467)
Net Plant in Service	$ 3,356,445,013	$ (47,153,708)	$ 3,309,291,305
Working Capital			
Materials & Supplies	$ 1,332,307	$ (49,094)	$ 1,283,213
Prepayments	4,065,141	(269,071)	3,796,070
Gas Stored Underground	40,836,689	-	40,836,689
Cash Allowance	-	-	-
Total Working Capital	$ 46,234,137	$ (318,165)	$ 45,915,972
Deferred Income Taxes			
Income Taxes	$ 67,706,185	$ -	$ 67,706,185
Depreciation	(508,547,561)	-	(508,547,561)
Other	-	-	-
Total Deferred Income Taxes	$ (440,841,376)	$ -	$ (440,841,376)
Customer Deposits	(3,554,025)	-	(3,554,025)
Customer Advances for Construction	11,265	-	11,265
Total Rate Base	$ 2,958,295,014	$ (47,471,873)	$ 2,910,823,141

COLUMBIA GAS OF PENNSYLVANIA INC.

Summary of Rate Base Adjustments
For the Rate Year Ending December 31, 2023

Description	Source	Amount
Rate Base per Company Filing	Schedule LKM-2, Page 1	$ 2,958,295,014
OCA Adjustments:		
Plant In Service	Schedule LKM-5	$ (47,153,708)
Materials & Supplies	Schedule LKM-6	(49,094)
Prepayments	Schedule LKM-7	(269,071)
Total Ratemaking Adjustments		$ (47,471,873)
Adjusted Rate Base per OCA		$ 2,910,823,141

COLUMBIA GAS OF PENNSYLVANIA INC.

Summary of Adjustments to Operating Income
For the Rate Year Ending December 31, 2023

Line No.	Description	Amount	Source
1	Operating Income Before Income Taxes per Company	$ 181,346,266	Exhibit No. 102, Schedule 3, Page 3
2			
3	OCA Adjustments:		
4	Adjustment to Annualize Payroll Expense	$ 344,630	Schedule LKM-8
5	Adjustment to Incentive Compensation Expense	4,941,288	Schedule LKM-9
6	Adjustment to Reflect Additional Labor & Benefits	519,390	Schedule LKM-10
7	Adjustment to Outside Services Expense	1,717,161	Schedule LKM-11
8	Adjustment to Strategic Initiatives Expense	10,097,322	Schedule LKM-12
9	Adjustment to Depreciation Expense	859,316	Schedule LKM-5
10	Interest Synchronization	1,661,354	Schedule LKM-13
11	Total OCA Adjustments	$ 20,140,461	
12			
13	Operating Income Before Income Taxes per OCA	$ 201,486,727	

COLUMBIA GAS OF PENNSYLVANIA INC.

Summary of Adjustments to Net Operating Income
For the Rate Year Ending December 31, 2023

Line No.	Description	Operating Revenues	O&M Expenses	Depreciation & Amortization	Taxes Other Than Income	Income Taxes	Operating Income Before Income Taxes
1	Amount per Company	$ 814,505,439	$ 480,781,573	$ 116,724,231	$ 3,580,973	$ 32,072,396	$ 181,346,266
2							
3	OCA Adjustments:						
4	Adjustment to Annualize Payroll Expense	$ -	$ (451,694)	$ -	$ (32,964)	$ 140,028	$ 344,630
5	Adjustment to Incentive Compensation Expense	-	(6,949,000)	-	-	2,007,712	4,941,288
6	Adjustment to Reflect Additional Labor & Benefits		(730,425)	-	-	211,035	519,390
7	Adjustment to Outside Services Expense	-	(2,414,867)	-	-	697,706	1,717,161
8	Adjustment to Strategic Initiatives Expense	-	(14,200,000)	-	-	4,102,678	10,097,322
9	Adjustment to Depreciation Expense	-	-	(1,208,468)	-	349,152	859,316
10	Interest Synchronization	-	-	-	-	(1,661,354)	1,661,354
11							
12	Total OCA Adjustments	$ -	$ (24,745,986)	$ (1,208,468)	$ (32,964)	$ 5,846,957	$ 20,140,461
13							
14	Total Adjusted Income Before Income Taxes	$ 814,505,439	$ 456,035,587	$ 115,515,763	$ 3,548,009	$ 37,919,353	$ 201,486,727

COLUMBIA GAS OF PENNSYLVANIA INC.

Calculation of Federal Income Taxes
For the Rate Year Ending December 31, 2023

Line No.	Description	Amount Per Company at present rates	OCA Adjustments	OCA Adjusted Amounts at Present Rates	Pro Forma Change in Revenues	Amounts After Change in Revenues
1	Net Operating Income Before Income Taxes	213,418,662	25,987,417	239,406,079	(16,046,003)	223,360,076
2	Pennsylvania Corporate Net Income Tax Deductible	(1,427,695)	(2,021,698)	(3,449,393)	1,602,996	(1,846,397)
3					-	
4	Statutory Adjustments					
	Flow Through Adjustment					
5	Book/ Tax Depreciation, Net	8,977,675	-	8,977,675	-	8,977,675
6	Book Depreciation- Net Salvage Amts	5,134,298	-	5,134,298	-	5,134,298
7	Property Removal Costs - ADR Property	(499,515)	-	(499,515)	-	(499,515)
8	Loss on Retirement - ACRS/MACRS Removal Costs	(5,256,466)	-	(5,256,466)	-	(5,256,466)
9	Interest on Debt	(58,870,071)	(5,750,203)	(64,620,274)	-	(64,620,274)
10	Employee Business Expense Disallowance	232,142	-	232,142	-	232,142
11	AFUDC Equity	-	-	-	-	-
12	Employee Stock Purchase Plan	45,029	-	45,029	-	45,029
13	NCS Allocation- Perm Taxes	-	-	-	-	-
14	Parking	23,493	-	23,493	-	23,493
15	Total Flow Through Adjustments	(50,213,415)	(5,750,203)	(55,963,618)	-	(55,963,618)
16						
17	Deferred Adjustment					
18	Excess Tax Depreciation Over Book	(32,057,651)	-	(32,057,651)	-	(32,057,651)
19	Repairs on Gas Pipeline	(76,263,053)	-	(76,263,053)	-	(76,263,053)
20	Bonus Depreciation	-	-	-	-	-
21	Sec 263A Mixed Service Costs	(1,654,603)	-	(1,654,603)	-	(1,654,603)
22	Loss on Retirement - ACRS/MACRS Property Basis	(4,365,396)	-	(4,365,396)	-	(4,365,396)
23	Avoided Cost Interest	(84,072)	-	(84,072)	-	(84,072)
24	Builder Incentives Capitalized	-	-	-	-	-
25	Stored Gas Losses	-	-	-	-	-
26	Contributions In Aid of Construction	1,593,344	-	1,593,344	-	1,593,344
27	Tax Inventory Adj	-	-	-	-	-
28	Capitalized Inventory	-	-	-	-	-
29	Customer Advances	(873,929)	-	(873,929)	-	(873,929)
30	Total Deferred Adjustment	(113,705,360)	-	(113,705,360)	-	(113,705,360)
31						
32	Taxable Income	48,072,192	18,215,517	66,287,709	(14,443,007)	51,844,701
33	Federal Income Tax Payable	10,095,160	3,825,258	13,920,419	(3,033,032)	10,887,387
34	Deferred Income Taxes	23,878,126	-	23,878,126	-	23,878,126
35	Tax Refund Amortization	-	-	-	-	-
36	Flow Back Of Excess Deferred Taxes	(3,107,233)	-	(3,107,233)	-	(3,107,233)
37	Effect of CNIT Deferred Tax on FIT	-	-	-	-	-
38	Net Federal Income Tax Expense	30,866,053	3,825,258	34,691,311	(3,033,032)	31,658,280
39	State Income Tax Expense	1,427,695	2,021,698	3,449,393	(1,602,996)	1,846,397
40	Total Income Tax Expense	32,293,748	5,846,956	38,140,704	(4,636,027)	33,504,677

COLUMBIA GAS OF PENNSYLVANIA INC.

Calculation of State Income Taxes
For the Rate Year Ending December 31, 2023

Line No.	Description	Amount Per Company at present rates	OCA Adjustments	OCA Adjusted Amounts at Present Rates	Pro Forma Change in Revenues	Amounts After Change in Revenues
1	Net Operating Income Before Income Taxes	$ 213,418,662	$ 25,987,417	$ 239,406,079	$ (16,046,003)	$ 223,360,076
2						
3	Statutory Adjustments	(163,918,775)	(5,750,203)	(169,668,978)	-	(169,668,978)
4	Pennsylvania Bonus Depreciation	(27,410,719)	-	(27,410,719)	-	(27,410,719)
5						
6	CNIT Taxable Income	22,089,168	20,237,214	42,326,382	(16,046,003)	26,280,379
7						
8	Net Operating Loss Deduction	7,797,926	-	7,797,926	-	7,797,926
9						
10	Pennsylvania Taxable Income	14,291,242	20,237,214	34,528,456	(16,046,003)	18,482,453
11						
12	Pennsylvania Income Tax Payable @ 9.99%	1,427,695	2,021,698	3,449,393	(1,602,996)	1,846,397
13						
14	Deferred Tax on Net Operating Loss Deduction	-	-	-	-	-
15						
16	Deferred Tax on Inventory Adj	-	-	-	-	-
17						
18	Deferred Tax on Capitalized Inventory	-	-	-	-	-
19						
20	Deferred Taxes Customer Advances	-	-	-	-	-
21						
22	Pennsylvania Corporate Income Tax Expense	$ 1,427,695	$ 2,021,698	$ 3,449,393	$ (1,602,996)	$ 1,846,397

COLUMBIA GAS OF PENNSYLVANIA INC.

Adjustment to Plant in Service
For the Rate Year Ending December 31, 2023

Line No.	Description	Amount Per Company at 12/31/23	1/	Amount per OCA		OCA Adjustment
1	Plant In Service	$ 4,061,081,498		$ 4,010,987,681	2/	$ (50,093,817)
2						
3	Accumulated Depreciation	(708,267,711)		(705,327,602)	3/	2,940,109
4						
5	Net Plant	$ 3,352,813,787		$ 3,305,660,079		$ (47,153,708)
6						
7	Accumulated Deferred Income Taxes	(440,841,376)		(440,841,376)	4/	-
8						
9	Net Balance	$ 2,911,972,411		$ 2,864,818,703		$ (47,153,708)
	Depreciation Expense	$ 111,589,933		$ 110,381,465		$ (1,208,468)

COLUMBIA GAS OF PENNSYLVANIA INC.

Adjustment to Reflect 13-Month Average
Materials & Supplies Balances
For the Rate Year Ending December 31, 2023

Line No.	Month	Amount
	April 30, 2021	$ 1,234,152
1	May 31, 2021	1,238,999
2	June 30, 2021	1,235,039
3	July 31, 2021	1,238,512
4	August 31, 2021	1,183,201
5	September 30, 2021	1,190,666
6	October 31, 2021	1,354,351
7	November 30, 2021	1,315,943
8	December 31, 2021	1,341,498
9	January 31, 2022	1,342,789
10	February 28, 2022	1,321,170
11	March 31, 2022	1,328,397
12	April 30, 2022	1,357,051
13	Average of Most Recent Actual Balances	1,283,213
14	13-Month Average per Company	1,332,307
15	Total	$ (49,094)

Notes:
1/ Response to OCA 05-010.

COLUMBIA GAS OF PENNSYLVANIA INC.

Adjustment to Reflect 13-Month Average
Prepayment Balances
For the Rate Year Ending December 31, 2023

Line No.	Month	Prepaid Leases 16500000	Corp. Ins. 16521000	Prepaid Ins. I/C 16520000	PUC,OCA, OSBA Fees 16503600	Prepaid Permits 16503700	Total
1	April 30, 2021	$ 52,043	$ 1,194,397	$ 897,905	$ 334,799	$ 215,000	$ 2,694,144
2	May 31, 2021	141,189	770,304	647,369	167,399	224,370	1,950,632
3	June 30, 2021	146,002	520,031	419,731	-	241,135	1,326,900
4	July 31, 2021	155,377	2,224,622	602,315	-	247,857	3,230,171
5	August 31, 2021	187,029	3,124,379	1,588,115	-	239,997	5,139,520
6	September 30, 2021	215,510	2,758,122	1,391,713	-	190,065	4,555,411
7	October 31, 2021	219,702	2,382,558	1,192,055	1,591,211	29,076	5,414,602
8	November 30, 2021	177,660	2,777,962	992,398	1,392,309	-	5,340,329
9	December 31, 2021	187,509	2,387,275	792,740	1,193,408	-	4,560,932
10	January 31, 2022	198,416	2,569,583	1,197,498	994,507	-	4,960,004
11	February 28, 2022	207,782	2,007,050	1,132,679	795,605	-	4,143,116
12	March 31, 2022	223,772	1,637,983	950,971	596,704	100	3,409,531
13	April 30, 2022	224,081	1,244,944	756,794	397,803	-	2,623,622
14							
15		179,698	1,969,170	966,330	574,134	106,739	
16							
17		13-Month Average Balance					3,796,070
18		13-Month Average Balance per Company					4,065,141
19							
20		Adjustment to Rate Base					$ (269,071)

Data Source:
Response to OCA-5-011

COLUMBIA GAS OF PENNSYLVANIA INC.

Adjustment to Annualize Payroll Expense
For the Rate Year Ending December 31, 2023

Line No.	Description	Amount	
1	Adjustment to Reverse Company Post- FPFTY Pay Increases	$ 451,694	1/
2			
3	Adjustment to O&M Expenses	$ (451,694)	
4			
5	FICA Tax on Post-FPFTY pay Increase	$ 32,964	2/
6			
7	Adjustment to Payroll Taxes	$ (32,964)	

Notes:
1/ Exhibit No. 104, Schedule No. 2, page 1
2/ Based FICA HTY Experience Factor of 7.2978% See Company Exhibit 6, Schedule 2, Page 3, Line 3

COLUMBIA GAS OF PENNSYLVANIA INC.

Adjustment to Incentive Compensation Expense
For the Rate Year Ending December 31, 2023

Line No.	Description	Amount	
1	Columbia Pennsylvania FPFTY Corporate Incentive Plan	$ 2,570,000	1/
2	NCSC FPFTY Corporate Incentive Plan	3,500,000	2/
3			
4	Total Corporate Incentive Plan	$ 6,070,000	
5	Portion Related to Financial Incentive Goals	70%	
6			
7	Adjustment to Corporate Incentive Plan	4,249,000	
8			
9	NCSC Stock Compensation	2,700,000	2/
10			
11	Adjustment to O&M Expense	$ (6,949,000)	

Notes
1/ Response to I&E-RE-16.
2/ Response to I&E-RE-57.

COLUMBIA GAS OF PENNSYLVANIA INC.

Adjustment to Reflect Additional Labor & Benefits
For the Rate Year Ending December 31, 2023

Line No.	Description	Amount
1	Additional Labor Expense per Company	$ 139,704
2	Benefits, Incentive Compensation & Payroll Taxes on Additional Labor Expense	14,392
3	Total Additional Labor Costs per OPA	154,096
4		
5	Additional Labor Expense per Company	$ 672,181 [1/]
6	Benefits, Incentive Compensation & Payroll Taxes on Additional Labor Expense	212,340
7	Total Additional Labor Costs per OPA	884,521
8		
9	Adjustment to O&M Expenses	$ (730,425)

Notes:
[1/] Exhibit No. 104, Schedule No. 2, Page 18.

COLUMBIA GAS OF PENNSYLVANIA INC.

Adjustment to Outside Services Expense
For the Rate Year Ending December 31, 2023

Line No.	Description	Amount
1	HTY Outside Services	$ 25,151,180
2	Planned Activities [1/]	
3	MAOP	850,000
4	Risers	700,000
5	Station Assessments	150,000
6	Turn Backs	180,000
7	Heater Inspections	160,000
8	SOII	180,000
9	Less: Lobbying	(125,842)
10		
11	Adjustments	2,094,158
12		
13	FPFTY Outside Services per OCA	27,245,338
14	FPFTY Outside Services per OCA	29,660,205
15		
16	Adjustment to O&M Expense	$ (2,414,867)

Notes:
[1/] Response to I&E -RE-021.

COLUMBIA GAS OF PENNSYLVANIA INC.

Adjustment to Strategic Initiatives Expense
For the Rate Year Ending December 31, 2023

Line No.	Description	Amount
1	Additional Cross Bores Inspection Expense	$ 2,700,000
2	Additional Abnormal Operating Conditions Remediation Expense	600,000
3	Additional Picarro Leak Detection Program Expense	10,900,000
4		
5		
6	Adjustment to O&M Expense	$ (14,200,000)

COLUMBIA GAS OF PENNSYLVANIA INC.

Interest Synchronization Adjustment
For the Rate Year Ending December 31, 2023

Line No.	Description	Amount	
1	Company Rate Base	$ 2,910,823,141	1/
2	Weighted Cost of Debt	2.22%	
3			
4	Adjusted Interest Deduction	$ 64,620,274	
5	Interest Deduction Per Company	58,870,071	2/
6			
7	Adjustment to Synchronize Interest Expense	$ 5,750,203	
8	Effective State Income Tax Rate	9.99%	
9			
10	Adjustment to State Income Taxes	$ (574,445)	
11			
12	Federal Income Tax Base	$ 5,175,758	
13	Federal Income Tax Rate	21.00%	
14			
15	Adjustment to Federal Income Taxes	$ (1,086,909)	

Notes:
1/ Schedule LKM-2, Page 1.
2/ Exhibit No. 107, page 16.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Re:	Pennsylvania Public Utility Commission	:	
		:	
	v.	:	Docket No. R-2022-3031211
		:	
	Columbia Gas of Pennsylvania, Inc.	:	

VERIFICATION

I, Lafayette K. Morgan, hereby state that the facts set forth in my Direct Testimony, OCA Statement 1, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa. C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: June 7, 2022
*330104

Signature: Lafayette Morgan Jr.
Lafayette K. Morgan

Consultant Address: Exeter Associates, Inc.
10480 Little Patuxent Parkway
Suite 300
Columbia, MD 21044-3575

OCA Statement 2

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	
v.	Docket No. R-2022-3031211
Columbia Gas of Pennsylvania, Inc.	

DIRECT TESTIMONY

OF

DAVID J. GARRETT

ON BEHALF OF

THE PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

June 7, 2022

TABLE OF CONTENTS

APPENDICES

LIST OF EXHIBITS

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is David J. Garrett. My business address is 101 Park Avenue, Suite 1125, Oklahoma City, Oklahoma 73102.

Q. By whom are you employed and in what capacity?

A. I am the managing member of Resolve Utility Consulting, LLC. I am an independent consultant specializing in public utility regulation.

Q. Please summarize your educational background and professional experience.

A. I received a B.B.A. degree with a major in Finance, an M.B.A. degree, and a J.D. degree from the University of Oklahoma. I worked in private legal practice for several years before working as assistant general counsel at the Oklahoma Corporation Commission in 2011. At the Oklahoma Corporation Commission, I worked in the Office of General Counsel in regulatory proceedings. In 2012, I worked for the Public Utility Division as a regulatory analyst providing testimony in regulatory proceedings. After leaving the Oklahoma Corporation Commission, I formed Resolve Utility Consulting PLLC, where I have represented numerous consumer groups and state agencies in utility regulatory proceedings, primarily in the areas of cost of capital and depreciation. I am a Certified Depreciation Professional with the Society of Depreciation Professionals. I am also a Certified Rate of Return Analyst with the Society of Utility and Regulatory Financial

Analysts. A more complete description of my qualifications and regulatory experience is included in my curriculum vitae.[1]

Q. On whose behalf are you testifying in this proceeding?

A. I am testifying on behalf of the Pennsylvania Office of Consumer Advocate (”OCA”).

Q. Describe the purpose and scope of your testimony in this proceeding.

A. The primary purpose of my testimony is to provide my opinion on the estimated cost of capital and awarded rate of return recommendation for Columbia Gas of Pennsylvania, Inc. (“CPA” or the “Company”). I am responding to the direct testimony of Company witness Paul R. Moul.

Q. Please describe the organization of your testimony.

A. In the executive summary below, I provide an overview of cost of capital issues, my recommendations, and my response to the Company’s testimony on these issues. In the sections that follow, I discuss the legal standards governing the awarded return issue, as well as the general concepts involved in estimating the cost of equity. I provide detailed analysis of the Discounted Cash Flow (“DCF”) Model, the Capital Asset Pricing Model (“CAPM”), including my results for these models and my responses to Mr. Moul’s results. I also address capital structure, which is a key component to the cost of capital.

I. EXECUTIVE SUMMARY

Q. Please summarize your recommendation to the Commission.

A. My testimony can be distilled to the following recommendations:

---

[1] Exhibit DJG-1.

- The Commission should reject the Company's proposed return on equity ("ROE") of 11.20% as excessive and unsupported. An objective cost of equity analysis shows that CPA's cost of equity is about 7.7%, based upon review of the Company's proxy group.

- The Commission should reject the Company's request to increase the allowed return on equity by 25 basis points as an award for management performance. The request is not supported and would impose $5.89 million in additional costs on ratepayers.

- The legal standards governing this issue do not mandate that the awarded ROE equate to the result of a particular financial model, but rather that it be reasonable under the circumstances. In my opinion, it is not appropriate to consider an awarded ROE that is significantly higher than a regulated utility's cost of equity. Accordingly, I recommend the Commission award CPA an authorized ROE of 8.75%. Although 8.75% is still clearly above CPA's market-based cost of equity estimate of 7.7%, it represents a gradual yet meaningful move towards market-based cost of equity.

- I recommend the Commission reject CPA's proposed capital structure consisting of 43.2% long-term debt, 2.4% short-term debt, and 54.4% equity. This equity-rich capital structure has the effect of increasing capital costs above a reasonable level. An objective analysis of CPA's optimal capital structure indicates a fair ratemaking debt ratio as high as 57%. The average debt ratio of the proxy group in this case is 53.3%. Thus, CPA's proposed debt ratio is far too low to be considered reasonable. I recommend an imputed capital structure consisting of 43.2% long-term debt, 2.4% short-term debt, and 49.3% equity.

- My recommended ROE of 8.75% coupled with adjustments to the Company's proposed capital structure equate to an overall weighted average rate of return of 6.24%, an outcome which better balances the interests of ratepayers and CPA.

My proposed adjustments are reflected in the table below.[2]

[2] *See also* Exhibit DJG-16.

Figure 1:
OCA Weighted Average Rate of Return Proposal

Capital Component	Proposed Ratio	Cost Rate	Weighted Cost
Long-Term Debt	48.3%	4.51%	2.18%
Short-Term Debt	2.4%	1.65%	0.04%
Common Equity	49.3%	8.75%	4.32%
Total	100.0%		6.53%

Adopting my proposed adjustments would result in an overall weighted average authorized rate of return of 6.53%. The details supporting my proposed adjustments are discussed further in my testimony.

Q. Are you recommending any adjustments to CPA's proposed cost of long-term and short-term debt?

A. No.

A. Overview and Background

Q. Please explain the concept and significance of the Cost of Capital.

A. The term cost of capital, or Weighted Average Cost of Capital (WACC),[3] refers to the weighted average cost of the components within a company's capital structure, including the costs of both debt and equity. The three primary components of a company's WACC include the following:

[3] The terms cost of capital and WACC are synonymous and used interchangeably throughout this testimony.

1. Cost of Debt
2. Cost of Equity
3. Capital Structure

Determining the cost of debt is relatively straight-forward. Interest payments on bonds are contractual, embedded costs that are generally calculated by dividing total interest payments by the book value of outstanding debt. Determining the cost of equity, on the other hand, is more complex. Unlike the known, contractual, and embedded cost of debt, there is not any explicitly quantifiable "cost" of equity. Instead, the cost of equity must be estimated through various financial models. Cost of capital is expressed as a weighted average because it is based upon a company's relative levels of debt and equity, as defined by the particular capital structure of that company. The basic WACC equation used in regulatory proceedings is presented as follows:

Equation 1:
Weighted Average Cost of Capital

$$WACC = \left(\frac{D}{D+E}\right) C_D + \left(\frac{E}{D+E}\right) C_E$$

where: $WACC$ = *weighted average cost of capital*
D = *book value of debt*
C_D = *embedded cost of debt capital*
E = *book value of equity*
C_E = *market-based cost of equity capital*

Companies in the competitive market often use their WACC as the discount rate to determine the value of capital projects, so it is important that this figure be estimated accurately.

Q. How do experts and regulators typically assess the ROEs awarded to utilities and the corresponding opportunity for shareholders?

A. Investors, company managers, and academics around the world have used models, such as the CAPM and DCF to closely estimate cost of equity for many years, and weigh the results achieved against the results from proxy groups. Each of these concepts will be discussed in more detail later in my testimony.

B. <u>Recommendation</u>

Q. Please summarize your ROE recommendation to the Pennsylvania Public Utility Commission (Commission).

A. Pursuant to the legal and technical standards guiding this issue, the awarded ROE should be based on, or reflective of, the utility's cost of equity. CPA's estimated cost of equity is about 7.7%, when using reasonable inputs. However, legal standards do not mandate the awarded ROE be set exactly equal to the cost of equity. Rather, in *Federal Power Commission v. Hope Natural Gas Co*., the U.S. Supreme Court found that, although the awarded return should be based on a utility's cost of equity, the "end result" should be just and reasonable.[4] Therefore, I recommend the Commission award CPA an ROE of 8.75%. In my opinion, an awarded ROE that is set too far above a regulated utility's cost of equity (which in this case is only about 7.7%) runs the risk of being at odds with the standards set forth in *Hope*[5] and *Bluefield Water Works & Improvement Co. v. Public Service*

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[4] *See Federal Power Commission v. Hope Natural Gas Co*., 320 U.S. 591, 603 (1944). Here, the Court states that it is not mandating the various permissible ways in which the rate of return may be determined, but instead indicates that the end result should be just and reasonable. This is sometimes called the "end result" doctrine.

[5] *Id*.

Commission of West Virginia.[6] In other words, setting the awarded ROE far above the cost of equity results in an excess transfer of wealth from customers to the utility, which is never appropriate.

Q. If 8.75% exceeds CPA's actual cost of equity and still, in your opinion, results in a wealth transfer from shareholders to ratepayers, how can it still be considered a just and reasonable result?

A. As addressed below, I determine that Columbia's market-based cost of equity is 7.7%. However, an awarded return of 7.7% in this proceeding would arguably represent a stark movement in the authorized return. While generally reducing awarded ROEs for utilities would move awarded returns closer to market-based costs and so reduce the excess transfer of wealth from ratepayers to shareholders, I believe it is advisable to do so gradually. One of the primary reasons CPA's actual cost of equity is quite low relative to other firms is because CPA has a relatively low risk profile. In general, utility stocks are low-risk investments because movements in their stock prices are not volatile. If the Commission were to make a significant, sudden change in the awarded ROE anticipated by regulatory stakeholders, it could have the undesirable effect of notably increasing the Company's risk profile, which could be at odds with the *Hope* Court's "end result" doctrine. An awarded ROE of 8.75% represents an appropriate balance between the Supreme Court's indications that awarded ROEs should be based on cost, while also recognizing that the end result must be just and reasonable under the circumstances.

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[6] *Bluefield Water Works & Improvement Co. v. Public Service Commission of West Virginia*, 262 U.S. 679, 692–93 (1923).

Q. Please summarize your recommendation regarding capital structure.

A. The Company proposes an equity-rich capital structure consisting of only 43.2% debt.[7] Unlike competitive companies, which have a natural financial incentive to issue sufficient amounts of debt to maximize profits, regulated utilities do not have the same incentive to issue sufficient amounts of debt. However, even Mr. Moul's own utility proxy group reported a debt ratio of 53.3%, which is substantially higher than the debt ratio proposed by CPA.[8] The following figure presents a brief summary of my capital structure analysis.

Figure 2:
Capital Structure Analysis Summary

Source	Debt Ratio
Power	60%
Telecom	59%
Water Utility	57%
NiSource	**57%**
Green Energy	56%
Proxy Group	**53.3%**
OCA Proposed	**48.3%**
Company	**43.2%**

Capital structure is discussed in more detail later in my testimony.

[7] Direct Testimony of Paul R. Moul, p. 21, lines 24-25.

[8] Exhibit DJG-15.

C. Response to the Company's Testimony

Q. Please provide an overview of the problems you have identified with the Company's testimony regarding cost of equity, capital structure, and the resulting awarded ROE.

A. Mr. Moul proposes a return on equity of 11.20%.[9] Mr. Moul's recommendation is based on the CAPM, DCF Model, and other models. A summary of Mr. Moul's positions are shown in the figure below.[10]

Figure 3:
CPA Weighted Average Rate of Return Proposal

Capital Component	Proposed Ratio	Cost Rate	Weighted Cost
Long-Term Debt	43.2%	4.51%	1.95%
Short-Term Debt	2.4%	1.65%	0.04%
Common Equity	54.4%	11.20%	6.09%
Total	100.0%		8.08%

However, several of his key assumptions and inputs to these models violate fundamental, widely accepted tenets in finance and valuation. I find several aspects of Mr. Moul's approach and resulting recommendations to be problematic, including the growth rates used in his DCF models and his inflated estimate for the equity risk premium ("ERP") used in his CAPM analysis. In addition, Mr. Moul adds what he calls a "leverage adjustment" to the results of his models, which inappropriate inflate the results. The Commission has previously rejected Mr. Moul's proposed leverage adjustment.[11] Finally, Mr. Moul

[9] Direct Testimony of Paul R. Moul, p. 1, lines 18-19.

[10] *See also* Direct Testimony of Paul R. Moul, Exhibit PRM-1, Sch. 1, p. 1.

[11] *Pa. P.U.C. v. PPL Elec. Util. Corp.*, Docket No. R-2012-2290597, Order, 52 (Dec. 28, 2012), p. 52 of 105.

inappropriately adds a premium to his cost of equity estimate for management performance, which further inflates a figure that is already overestimated.

Regarding capital structure, Mr. Moul adopts the Company's proposed capital structure ratio consisting of only 43.2% long-term debt.[12] As discussed in my testimony, the Company does not have a financial incentive to operate with sufficient amounts of debt in its capital structure, and the evidence shows that CPA's proposed debt ratio is too low.

II. LEGAL STANDARDS AND THE AWARDED RETURN

Q. Discuss the legal standards governing the awarded rate of return on capital investments for regulated utilities.

A. In *Wilcox v. Consolidated Gas Co. of New York*, the U.S. Supreme Court first addressed the meaning of a fair rate of return for public utilities.[13] The Court found that "the amount of risk in the business is a most important factor" in determining the appropriate allowed rate of return.[14] As referenced earlier, in two subsequent landmark cases, the Court set forth the standards by which public utilities are allowed to earn a return on capital investments. First, in *Bluefield*, the Court held:

> A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public. . . 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

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[12] Direct Testimony of Paul R. Moul, p. 4, lines 12-15.

[13] *Wilcox v. Consolidated Gas Co. of New York*, 212 U.S. 19 (1909).

[14] *Id.* at 48.

> economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties.[15]

Then, in *Hope*, the Court expanded on the guidelines set forth in *Bluefield* and stated:

> From the investor or company point of view it is important that there be enough revenue not only for operating expenses <u>but also for the capital costs of the business.</u> These include service on the debt and dividends on the stock. By that standard the 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 its credit and to attract capital.[16]

The cost of capital models I have employed in this case are designed to be in accordance with the foregoing legal standards.

Q. Is it important that the awarded rate of return be based on the Company's actual cost of capital?

A. Yes. The U.S. Supreme Court in *Hope* makes it clear that the allowed return should be based on the actual cost of capital.[17] Moreover, the awarded return must also be fair, just, and reasonable under the circumstances of each case. Among the circumstances that must be considered in each case are the broad economic and financial impacts to the cost of equity and awarded return caused by market forces and other factors. As a starting point, however, scholars agree that the actual cost of capital must be considered:

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[15] *Bluefield* at 692–93.

[16] *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591, 603 (1944) (emphasis added) (internal citations omitted).

[17] The term "cost of capital" includes both debt and equity. The overall awarded rate of return should be based on the utility's cost of capital, which the awarded ROE should be based in the utility's cost of equity.

> Since by definition the cost of capital of a regulated firm represents precisely the expected return that investors could anticipate from other investments while bearing no more or less risk, and since investors will not provide capital unless the investment is expected to yield its opportunity cost of capital, the correspondence of the definition of the cost of capital with the court's definition of legally required earnings appears clear.[18]

The models I have employed in this case closely estimate the Company's true cost of equity. If the Commission sets the awarded return based on my lower and more reasonable rate of return, it will better comply with the U.S. Supreme Court's standards, allow the Company to maintain its financial integrity, and achieve reasonable returns for its investors. On the other hand, if the Commission sets the allowed rate of return much higher than the true cost of capital, as requested by CPA, it will result in an inappropriate transfer of wealth from ratepayers to shareholders.[19]

Q. What does this legal standard mean for determining the awarded return and the cost of capital?

A. The awarded return and the cost of capital are different but related concepts. On the one hand, the legal and technical standards encompassing this issue require that the awarded return reflect the true cost of capital. Yet on the other hand, the two concepts differ in that the legal standards do not mandate that awarded returns exactly match the cost of capital. Instead, awarded returns are set through the regulatory process and may be influenced by various factors other than objective market drivers. By contrast, the cost of capital should be evaluated objectively and be closely tied to economic realities, such as stock prices,

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[18] A Lawrence Kolbe, James A. Read, Jr. & George R. Hall, *The Cost of Capital: Estimating the Rate of Return for Public Utilities* 21 (The MIT Press 1984).

[19] Roger A. Morin, *New Regulatory Finance* 23–24 (Public Utilities Reports, Inc. 2006) (1994) ("[I]f the allowed rate of return is greater than the cost of capital, capital investments are undertaken and investors' opportunity costs are more than achieved. Any excess earnings over and above those required to service debt capital accrue to the equity holders, and the stock price increases. In this case, the wealth transfer occurs from ratepayers to shareholders.").

dividends, growth rates, and, most importantly, risk. The cost of capital can be estimated by financial models used by firms, investors, and academics around the world for decades. The problem is, with respect to regulated utilities, there has been a trend in which awarded returns fail to closely track with market-based cost of capital, as further discussed below. To the extent this occurs, the results are detrimental to ratepayers and the state's economy.

Q. Describe the economic impact that occurs when the awarded return strays too far from the U.S. Supreme Court's cost of equity standards.

A. When the awarded ROE is set far above the cost of equity, it runs the risk of violating the U.S. Supreme Court's standards. This has the effect of diverting dollars from ratepayers for their internal or business uses that would otherwise support the local or state economy to the utility's shareholders at large. Moreover, establishing an awarded return that far exceeds true cost of capital effectively prevents the awarded returns from changing along with economic conditions. This is especially true given the fact that regulators tend to be influenced by the awarded returns in other jurisdictions, regardless of the various unknown factors influencing those awarded returns. If regulators rely too heavily on the awarded returns from other jurisdictions, they can create a cycle over time that bears little relation to the market-based cost of equity. In fact, this is exactly what we have observed since 1990. This is yet another reason why it is crucial for regulators to put more emphasis on the target utility's actual cost of equity than on the awarded returns from other jurisdictions. Awarded returns may be influenced by settlements and other political factors not based on true market conditions. In contrast, the true cost of equity as estimated through objective models is not influenced by these factors but is instead driven by market-based factors.

Q. Can you illustrate and provide a comparison of the relationship between awarded utility returns and market cost of equity since 1990?

A. Yes. As shown in the figure below, awarded returns for electric and gas utilities have been above the average required market return since 1990.[20] Because utility stocks are consistently far less risky than the average stock in the marketplace, the cost of equity for utility companies is less than the market cost of equity.

To illustrate this fact, the graph in the figure below shows three trend lines. The top two line are the average annual awarded returns since 1990 for U.S. regulated electric and gas utilities. The bottom line is the required market return over the same period. As discussed in more detail later in my testimony, the required market return is essentially the return that investors would require if they invested in the entire market and, as such, the required market return is essentially the cost of equity of the entire market. Since it is undisputed that utility stocks are less risky than the average stock in the market, then the utilities' cost of equity must be less than the market cost of equity.[21] Thus, awarded returns (the solid line) should generally be below the market cost of equity (the dotted line), since awarded returns are supposed to be based on true cost of equity.

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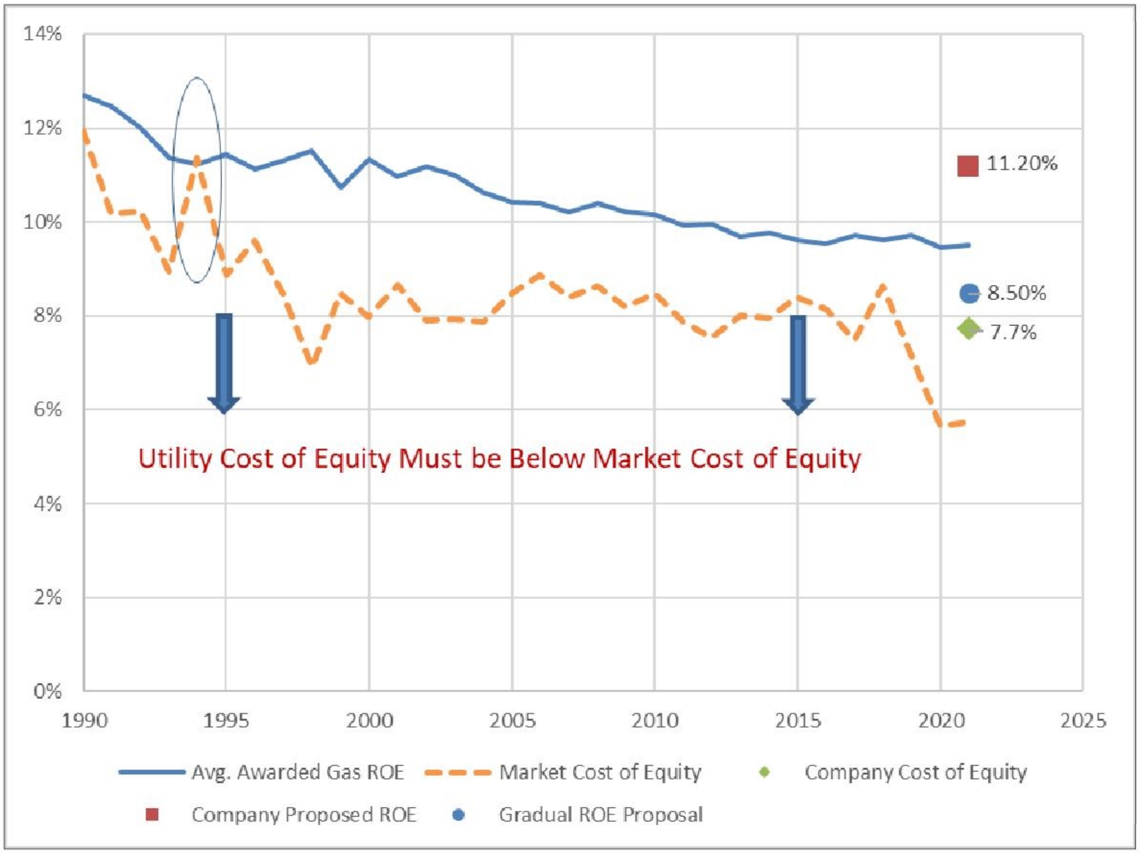
[20] Exhibit DJG-13.

[21] This fact can be objectively measured through a term called "beta," as discussed later in the testimony. Utility betas are less than one, which means utility stocks are less risky than the "average" stock in the market.

Figure 4:
Awarded ROEs vs. Market Cost of Equity



Notwithstanding the data in this graph, awarded ROEs have been consistently above the market cost of equity for many years. Also as shown in this graph, since 1990, there was only one year in which the average awarded ROE was below the market cost of equity. In 1994, regulators awarded ROEs that were the closest to utilities' market-based cost of equity. In my opinion, when awarded ROEs for utilities are below the market cost of equity, regulators more closely conform to the standards set forth by *Hope* and *Bluefield* and minimize the excess wealth transfer from ratepayers to shareholders.

Q. Have other analysts commented on this national phenomenon of awarded ROEs exceeding market-based cost equity for utilities?

A. Yes. In his article published in Public Utilities Fortnightly in 2016, Steve Huntoon observed that even though utility stocks are less risky than the stocks of competitive industries, utility stocks have nonetheless outperformed the broader market.[22] Specifically, Mr. Huntoon notes the following three points which lead to a problematic conclusion:

> 1. Jack Bogle, the founder of Vanguard Group and a Wall Street legend, provides rigorous analysis that the long-term total return for the broader market will be around 7 percent going forward. Another Wall Street legend, Professor Burton Malkiel, corroborates that 7 percent in the latest edition of his seminal work, A Random Walk Down Wall Street.
>
> 2. Institutions like pension funds are validating the first point by piling on risky investments to try and get to a 7.5 percent total return, as reported by the Wall Street Journal.
>
> 3. Utilities are being granted returns on equity around 10 percent.[23]

Other scholars have also observed that awarded ROEs have not appropriately tracked with declining interest rates over the years, and that excessive awarded ROEs have negative economic impacts. In a white paper issued in 2017, Charles S. Griffey stated:

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[22] Steve Huntoon, "Nice Work If you can Get It," Public Utilities Fortnightly (Aug. 2016).

[23] *Id.*

> The "risk premium" being granted to utility shareholders is now higher than it has ever been over the last 35 years. Excessive utility ROEs are detrimental to utility customers and the economy as a whole. From a societal standpoint, granting ROEs that are higher than necessary to attract investment creates an inefficient allocation of capital, diverting available funds away from more efficient investments. From the utility customer perspective, if a utility's awarded and/or achieved ROE is higher than necessary to attract capital, customers pay higher rates without receiving any corresponding benefit.[24]

It is interesting that both Mr. Huntoon and Mr. Griffey use the word "sticky" in their articles to describe the fact that awarded ROEs have declined at a much slower rate than interest rates and other economic factors resulting in a decline in capital costs and expected returns on the market. It is not hard to see why this phenomenon of "sticky" ROEs has occurred. Because awarded ROEs are often based primarily on a comparison with other awarded ROEs around the country, the average awarded returns effectively fail to adapt to true market conditions, and regulators seem reluctant to deviate from the average. Once utilities and regulatory commissions become accustomed to awarding rates of return higher than market conditions actually require, this trend becomes difficult to reverse. The fact is, utility stocks are less risky than the average stock in the market, and thus, awarded ROEs should be less than the expected return on the market. However, that is rarely the case. My proposal assists the Commission in "see[ing] the gap between allowed returns and cost of capital,"[25] and reconciling this issue in an equitable manner.

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[24] Charles S. Griffey, "When 'What Goes Up' Does Not Come Down: Recent Trends in Utility Returns," White Paper (February 2017).

[25] Leonard Hyman & William Tilles, "Don't Cry for Utility Shareholders, America," Public Utilities Fortnightly (October 2016).

Q. Summarize the legal standards governing the awarded ROE issue.

A. The Commission should strive to move the awarded return to a level more closely aligned with the Company's actual, market-derived cost of capital while keeping in mind the following two legal principles outlined below.

1. Risk is the most important factor when determining the awarded return. The awarded return should be commensurate with those returns on investments of corresponding risk.

The legal standards articulated in *Hope* and *Bluefield* demonstrate that the U.S. Supreme Court understands one of the most basic, fundamental concepts in financial theory: the more (or less) risk an investor assumes, the more (or less) return the investor requires. Since utility stocks are low risk, the return required by equity investors should be relatively low. I have used financial models to closely estimate the Company's cost of equity, and these financial models account for risk. The cost of equity models confirm the industry experiences relatively low levels of risk by producing relatively low cost of equity results. In turn, the awarded ROE in this case should reflect CPA's relatively low market risk.

2. The awarded return should be sufficient to assure financial soundness and integrity under efficient management.

Because awarded returns in the regulatory environment have not closely tracked market-based trends and commensurate risk, utility companies have been able to remain more than financially sound, perhaps despite management inefficiencies. In fact, the transfer of wealth from ratepayers to shareholders has been so far removed from actual cost-based drivers that a utility could remain financially sound even under relatively inefficient management. Therefore, regulatory commissions should strive to set utilities' returns based on actual market conditions to promote prudent and efficient management and minimize economic waste.

III. GENERAL CONCEPTS AND METHODOLOGY

Q. Discuss your approach to estimating the cost of equity in this case.

A. While a competitive firm must estimate its own cost of capital to assess the profitability of competing capital projects, regulators determine a utility's cost of capital to establish a fair rate of return. The legal standards set forth above do not include specific guidelines regarding the models that must be used to estimate the cost of equity for utilities. Over the years, however, regulatory commissions have consistently relied on several models. The models I have employed in this case have been the two most widely used and accepted in regulatory proceedings for many years. The specific inputs and calculations for these models are described in more detail below.

Q. Please explain why you used multiple models to estimate the cost of equity.

A. These models attempt to measure the return on equity required by investors by estimating several different inputs. It is preferable to use multiple models because the results of any one model may contain a degree of imprecision, especially depending on the reliability of the inputs used at the time of conducting the model. By using multiple models, the analyst can compare the results of the models and look for outlying results and inconsistencies. Likewise, if multiple models produce a similar result, it may indicate a narrower range for the cost of equity estimate.

Q. Please discuss the benefits of choosing a proxy group of companies in conducting cost of capital analyses.

A. The cost of equity models in this case can be used to estimate the cost of capital of any individual, publicly traded company. There are advantages, however, to conducting cost of capital analysis on a proxy group of companies that are comparable to the target company. First, it is better to assess the financial soundness of a utility by comparing it to a group of other financially sound utilities. Second, using a proxy group provides more reliability and confidence in the overall results because there is a larger sample size. Finally, the use of a proxy group is often a pure necessity when the target company is a subsidiary that is not publicly traded, as is the case here. This is because the financial models used to estimate the cost of equity require information from publicly traded firms, such as stock prices and dividends.

Q. Describe the proxy group you selected in this case.

A. In this case, I chose to use the same proxy group used by Mr. Moul. There could be reasonable arguments made for the inclusion or exclusion of a particular company in a proxy group; however, the cost of equity results are influenced far more by the underlying assumptions and inputs to the various financial models than the composition of the proxy group.[26] By using the same proxy group, we can remove a relatively insignificant variable from the equation and focus on the primary factors driving CPA's cost of equity estimate.

IV. RISK AND RETURN CONCEPTS

Q. Discuss the general relationship between risk and return.

A. Risk is among the most important factors for the Commission to consider when determining the allowed return. Thus, it is necessary to understand the relationship between risk and return. There is a direct relationship between risk and return: the more (or less) risk an investor assumes, the larger (or smaller) return the investor will demand.

[26] Exhibit DJG-2.

There are two primary types of risk: firm-specific risk and market risk. Firm-specific risk affects individual companies, while market risk affects all companies in the market to varying degrees.

Q. Discuss the differences between firm-specific risk and market risk.

A. Firm-specific risk affects individual companies, rather than the entire market. For example, a competitive firm might overestimate customer demand for a new product, resulting in reduced sales revenue. This is an example of a firm-specific risk called "project risk."[27] There are several other types of firm-specific risks, including: (1) "financial risk" – the risk that equity investors of leveraged firms face as residual claimants on earnings; (2) "default risk" – the risk that a firm will default on its debt securities; and (3) "business risk" – which encompasses all other operating and managerial factors that may result in investors realizing less than their expected return in that particular company. While firm-specific risk affects individual companies, market risk affects all companies in the market to varying degrees. Examples of market risk include interest rate risk, inflation risk, and the risk of major socio-economic events. When there are changes in these risk factors, they affect all firms in the market to some extent.[28]

Analysis of the U.S. market in 2001 provides a good example for contrasting firm-specific risk and market risk. During that year, Enron Corp.'s stock fell from $80 per share to its low when the company filed bankruptcy at the end of the year. If an investor's portfolio had held only Enron stock at the beginning of 2001, this irrational investor would

[27] Aswath Damodaran, *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset* 62–63 (3rd ed., John Wiley & Sons, Inc. 2012).

[28] *See* Zvi Bodie, Alex Kane & Alan J. Marcus, *Essentials of Investments* 149 (9th ed., McGraw-Hill/Irwin 2013).

have lost the entire investment by the end of the year due to assuming the full exposure of Enron's firm-specific risk (in that case, imprudent management). On the other hand, a rational, diversified investor who invested the same amount of capital in a portfolio holding every stock in the S&P 500 would have had a much different result that year. The rational investor would have been relatively unaffected by the fall of Enron because his or her portfolio included about 499 other stocks. Each of those stocks, however, would have been affected by various market risk factors that occurred that year. Thus, the rational investor would have incurred a relatively minor loss due to market risk factors, while the irrational investor would have lost everything due to firm-specific risk factors.

Q. Can equity investors reasonably minimize firm-specific risk?

A. Yes. A fundamental concept in finance is that firm-specific risk can be eliminated through diversification.[29] If someone irrationally invested all his or her funds in one firm, he or she would be exposed to all the firm-specific risk and the market risk inherent in that single firm. Rational investors, however, are risk-averse and seek to eliminate risk they can control. Investors can eliminate firm-specific risk by adding more stocks to their portfolio through a process called "diversification." There are two reasons why diversification eliminates firm-specific risk.

First, each stock in a diversified portfolio represents a much smaller percentage of the overall portfolio than it would in a portfolio of just one or a few stocks. Thus, any firm-

[29] *See* John R. Graham, Scott B. Smart & William L. Megginson, *Corporate Finance: Linking Theory to What Companies Do* 179–80 (3rd ed., South Western Cengage Learning 2010).

specific action that changes the stock price of one stock in the diversified portfolio will have only a small impact on the entire portfolio.[30]

The second reason why diversification eliminates firm-specific risk is that the effects of firm-specific actions on stock prices can be either positive or negative for each stock. Thus, in large diversified portfolios, the net effect of these positive and negative firm-specific risk factors will be essentially zero and will not affect the value of the overall portfolio.[31] Firm-specific risk is also called "diversifiable risk" because it can be easily eliminated through diversification.

Q. Is it well-known and accepted that, because firm-specific risk can be easily eliminated through diversification, the market does not reward such risk through higher returns?

A. Yes. Because investors eliminate firm-specific risk through diversification, they know they cannot expect a higher return for assuming the firm-specific risk in any one company. Thus, the risks associated with an individual firm's operations are not rewarded by the market. In fact, firm-specific risk is also called "unrewarded" risk for this reason. Market risk, on the other hand, cannot be eliminated through diversification. Because market risk cannot be eliminated through diversification, investors expect a return for assuming this type of risk. Market risk is also called "systematic risk." Scholars recognize the fact that market risk, or systematic risk, is the only type of risk for which investors expect a return for bearing:

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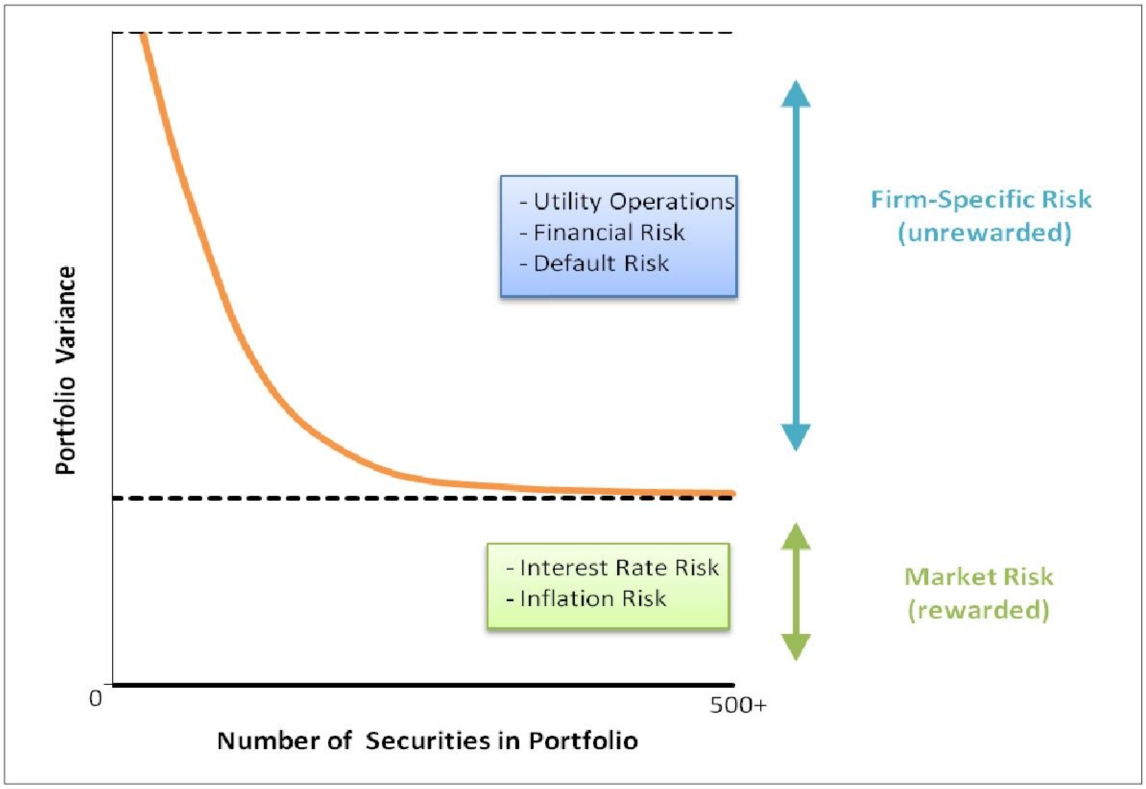
[30] *See* Aswath Damodaran, *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset* 64 (3rd ed., John Wiley & Sons, Inc. 2012).

[31] *See* Aswath Damodaran, *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset* 64 (3rd ed., John Wiley & Sons, Inc. 2012).

> If investors can cheaply eliminate some risks through diversification, then we should not expect a security to earn higher returns for risks that can be eliminated through diversification. Investors can expect compensation <u>only</u> for bearing systematic risk (i.e., risk that cannot be diversified away).[32]

These important concepts are illustrated in the figure below. Some form of this figure is found in many financial textbooks.

Figure 5:
Effects of Portfolio Diversification



This figure shows that as stocks are added to a portfolio, the amount of firm-specific risk is reduced until it is essentially eliminated. No matter how many stocks are added, however, there remains a certain level of fixed market risk. The level of market risk will

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[32] *See* John R. Graham, Scott B. Smart & William L. Megginson, *Corporate Finance: Linking Theory to What Companies Do* 180 (3rd ed., South Western Cengage Learning 2010) (emphasis added).

vary from firm to firm. Market risk is the only type of risk that is rewarded by the market and is thus the primary type of risk the Commission should consider when determining the allowed return.

Q. Describe how market risk is measured.

A. Investors who want to eliminate firm-specific risk must hold a fully diversified portfolio. To determine the amount of risk that a single stock adds to the overall market portfolio, investors measure the covariance between a single stock and the market portfolio. The result of this calculation is called "beta."[33] Beta represents the sensitivity of a given security to the market as a whole. The market portfolio of all stocks has a beta equal to one. Stocks with betas greater than 1.0 are relatively more sensitive to market risk than the average stock. For example, if the market increases (or decreases) by 1.0%, a stock with a beta of 1.5 will, on average, increase (or decrease) by 1.5%. In contrast, stocks with betas of less than 1.0 are less sensitive to market risk, such that if the market increases (or decreases) by 1.0%, a stock with a beta of 0.5 will, on average, only increase (or decrease) by 0.5%. Thus, stocks with low betas are relatively insulated from market conditions. The beta term is used in the CAPM to estimate the cost of equity, which is discussed in more detail later.[34]

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[33] *See* John R. Graham, Scott B. Smart & William L. Megginson, *Corporate Finance: Linking Theory to What Companies Do* 180–81 (3rd ed., South Western Cengage Learning 2010).

[34] Though it will be discussed in more detail later, Exhibit DJG-8 shows that the average beta of the proxy group was less than 1.0. This confirms the well-known concept that utilities are relatively low-risk firms.

Q. Are public utilities characterized as defensive firms that have low betas, have low market risk, and are relatively insulated from overall market conditions?

A. Yes. Although market risk affects all firms in the market, it affects different firms to varying degrees. Firms with high betas are affected more than firms with low betas, which is why firms with high betas are riskier. Stocks with betas greater than one are generally known as "cyclical stocks." Firms in cyclical industries are sensitive to recurring patterns of recession and recovery known as the "business cycle."[35] Thus, cyclical firms are exposed to a greater level of market risk. Securities with betas less than one, on the other hand, are known as "defensive stocks." Companies in defensive industries, such as public utility companies, "will have low betas and performance that is comparatively unaffected by overall market conditions."[36] In fact, financial textbooks often use utility companies as prime examples of low-risk, defensive firms.[37] The figure below compares the betas of several industries and illustrates that the utility industry is one of the least risky industries in the U.S. market.[38]

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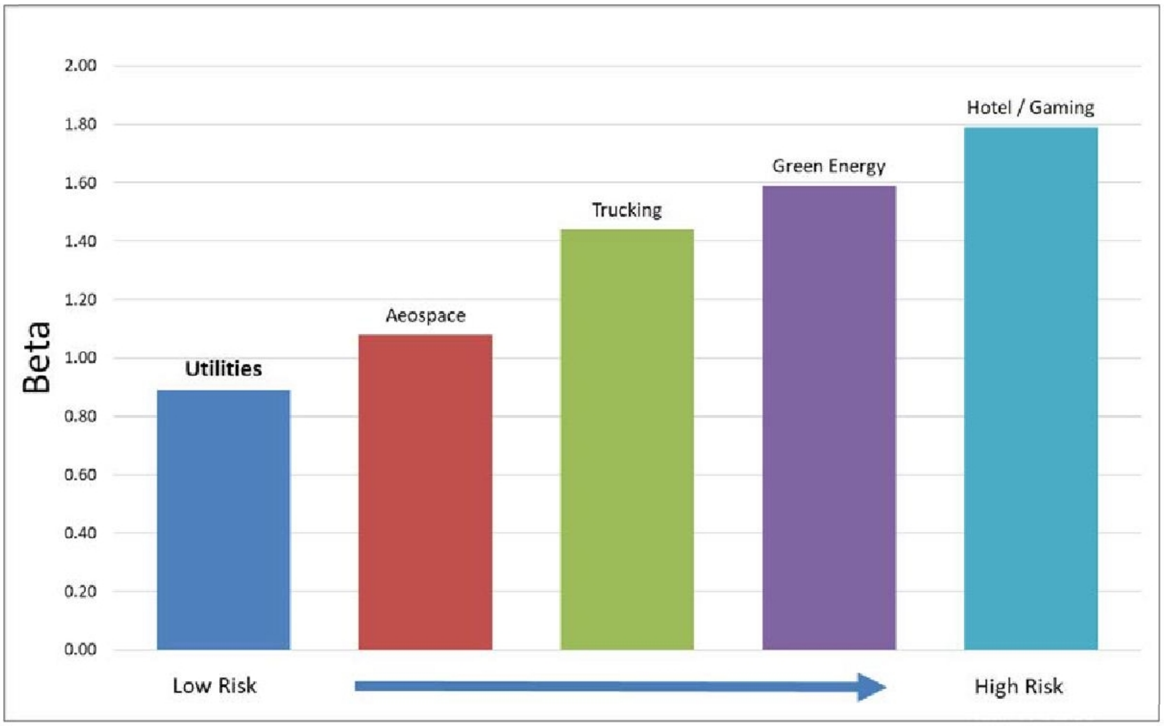
[35] *See* Zvi Bodie, Alex Kane & Alan J. Marcus, *Essentials of Investments* 382 (9th ed., McGraw-Hill/Irwin 2013).

[36] Zvi Bodie, Alex Kane & Alan J. Marcus, *Essentials of Investments* 383 (9th ed., McGraw-Hill/Irwin 2013).

[37] *See e.g.,* Zvi Bodie, Alex Kane & Alan J. Marcus, *Essentials of Investments* 382 (9th ed., McGraw-Hill/Irwin 2013); *see also* Aswath Damodaran, Investment Valuation: Tools and Techniques for Determining the Value of Any Asset 196 (3rd ed., John Wiley & Sons, Inc. 2012).

[38] *See* Betas by Sector (US) at http://pages.stern.nyu.edu/~adamodar/. The exact beta calculations are not as important as illustrating the well-known fact that utilities are low-risk companies. The fact that the utility industry is one of the lowest risk industries in the country should not change from year to year.

Figure 6:
Beta by Industry



The fact that utilities are defensive firms that are exposed to little market risk is beneficial to society. When the business cycle enters a recession, consumers can be assured that their utility companies will be able to maintain normal business operations and provide safe and reliable service under prudent management. Likewise, utility investors can be confident that utility stock prices will not fluctuate widely. So, while it is preferable for utilities to be defensive firms that experience little market risk and relatively insulated from market conditions, this should also be appropriately reflected in CPA's awarded return.

V. DCF ANALYSIS

Q. Describe the DCF Model.

A. The DCF Model is based on a fundamental financial model called the "dividend discount model," which maintains that the value of a security is equal to the present value of the future cash flows it generates. Cash flows from common stock are paid to investors in the form of dividends. There are several variations of the DCF Model. These versions, along with other formulas and theories related to the DCF Model are discussed in more detail in Appendix A.

Q. Describe the inputs to the DCF Model.

A. There are three primary inputs in the DCF Model: (1) stock price; (2) dividend; and (3) the sustainable growth rate. The stock prices and dividends are known inputs based on recorded data, while the growth rate projection must be estimated. I discuss each of these inputs separately below.

A. Stock Prices and Dividends

Q. How did you determine the stock price input of the DCF Model?

A. For the stock price (P_0), I used a 30-day average of stock prices for each company in the proxy group.[39] Analysts sometimes rely on average stock prices for longer periods (e.g., 60, 90, or 180 days). According to the efficient market hypothesis, however, markets reflect all relevant information available at a particular time, and prices adjust

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[39] Exhibit DJG-3.

instantaneously to the arrival of new information.[40] Past stock prices, in essence, reflect outdated information. The DCF Model used in utility rate cases is a derivation of the dividend discount model, which is used to determine the current value of an asset. Thus, according to the dividend discount model and the efficient market hypothesis, the value for the "P_0" term in the DCF Model should technically be the current stock price, rather than an average.

Q. Why did you use a 30-day average for the current stock price input?

A. Using a short-term average of stock prices for the current stock price input adheres to market efficiency principles while avoiding any irregularities that may arise from using a single current stock price. In the context of a utility rate proceeding there is a significant length of time from when an application is filed, and testimony is due. Choosing a current stock price for one particular day could raise a separate issue concerning which day was chosen to be used in the analysis. In addition, a single stock price on a particular day may be unusually high or low. It is arguably ill-advised to use a single stock price in a model that is ultimately used to set rates for several years, especially if a stock is experiencing some volatility. Thus, it is preferable to use a short-term average of stock prices, which represents a good balance between adhering to well-established principles of market efficiency while avoiding any unnecessary contentions that may arise from using a single

[40] *See* Eugene F. Fama, *Efficient Capital Markets: A Review of Theory and Empirical Work*, Vol. 25, No. 2 The Journal of Finance 383 (1970).

stock price on a given day. The stock prices I used in my DCF analysis are based on 30-day averages of adjusted closing stock prices for each company in the proxy group.[41]

Q. Describe how you determined the dividend input of the DCF Model.

A. The dividend term in the DCF Model represents dividends per share (d_0). I obtained the most recent quarterly dividend paid for each proxy company and annualized those dividends.[42]

Q. Are the stock price and dividend inputs for each proxy company a significant issue in this case?

A. No. Although my stock price and dividend inputs are more recent than those used by Mr. Moul, there is not a statistically significant difference between them because utility stock prices and dividends are generally quite stable. This is another reason that cost of capital models such as the CAPM and the DCF Model are well-suited to be used for utilities. The differences between my DCF Model and Mr. Moul's DCF Model are primarily driven by differences in our growth rate estimates, which are further discussed below.

B. Growth Rate

Q. Summarize the growth rate input in the DCF Model.

A. The most critical input in the DCF Model is the growth rate. Unlike the stock price and dividend inputs, the growth rate input (g) must be estimated. As a result, the growth rate is often the most contentious DCF input in utility rate cases. The DCF model used in this

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[41] Exhibit DJG-3. Adjusted closing prices, rather than actual closing prices, are ideal for analyzing historical stock prices. The adjusted price provides an accurate representation of the firm's equity value beyond the mere market price because it accounts for stock splits and dividends.

[42] Exhibit DJG-4. Nasdaq Dividend History, http://www.nasdaq.com/quotes/dividend-history.aspx.

case is based on the sustainable growth valuation model. Under this model, a stock is valued by the present value of its future cash flows in the form of dividends. Before future cash flows are discounted by the cost of equity, however, they must be "grown" into the future by a sustainable growth rate. As stated above, one of the inherent assumptions of this model is that these cash flows in the form of dividends grow at a sustainable rate forever. For young, high-growth firms, estimating the growth rate to be used in the model can be especially difficult, and may require the use of multi-stage growth models. For mature, low-growth firms such as utilities, however, estimating the sustainable growth rate is more transparent. The growth term of the DCF Model is one of the most important, yet apparently most misunderstood, aspects of cost of equity estimations in utility regulatory proceedings. Therefore, I have devoted a more detailed explanation of this issue in the following sections, which are organized as follows:

(1) The Various Determinants of Growth

(2) Reasonable Estimates for Long-Term Growth

(3) Quantitative vs. Qualitative Determinants of Utility Growth: Circular References, "Flatworm" Growth, and the Problem with Analysts' Growth Rates

(4) Growth Rate Recommendation

1. <u>The Various Determinants of Growth</u>

Q. Describe the various determinants of growth.

A. Although the DCF Model directly considers the growth of dividends, there are a variety of growth determinants that should be considered when estimating growth rates. It should be noted that these various growth determinants are used primarily to determine the short-term growth rates in multi-stage DCF models. For utility companies, it is necessary to focus primarily on a long-term growth rate in dividends. This is also known as a "sustainable" growth rates, since this is the growth rate assumed for the company's dividends in perpetuity. That is not to say that these growth determinants cannot be considered when estimating sustainable growth; however, as discussed below, sustainable growth must be constrained much more than short-term growth, especially for young firms with high growth opportunities. Additionally, I briefly discuss these growth determinants here because it may reveal some of the source of confusion in this area.

A. Historical Growth

Looking at a firm's actual historical experience may theoretically provide a good starting point for estimating short-term growth. However, past growth is not always a good indicator of future growth. Some metrics that might be considered here are a historical growth in revenues, operating income, and net income. Since dividends are paid from earnings, estimating historical earnings growth may provide an indication of future earnings and dividend growth. In general, however, revenue growth tends to be more consistent and predictable than earnings growth because it is less likely to be influenced by accounting adjustments.[43]

B. Analyst Growth Rates

Analyst growth rates refer to short-term projections of earnings growth published by institutional research analysts such as Value Line and Bloomberg. A more detailed

[43] *See* Aswath Damodaran, *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset* 279 (3rd ed., John Wiley & Sons, Inc. 2012).

discussion of analyst growth rates, including the problems with using them in the DCF Model to estimate utility cost of equity, is provided in a later section.

C. Fundamental Determinants of Growth

Fundamental growth determinants refer to firm-specific financial metrics that arguably provide better indications of near-term sustainable growth. One such metric for fundamental growth considers the return on equity and the retention ratio. The idea behind this metric is that firms with high ROEs and retention ratios should have greater opportunities for growth.[44]

Q. Did you use any of these growth determinants in your DCF Model?

A. No. Primarily, these growth determinants discussed above would provide better indications of short- to mid-term growth for firms with average to high growth opportunities. Utilities, however, are mature, low-growth firms. While it may not be unreasonable on its face to use any of these growth determinants for the growth input in the DCF Model, we must keep in mind that the stable growth DCF Model considers only sustainable growth rates, which are constrained by certain economic factors, as discussed further below.

2. Reasonable Estimates for Sustainable Growth

Q. Describe what is meant by sustainable growth.

A. In order to make the DCF Model a viable, practical model, an infinite stream of future cash flows must be estimated and then discounted back to the present. Otherwise, each annual

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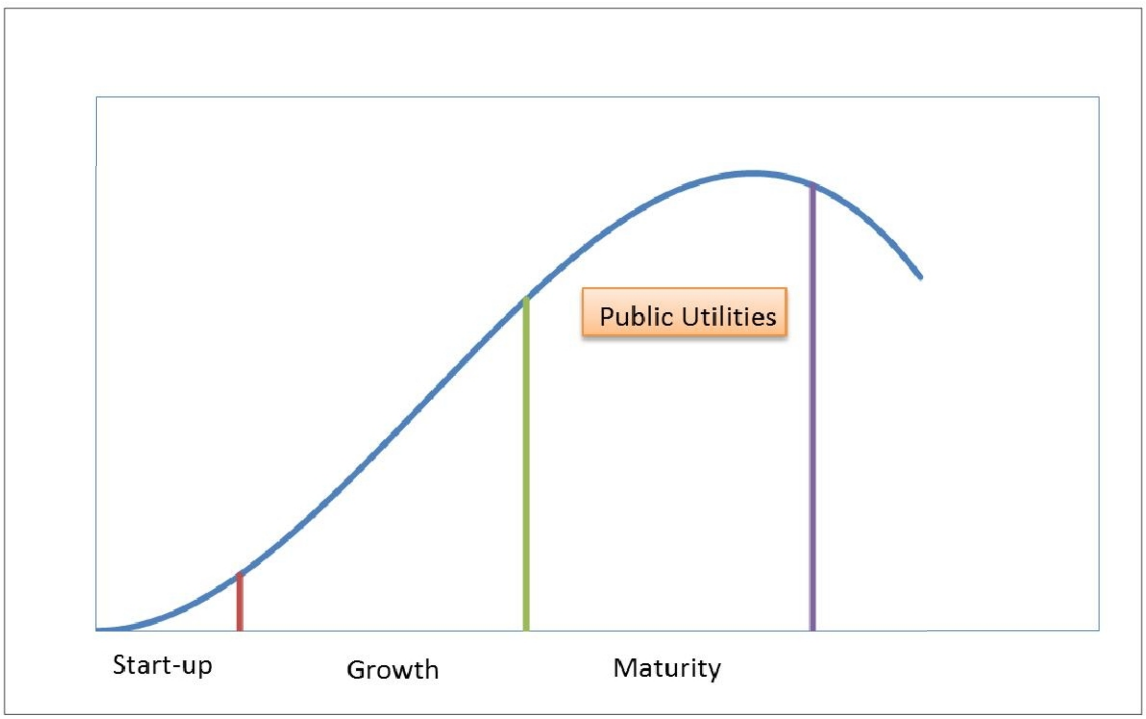
[44] Aswath Damodaran, *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset* 279 (3rd ed., John Wiley & Sons, Inc. 2012).

cash flow would have to be estimated separately. Some analysts use "multi-stage" DCF Models to estimate the value of high-growth firms through two or more stages of growth, with the final stage of growth being sustainable. However, it is not necessary to use multi-stage DCF Models to analyze the cost of equity of regulated utility companies. This is because regulated utilities are already in their "sustainable," low growth stage. Unlike most competitive firms, the growth of regulated utilities is constrained by physical service territories and limited primarily by ratepayer and load growth within those territories. The figure below illustrates the well-known business/industry life-cycle pattern.

Figure 7:
Industry Life Cycle



In an industry's early stages, there are ample opportunities for growth and profitable reinvestment. In the maturity stage however, growth opportunities diminish, and firms choose to pay out a larger portion of their earnings in the form of dividends instead of reinvesting them in operations to pursue further growth opportunities. Once a firm is in the maturity stage, it is not necessary to consider higher short-term growth metrics in multi-stage DCF Models; rather, it is sufficient to analyze the cost of equity using a stable growth DCF Model with one sustainable, sustainable growth rate.

Q. Is it true that the sustainable growth rate cannot exceed the growth rate of the economy, especially for a regulated utility company?

A. Yes. A fundamental concept in finance is that no firm can grow forever at a rate higher than the growth rate of the economy in which it operates.[45] Thus, the sustainable growth rate used in the DCF Model should not exceed the aggregate economic growth rate. This is especially true when the DCF Model is conducted on public utilities because these firms have defined service territories. As stated by Dr. Damodaran: "[i]f a firm is a purely domestic company, either because of internal constraints . . . or external constraints (such as those imposed by a government), the growth rate in the domestic economy will be the limiting value."[46]

In fact, it is reasonable to assume that a regulated utility would grow at a rate that is less than the U.S. economic growth rate. Unlike competitive firms, which might increase their growth by launching a new product line, franchising, or expanding into new and developing markets, utility operating companies with defined service territories cannot do any of these things to grow. Gross Domestic Product ("GDP") is one of the most widely used measures of economic production and is used to measure aggregate economic growth.

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[45] *See* Aswath Damodaran, *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset* 306 (3rd ed., John Wiley & Sons, Inc. 2012).

[46] Aswath Damodaran, *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset* 306 (3rd ed., John Wiley & Sons, Inc. 2012).

According to the Congressional Budget Office's 2021 Long-Term Budget Outlook, the long-term forecast for nominal U.S. GDP growth is 3.8%.[47] For mature companies in mature industries, such as utility companies, the sustainable growth rate will likely fall between the expected rate of inflation and the expected rate of nominal GDP growth. Thus, CPA's sustainable growth rate is between 2% and 4%.

Q. Is it reasonable to assume that the sustainable growth rate will not exceed the risk-free rate?

A. Yes. In the long term, the risk-free rate will converge on the growth rate of the economy. For this reason, financial analysts sometimes use the risk-free rate for the sustainable growth rate value in the DCF model.[48] I discuss the risk-free rate in further detail later in this testimony.

Q. Please summarize the various sustainable growth rate estimates that can be used as the sustainable growth rate in the DCF Model.

A. The reasonable sustainable growth rate determinants are summarized as follows:

1. Nominal GDP Growth
2. Real GDP Growth
3. Inflation
4. Current Risk-Free Rate

Any of the foregoing growth determinants could provide a basis for a reasonable input for the sustainable growth rate in the DCF Model for a utility company, including CPA. In general, we should expect that utilities will, at the very least, grow at the rate of projected

[47] Congressional Budget Office, The 2021 Long-Term Budget Outlook, https://www.cbo.gov/publication/56977.

[48] Aswath Damodaran, *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset* 307 (3rd ed., John Wiley & Sons, Inc. 2012).

inflation. However, the long-term growth rate of any U.S. company, especially utilities, will be constrained by nominal U.S. GDP growth.

3. <u>Qualitative Growth: The Problem with Analysts' Growth Rates</u>

Q. Describe the differences between "quantitative" and "qualitative" growth determinants.

A. Assessing "quantitative" growth simply involves mathematically calculating a historic metric for growth (such as revenues or earnings) or calculating various fundamental growth determinants using certain figures from a firm's financial statements (such as ROE and the retention ratio). However, any thorough assessment of company growth should be based upon a "qualitative" analysis. Such an analysis would consider specific strategies that company management will implement to achieve real sustainable growth in earnings. Therefore, it is important to begin the analysis of CPA's growth rate with this simple, qualitative question: how is this regulated utility going to achieve a real sustained growth in earnings? If this question were asked of a competitive firm, there could be several answers depending on the type of business model, such as launching a new product line, franchising, rebranding to target a new demographic, or expanding into a developing market. Regulated utilities, however, cannot engage in these potential growth opportunities.

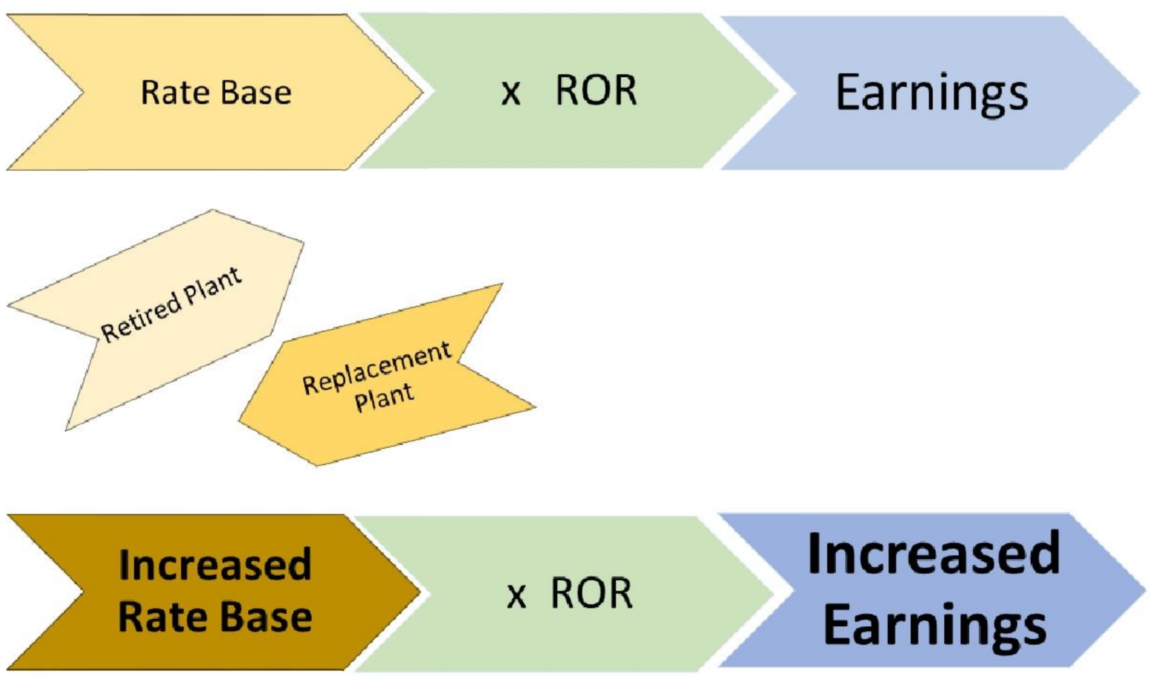
Q. Why is it especially important to emphasize real, qualitative growth determinants when analyzing whether a growth rate is fair for a regulated utility?

A. While qualitative growth analysis is important regardless of the entity being analyzed, it is especially important in the context of utility ratemaking. This is because the rate base rate of return model inherently possesses two factors that can contribute to distorted views of utility growth when considered exclusively from a quantitative perspective. These two factors are: (1) rate base and (2) the awarded ROE. I will discuss each factor further below. It is important to keep in mind that the ultimate objective of this analysis is to provide a foundation upon which to base the fair rate of return for the utility. Thus, we should strive to ensure that each individual component of the financial models used to estimate the cost of equity are also fair. If we consider only quantitative growth determinants, it may lead to projected growth rates that are overstated and ultimately unfair, because they result in inflated cost of equity estimates.

Q. How does rate base relate to growth determinants for utilities?

A. Under the rate base rate of return model, a utility's rate base is multiplied by its awarded rate of return to produce the required level of operating income. Therefore, increases to rate base generally result in increased earnings. Thus, utilities have a natural financial incentive to increase rate base. In short, utilities have a financial incentive to increase rate base regardless of whether such increases are driven by a corresponding increase in demand. A good, relevant example of this is seen in the early retirement of old, but otherwise functional coal plants in response to environmental regulations and replacing them with new generation assets. Under these circumstances, utilities have been able to increase their rate bases by a far greater extent than what any concurrent increase in demand would have required. In other words, utilities grew their earnings by simply retiring old assets and replacing them with new assets. This is not "real" or "sustainable" growth. If the tail of a flatworm is removed and regenerated, it does not mean the flatworm actually grew. Likewise, if a competitive, unregulated firm announced plans to close production plants and replace them with new plants, it would not be considered a real determinant of growth unless analysts believed this decision would directly result in increased market share for the company and a real opportunity for sustained increases in revenues and earnings. In the case of utilities, the mere replacement of "old plant" with "new plant" does not increase market share, attract new ratepayers, create franchising opportunities, or allow utilities to penetrate developing markets, but may result in short-term, quantitative earnings growth. However, this "flatworm growth" in earnings was merely the quantitative byproduct of the rate base rate of return model, and not an indication of real or qualitative growth and, therefore, using that data alone to estimate a growth rate is not fair. The following diagram in the figure below illustrates this concept.

Figure 8:
Analysts' Earnings Growth Projections: The "Flatworm Growth" Problem

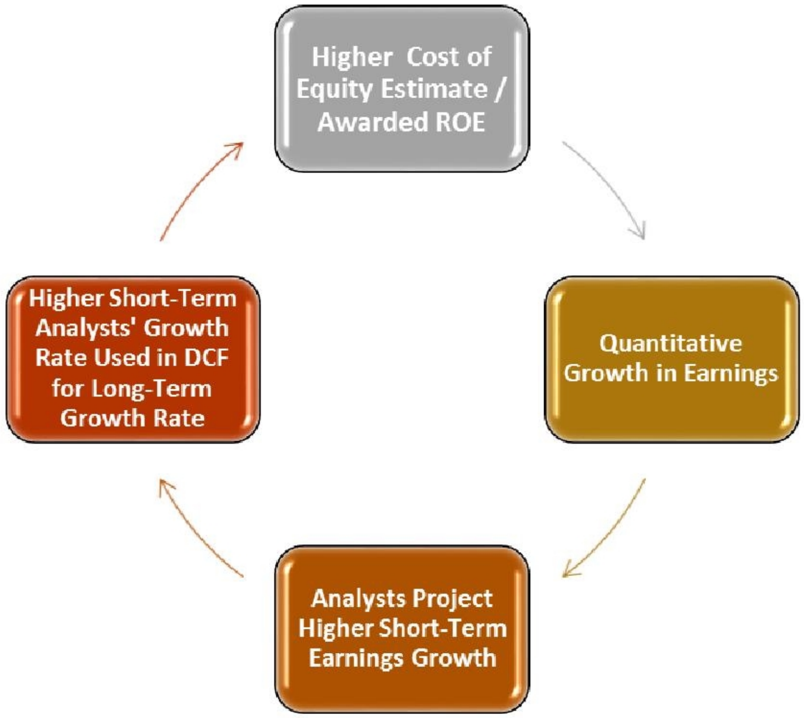


Of course, utilities might sometimes add "new plant" to meet a modest growth in ratepayer demand. However, as the foregoing discussion demonstrates, it would be more appropriate to consider load growth projections and other qualitative indicators, rather than mere increases to rate base or earnings, to attain a fair assessment of growth.

Q. Please discuss the other way in which analysts' earnings growth projections do not provide indications of real, qualitative growth for regulated utilities.

A. If we give undue weight to analysts' projections for utilities' earnings growth, it will not provide an accurate reflection of real, qualitative growth because a utility's earnings are heavily influenced by the ultimate figure that all this analysis is supposed to help us estimate: the awarded return on equity. This creates a circular reference problem or feedback loop. In other words, if a regulator awards an ROE that is above market-based cost of capital (which is often the case, as discussed above), this could lead to higher short-term growth rate projections from analysts. If these same inflated, short-term growth rate estimates are used in the DCF Model (as they often are by utility witnesses), it could lead to higher awarded ROEs; and the cycle continues, as illustrated in the figure below.

Figure 9:
Analysts' Earnings Growth Projections: The "Circular Reference" Problem



Therefore, it is not advisable to simply consider the quantitative growth projections published by analysts, as this practice will not necessarily provide fair indications of real, sustainable utility growth.

Q. Are there any other problems with relying on analysts' growth projections?

A. Yes. While the foregoing discussion shows two reasons why we cannot rely on analysts' growth rate projections to provide fair, qualitative indicators of utility growth in a stable growth DCF Model, the third reason is perhaps the most obvious and undisputable. Various institutional analysts—such as Zacks, Value Line, and Bloomberg—publish estimated projections of earnings growth for utilities. These estimates are short-term growth rate projections, ranging from 3 to 10 years. However, many utility ROE analysts inappropriately insert these short-term growth projections into the DCF Model as if they were *long-term* growth rate projections. For example, assume that an analyst at Bloomberg estimates that a utility's earnings will grow by 7% per year over the next 3 years. This analyst may have based this short-term forecast on a utility's plans to replace depreciated rate base (*i.e.*, "flatworm" growth) or on an anticipated awarded return that is above market-based cost of equity (*i.e.*, the "circular reference" problem). When a utility witness uses this figure in a DCF Model, however, it is the witness, not the Bloomberg analyst, who is testifying to the regulator that the utility's earnings will qualitatively grow by 7% per year over the long-term, which is an unrealistic assumption and a fundamentally different conclusion than that of the Bloomberg analyst.

4. <u>Sustainable Growth Rate Recommendation</u>

Q. Describe the growth rate input used in your DCF Model.

A. I considered various qualitative determinants of growth for CPA, along with the maximum allowed growth rate under basic principles of finance and economics. The following chart in the figure below summarizes the sustainable growth determinants discussed in this section.[49]

[49] Exhibit DJG-5.

Figure 10:
Sustainable Growth Rate Determinants[50]

Terminal Growth Determinants	Rate
Nominal GDP	3.8%
Real GDP	1.8%
Inflation	2.0%
Risk Free Rate	2.4%
Highest	**3.8%**

For the sustainable growth rate in my DCF model, I selected the maximum, reasonable sustainable growth rate of 3.8%, which means my model assumes that CPA's qualitative growth in earnings will qualitatively match the nominal growth rate of the entire U.S. economy over the long run – a charitable assumption.

Q. What are the results of your DCF model using a sustainable growth rate?

A. Using a sustainable growth rate equal to long-term GDP growth projections, the DCF indicates of cost of equity of 6.7% for CPA.[51]

Q. Did you also conduct a DCF analysis that considers analysts' short-term growth rate estimates for the sustainable growth rate input?

A. Yes. Despite my criticisms of using short-term analysts' growth rate projections for the sustainable growth rate input of the DCF Model, I also conducted a DCF analysis with such an assumption in the event the Commission would like to see this information.

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[50] The time periods for the projected annual growth rates for nominal GDP, real GDP, and inflation, are from 2021 – 2051; *see also* Exhibit DJG-5.

[51] *Id.*

Q. What are the results of your DCF model using analysts' short-term growth rates?

A. Using analysts' short-term growth rates in the DCF model, I calculate a result of 8.1%.[52]

C. <u>Response to Mr. Moul's DCF Model</u>

Q. Mr. Moul's DCF Model yielded a notably higher result. Did you find any problems with his analysis?

A. Yes. Mr. Moul's DCF Model produced cost of equity result of 11.42%, which includes a "leverage adjustment" of 0.99%.[53] As mentioned earlier, the results of Mr. Moul's DCF Model are overstated primarily because of a fundamental error regarding his growth rate inputs and his leverage adjustment.

Q. Describe the problems with Mr. Moul's assumed sustainable growth input.

A. Mr. Moul assumes a sustainable growth rate of 6.75% in his DCF Model.[54] This effectively means that he assumes the Company's earnings will grow at a rate of 6.75% per year, every year, in perpetuity. In arriving at this aggregate growth rate input, Mr. Moul considered growth rates as high as 11.5% for the proxy group,[55] which is <u>more than three times</u> the projected annual long-term nominal U.S. GDP growth. This means Mr. Moul's growth rate assumption violates the basic principle that no company can grow at a greater rate than the economy in which it operates *over the long-term*, especially a regulated utility company with a defined service territory. Furthermore, Mr. Moul relies on short-term, quantitative growth estimates published by analysts to support his assumptions. Mr. Moul

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[52] Exhibit DJG-6.

[53] Exhibit No. 400, Sch. 1.

[54] *Id.*

[55] Exhibit No. 400, Sch. 9.

acknowledges that his growth rate projections cover only a five-year period.[56] This period of time is not sufficient for a sustainable growth estimate. As discussed above, these analysts' estimates are inappropriate to use in the DCF Model as sustainable growth rates because they are estimates for short-term growth. For example, Mr. Moul assumes a sustainable growth rate estimate of 11.5% for South Jersey Industries (among other estimates), as reported by Value Line Investment Survey.[57] This means that an analyst at Value Line apparently thinks that South Jersey's earnings will quantitatively increase by 11.5% each year over the next several years (*i.e.*, the short-term). However, it is Mr. Moul, not the commercial analyst, who is suggesting to the Commission that South Jersey's earnings will increase by 11.5% (more than triple projected U.S. GDP growth) each year, every year, in perpetuity. Again, Mr. Moul is extrapolating the analyst's conclusions well beyond what the analyst actually projects. Furthermore, this assumption is simply not realistic, and it contradicts fundamental concepts of sustainable growth. Many of Mr. Moul's other short-term growth rate estimates also exceed projected U.S. GDP growth.

Q. Please describe Mr. Moul's leverage adjustment.

A. According to Mr. Moul, a leverage adjustment is necessary when "the DCF return applies to a capital structure used for ratemaking that is computed with book-value weighting rather than market-value weighting."[58]

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[56] Direct testimony of Paul R. Moul, p. 25.

[57] Exhibit No. 400, Sch. 9.

[58] Direct testimony of Paul R. Moul, p. 31, lines 10-11.

Q. Have you ever seen or heard of a witness apply a leverage adjustment like the one Mr. Moul is proposing?

A. No. I have testified in numerous proceedings on the issue of cost of capital and other regulatory issues and have reviewed extensive amounts of testimony from many witnesses on cost of capital issues. Other than Mr. Moul's proposed leverage adjustments in prior cases, I cannot recall a witness applying a "leverage adjustment" in the way Mr. Moul proposes. Mr. Moul is taking his base DCF cost of equity estimate and adding a significant amount of basis points to it to account for "leverage," but without a corresponding increase in the Company's ratemaking debt ratio (i.e., actual leverage). This means that essentially all other ROE witnesses (representing both utilities and customers) are underestimating their cost of equity estimates by the amount of a leverage adjustment, or Mr. Moul is overestimating his, based on my experience.

Q. Does the original DCF model have an input for a leverage adjustment?

A. No. The DCF model has been used by investors, analysts, managers, and academics for decades to assist with pricing assets and estimate the cost of equity of various assets and projects. I have not seen a variation of the DCF model in any financial textbook or other reliable source that presents the model with a "leverage adjustment" input similar to the way in which Mr. Moul presents the model in his testimony.

Q. Has the Commission rejected Mr. Moul's leverage adjustment in prior cases?

A. Yes.[59] In PPL's 2012 rate case, Mr. Moul proposed a substantially similar leverage adjustment. The Commission found that "[f]or the reasons developed by the OCA and

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[59] *Pa. P.U.C. v. PPL Elec. Util. Corp.*, Docket No. R-2012-2290597, Order at 52 (Dec. 28, 2012),

I&E, the Company's leverage adjustment should be denied."[60] In CPA's 2020 base rate case and PECO Gas' 2020 base rate case, the Commission allowed ROEs based upon DCF dividend yield and growth rate inputs, without leverage adjustments.[61] In Aqua PA's recent base rate case, the Commission denied Aqua PA's request to include a leverage adjustment as contrary to the public interest.[62]

Q. Have other commissions recently rejected Mr. Moul's leverage adjustment?

A. Yes. Recently, in the Application of Palmetto Wastewater Reclamation ("PWR"), the Public Service Commission of South Carolina rejected Mr. Moul's leverage adjustment.[63] Relying in part on my testimony in the PWR case, the South Carolina commission agreed that "Mr. Moul's 0.97% leverage adjustment is not appropriate."[64]

Q. Do you agree with Mr. Moul's leverage adjustment?

A. No. Mr. Moul's proposed leverage adjustment is entirely unnecessary and inappropriate, and it has the effect of further inflating a DCF result that is already overestimated. Mr. Moul's leverage adjustment is based on the Hamada formula, which is further discussed below.

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[60] *Id*. at p. 52.

[61] *Pa. P.U.C. v. Columbia Gas of Pennsylvania, Inc.*, Docket No. R-2020-3018835, Order at141 (Feb. 19, 2021) (CPA 2020 Order). *Pa. P.U.C. v. PECO Energy – Gas Div.*, Docket No. R-2020-3018929, Order at 151-152 (June 22, 2021) (PECO 2020 Order).

[62] *Pa. P.U.C. v. Aqua Pennsylvania, Inc., et al.*, Docket Nos., R-2021-3027385, R-2021-3027386, Order at 166-167 (May 16, 2022) (Aqua 2021 Order).

[63] *In re Application of Palmetto Wastewater Reclamation, Inc. for an Adjustment of Rates and Charges*, 2021 S.C. PUC LEXIS *1, *23 (Dec. 21, 2021).

[64] *Id*.

Q. What is the premise of the Hamada formula?

A. The Hamada formula can be used to analyze changes in a firm's cost of capital as it adds or reduces financial leverage, or debt, in its capital structure by starting with an "unlevered" beta and then "relevering" the beta at different debt ratios. As leverage increases, equity investors bear increasing amounts of risk, leading to higher betas. Before the effects of financial leverage can be accounted for, however, the effects of leverage must first be removed, which is accomplished through the Hamada formula. The Hamada formula for unlevering beta is stated as follows:[65]

Equation 2:
Hamada Formula

$$\beta_U = \frac{\beta_L}{\left[1 + (1 - T_c)\left(\frac{D}{E}\right)\right]}$$

where:	β_U	=	*unlevered beta (or "asset" beta)*
	β_L	=	*average levered beta of proxy group*
	T_C	=	*corporate tax rate*
	D	=	*book value of debt*
	E	=	*book value of equity*

Using this equation, the beta for the firm can be unlevered, and then "relevered" based on various debt ratios (by rearranging this equation to solve for β_L).

Q. Did Mr. Moul apply the Hamada formula correctly?

A. No. Mr. Moul's application of the Hamada formula is incorrect. I conducted the Hamada Model and present my results in my exhibits.[66] Using the Company's proposed capital structure and the levered betas published by Value Line, I calculate an unlevered beta of

[65] Damodaran *supra* n. 18, at 197. This formula was originally developed by Hamada in 1972.

[66] *See* Exhibit DJG-17.

0.52. When that beta is relevered to my proposed debt ratio of 48.3%, I calculate a cost of equity of 8.27%.[67] The indicated cost of equity from the financial models are necessarily connected to the capital structures of the proxy group. In other words, the fact that CPA has proposed a debt ratio that is lower than the average debt ratio of the proxy group should not necessarily result in an increase in the Company's indicated cost of equity when we "unlever" the proxy beta based on CPA's unreasonably low debt ratio, and then relever it to the debt ratio of the proxy group that was influencing the other cost of equity model inputs we relied upon. The indicated cost of equity should only increase with leverage if we actually increase the Company's proposed debt ratio, as I have demonstrated in the Hamada formula. The Commission should reject Mr. Moul's leverage adjustment in this case, as it has done in prior cases.

Q. Have you quantified the financial impact to ratepayers that Mr. Moul's leverage adjustment would have?

A. Yes. As addressed in the direct testimony of OCA witness Morgan, an increase of 0.99% to the ROE for Mr. Moul's inappropriate leverage adjustment would increase the revenue requirement by $15.97 million.

VI. CAPM ANALYSIS

Q. Describe the CAPM.

A. The CAPM is a market-based model founded on the principle that investors expect higher returns for incurring additional risk.[68] The CAPM estimates this expected return. The

[67] *Id.*

[68] William F. Sharpe, *A Simplified Model for Portfolio Analysis* 277–93 (Management Science IX 1963).

various assumptions, theories, and equations involved in the CAPM are discussed further in Appendix B. Using the CAPM to estimate the cost of equity of a regulated utility is consistent with the legal standards governing the fair rate of return. The U.S. Supreme Court has recognized that "the amount of risk in the business is a most important factor" in determining the allowed rate of return,[69] and that "the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks."[70] The CAPM is a useful model because it directly considers the amount of risk inherent in a business.

Q. Describe the inputs for the CAPM.

A. The basic CAPM equation requires only three inputs to estimate the cost of equity: (1) the risk-free rate; (2) the beta coefficient; and (3) the equity risk premium. Here is the CAPM formula:

Equation 3:
Basic CAPM

Cost of Equity = Risk-free Rate + (Beta × Equity Risk Premium)

Each input is discussed separately below.

A. The Risk-Free Rate

Q. Explain the risk-free rate.

A. The first term in the CAPM is the risk-free rate (R_F). The risk-free rate is simply the level of return investors can achieve without assuming any risk. The risk-free rate represents the

[69] *Wilcox*, 212 U.S. at 48.

[70] *Hope Natural Gas Co.*, 320 U.S. at 603.

bare minimum return that any investor would require on a risky asset. Even though no investment is technically void of risk, investors often use U.S. Treasury securities to represent the risk-free rate because they accept that those securities essentially contain no default risk. The Treasury issues securities with different maturities, including short-term Treasury bills, intermediate-term Treasury notes, and long-term Treasury bonds.

Q. Is it preferable to use the yield on long-term Treasury bonds for the risk-free rate in the CAPM?

A. Yes. In valuing an asset, investors estimate cash flows over long periods of time. Common stock is viewed as a long-term investment, and the cash flows from dividends are assumed to last indefinitely. Thus, short-term Treasury bill yields are rarely used in the CAPM to represent the risk-free rate. Short-term rates are subject to greater volatility and thus can lead to unreliable estimates. Instead, long-term Treasury bonds are usually used to represent the risk-free rate in the CAPM. I considered a 30-day average of daily Treasury yield curve rates on 30-year Treasury bonds in my risk-free rate estimate, which resulted in a risk-free rate of 3.0%.[71]

B. The Beta Coefficient

Q. How is the beta coefficient used in this model?

A. As discussed above, beta represents the sensitivity of a given security to movements in the overall market. The CAPM states that in efficient capital markets, the expected risk premium on each investment is proportional to its beta. Recall that a security with a beta greater (or less) than one is more (or less) risky than the market portfolio. An index such

[71] Exhibit DJG-7.

as the S&P 500 Index is used as a proxy for the market portfolio. The historical betas for publicly traded firms are published by various institutional analysts. Beta may also be calculated through a linear regression analysis, which provides additional statistical information about the relationship between a single stock and the market portfolio. As discussed above, beta also represents the sensitivity of a given security to the market as a whole. The market portfolio of all stocks has a beta equal to one. Stocks with betas greater than 1.0 are relatively more sensitive to market risk than the average stock. For example, if the market increases (or decreases) by 1.0%, a stock with a beta of 1.5 will, on average, increase (or decrease) by 1.5%. In contrast, stocks with betas of less than 1.0 are less sensitive to market risk. For example, if the market increases (or decreases) by 1.0%, a stock with a beta of 0.5 will, on average, only increase (or decrease) by 0.5%.

Q. Describe the source for the betas you used in your CAPM analysis.

A. I used betas recently published by Value Line Investment Survey. The average beta for the proxy group is less than 1.0. Thus, we have an objective measure to prove the well-known concept that utility stocks are generally less risky than the average stock in the market. While there is evidence suggesting that betas published by sources such as Value Line may actually overestimate the risk of utilities (and thus overestimate the CAPM), I used the betas published by Value Line to be conservative.[72]

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[72] Exhibit DJG-8; *see also* Appendix B for a more detailed discussion of raw beta calculations and adjustments.

C. The Equity Risk Premium

Q. Describe the Equity Risk Premium (ERP).

A. The final term of the CAPM is the ERP, which is the required return on the market portfolio less the risk-free rate ($R_M - R_F$). In other words, the ERP is the level of return investors expect above the risk-free rate in exchange for investing in risky securities. Many experts would agree that "the single most important variable for making investment decisions is the equity risk premium."[73] Likewise, the ERP is arguably the single most important factor in estimating the cost of capital in this matter. There are three basic methods that can be used to estimate the ERP: (1) calculating a historical average; (2) taking a survey of experts; and (3) calculating the implied ERP. I will discuss each method in turn, noting advantages and disadvantages of these methods.

1. Historical Average

Q. Describe the historical ERP.

A. The historical ERP may be calculated by simply taking the difference between returns on stocks and returns on government bonds over a certain period of time. Many practitioners rely on the historical ERP as an estimate for the forward-looking ERP because it is easy to obtain. However, there are disadvantages to relying on the historical ERP.

Q. What are the limitations of relying solely on a historical average to estimate the current or forward-looking ERP?

A. Many investors use the historic ERP because it is convenient and easy to calculate. What matters in the CAPM model, however, is not the actual risk premium from the past, but

[73] Elroy Dimson, Paul Marsh & Mike Staunton, *Triumph of the Optimists: 101 Years of Global Investment Returns* 4 (Princeton University Press 2002).

rather the current and forward-looking risk premium.[74] Some investors may think that a historic ERP provides some indication of the prospective risk premium; however, there is empirical evidence to suggest the prospective, forward-looking ERP is actually lower than the historical ERP. In a landmark publication on risk premiums around the world, *Triumph of the Optimists*, the authors suggest through extensive empirical research that the prospective ERP is lower than the historical ERP.[75] This is due in large part to what is known as "survivorship bias" or "success bias" – a tendency for failed companies to be excluded from historical indices.[76] From their extensive analysis, the authors make the following conclusion regarding the prospective ERP: "[t]he result is a forward-looking, geometric mean risk premium for the United States . . . of around 2½ to 4 percent and an arithmetic mean risk premium . . . that falls within a range from a little below 4 to a little above 5 percent."[77] Indeed, these results are lower than many reported historical risk premiums. Other noted experts agree:

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[74] *See* John R. Graham, Scott B. Smart & William L. Megginson, *Corporate Finance: Linking Theory to What Companies Do* 330 (3rd ed., South Western Cengage Learning 2010).

[75] *See* John R. Graham, Scott B. Smart & William L. Megginson, *Corporate Finance: Linking Theory to What Companies Do* 194 (3rd ed., South Western Cengage Learning 2010).

[76] Elroy Dimson, Paul Marsh & Mike Staunton, *Triumph of the Optimists: 101 Years of Global Investment Returns* 34 (Princeton University Press 2002).

[77] Elroy Dimson, Paul Marsh & Mike Staunton, *Triumph of the Optimists: 101 Years of Global Investment Returns* 194 (Princeton University Press 2002).

> The historical risk premium obtained by looking at U.S. data is biased upwards because of survivor bias. . . . The true premium, it is argued, is much lower. This view is backed up by a study of large equity markets over the twentieth century (*Triumph of the Optimists*), which concluded that the historical risk premium is closer to 4%.[78]

Regardless of the variations in historic ERP estimates, many scholars and practitioners agree that simply relying on a historic ERP to estimate the risk premium going forward is not ideal. Fortunately, "a naïve reliance on long-run historical averages is not the only approach for estimating the expected risk premium."[79]

Q. Did you rely on the historical ERP as part of your CAPM analysis in this case?

A. No. Due to the limitations of this approach, I relied on the ERP reported in expert surveys and the implied ERP method discussed below.

2. <u>Expert Surveys</u>

Q. Describe the expert survey approach to estimating the ERP.

A. As its name implies, the expert survey approach to estimating the ERP involves conducting a survey of experts including professors, analysts, chief financial officers, and other executives around the country and asking them what they think the ERP is. The IESE Business School conducts such a survey each year. Their 2021 expert survey reported an average ERP of 5.5%.[80]

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[78] Aswath Damodaran, *Equity Risk Premiums: Determinants, Estimation and Implications – The 2015 Edition* 17 (New York University 2015).

[79] *See* John R. Graham, Scott B. Smart & William L. Megginson, *Corporate Finance: Linking Theory to What Companies Do* 330 (3rd ed., South Western Cengage Learning 2010).

[80] Pablo Fernandez, Pablo Linares & Isabel F. Acin, *Market Risk Premium used in 171 Countries in 2016: A Survey with 6,932 Answers*, at 3 (IESE Business School 2015), copy available at http://www.valumonics.com/wp-content/uploads/2017/06/Discount-rate-Pablo-Fern%C3%A1ndez.pdf. IESE Business School is the graduate business school of the University of Navarra. IESE offers Master of Business Administration (MBA), Executive MBA and Executive Education programs. IESE is consistently ranked among the leading business schools in the world.

3. Implied ERP

Q. Describe the implied ERP approach.

A. The third method of estimating the ERP is arguably the best. The implied ERP relies on the stable growth model proposed by Gordon, often called the "Gordon Growth Model," which is a basic stock valuation model widely used in finance for many years.[81] This model is a mathematical derivation of the DCF Model. In fact, the underlying concept in both models is the same: the current value of an asset is equal to the present value of its future cash flows. Instead of using this model to determine the discount rate of one company, we can use it to determine the discount rate for the entire market by substituting the inputs of the model. Specifically, instead of using the current stock price (P_0), we will use the current value of the S&P 500 (V_{500}). Similarly, instead of using the dividends of a single firm, we will consider the dividends paid by the entire market. Additionally, we should consider potential dividends. In other words, stock buybacks should be considered in addition to paid dividends, as stock buybacks represent another way for the firm to transfer free cash flow to shareholders. Focusing on dividends alone without considering stock buybacks could understate the cash flow component of the model, and ultimately understate the implied ERP. The market dividend yield plus the market buyback yield gives us the gross cash yield to use as our cash flow in the numerator of the discount model. This gross cash yield is increased each year over the next five years by the growth rate. These cash flows must be discounted to determine their present value. The discount rate in each denominator is the risk-free rate (R_F) plus the discount rate (K). The following

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[81] Myron J. Gordon and Eli Shapiro, *Capital Equipment Analysis: The Required Rate of Profit* 102–10 (Management Science Vol. 3, No. 1 Oct. 1956).

formula shows how the implied return is calculated. Since the current value of the S&P is known, we can solve for K: the implied market return.[82]

Equation 4:
Implied Market Return

$$V_{500} = \frac{CY_1(1+g)^1}{(1+R_F+K)^1} + \frac{CY_2(1+g)^2}{(1+R_F+K)^2} + \cdots + \frac{CY_5(1+g)^5 + TV}{(1+R_F+K)^5}$$

where:	V_{500}	=	*current value of index (S&P 500)*
	$CY_{1\text{-}5}$	=	*average cash yield over last five years (includes dividends and buybacks)*
	g	=	*compound growth rate in earnings over last five years*
	R_F	=	*risk-free rate*
	K	=	*implied market return (this is what we are solving for)*
	TV	=	*terminal value* $= CY_5\,(1+R_F)\,/\,K$

The discount rate is called the "implied" return here because it is based on the current value of the index as well as the value of free cash flow to investors projected over the next five years. Thus, based on these inputs, the market is "implying" the expected return; or in other words, based on the current value of all stocks (the index price), and the projected value of future cash flows, the market is telling us the return expected by investors for investing in the market portfolio. After solving for the implied market return (K), we simply subtract the risk-free rate from it to arrive at the implied ERP.

Equation 5:
Implied Equity Risk Premium

$$Implied\ Expected\ Market\ Return - R_F = Implied\ ERP$$

Q. Discuss the results of your implied ERP calculation.

A. After collecting data for the index value, operating earnings, dividends, and buybacks for the S&P 500 over the past six years, I calculated the dividend yield, buyback yield, and

[82] *See* Exhibit DJG-9 for detailed calculation.

gross cash yield for each year. I also calculated the compound annual growth rate (g) from operating earnings. I used these inputs, along with the risk-free rate and current value of the index to calculate a current expected return on the entire market of 8.8%. I subtracted the risk-free rate to arrive at the implied equity risk premium of 5.8%.[83] Dr. Damodaran, one of the world's leading experts on the ERP, promotes the implied ERP method discussed above. He calculates monthly and annual implied ERPs with this method and publishes his results. Dr. Damodaran's average ERP estimate for May 2022 using several implied ERP variations was 5.1%.[84]

Q. What are the results of your final ERP estimate?

A. For the final ERP estimate I used in my CAPM analysis, I considered the results of the ERP surveys along with the implied ERP calculations and the ERP reported by Duff & Phelps.[85] The results are presented in the following figure:

[83] Exhibit DJG-9.

[84] Aswath Damodaran, *Implied Equity Risk Premium Update*, DAMODARAN ONLINE http://pages.stern.nyu.edu/~adamodar/.

[85] Exhibit DJG-10.

Figure 11:
Equity Risk Premium Results

IESE Business School Survey	5.5%
Duff & Phelps Report	5.5%
Damodaran (average)	5.1%
Garrett	5.8%
Average	**5.5%**
Highest	**5.8%**

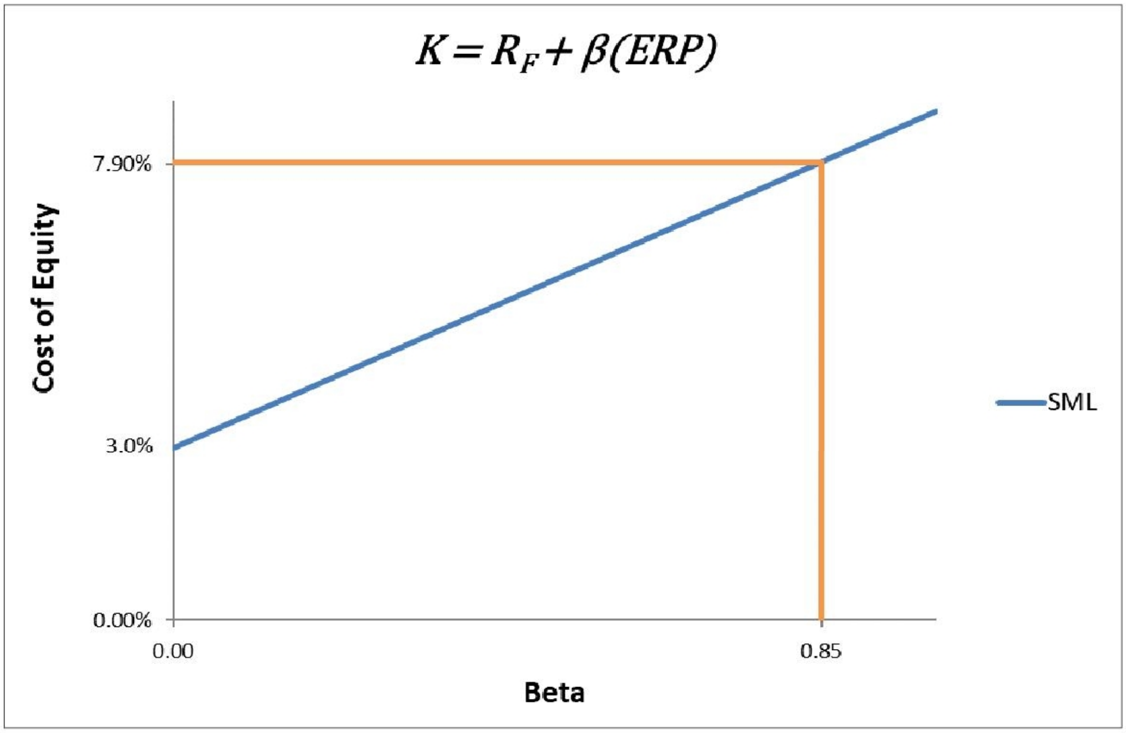
While it would be arguably reasonable to select any one of these ERP estimates to use in the CAPM, to be conservative, I selected the highest ERP estimate of 5.8% to use in my CAPM analysis. All else held constant, a higher ERP used in the CAPM will result in a higher cost of equity estimate.

Q. Please explain the final results of your CAPM analysis.

A. Using the inputs for the risk-free rate, beta coefficient, and ERP discussed above, I estimate that CPA's CAPM cost of equity is 7.9%.[86] The CAPM may be displayed graphically through what is known as the Security Market Line ("SML"). The following figure shows the expected return (cost of equity) on the y-axis, and the average beta for the proxy group on the x-axis. The SML intercepts the y-axis at the level of the risk-free rate. The slope of the SML is the equity risk premium.

[86] Exhibit DJG-11.

Figure 12:
CAPM Graph



The SML provides the rate of return that will compensate investors for the beta risk of that investment. Thus, at an average beta of 0.85 for the proxy group, the estimated CAPM cost of equity for CPA is 7.9%.

D. <u>Response to Mr. Moul's CAPM Analysis</u>

Q. Mr. Moul's CAPM analysis yields notably higher results. Did you find specific problems with Mr. Moul's CAPM assumptions and inputs?

A. Yes, I did. Mr. Moul estimates a CAPM cost of equity of 13.55%.[87] Mr. Moul has overestimated several inputs to the CAPM, including beta and the equity risk premium. He

[87] Direct Testimony of Paul R. Moul, p. 42, lines 4-6.

also includes an inappropriate size premium in his model. Each of these problems is discussed further below.

1. Beta

Q. Describe Mr. Moul's beta input to the CAPM.

A. Mr. Moul used a beta of 1.0 in his CAPM.[88] This beta is much higher than the average beta of Mr. Moul's proxy group as reported by Value Line, which is only 0.85.[89] The difference between a beta of 0.85 and 1.0 is significant, especially considering the fact that the beta of the entire market is 1.0. The betas reported by Value Line show that the proxy group is less risky than the market average, while the inflated beta derived by Mr. Moul would indicate the proxy group of utilities is riskier than the market average. Mr. Moul is essentially suggesting that the betas published by Value Line, an objective and widely-used source in utility regulation, are notably underestimated.

Q. Do you agree with Mr. Moul's beta input?

A. No. By using a beta of 1.0, Mr. Moul is implying that CPA is equal to the risk of the average company in the U.S. market. Such a proposition contradicts any objective or intuitive understanding of a regulated utility's position and operations in the U.S. market. In fact, it is more accurate to say that CPA, and its utility peers, are among the least risky companies in the world. CPA is a regulated monopoly with a captive customer base who provides an essential product with a relatively inelastic demand – operating under a regulatory framework that would essentially prevent it from experiencing financial failure.

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[88] Direct Testimony of Paul R. Moul, p. 43, lines 11-13.

[89] Exhibit DJG-8.

Competitive firms in the market do not enjoy the same risk-mitigating framework and protections. I have also discussed my disagreement with Mr. Moul's beta input from a technical perspective when I addressed his leverage adjustment above. In short, it is inappropriate to use Value Line betas as a starting point and then increase them to account for leverage. The Commission should reject Mr. Moul's CAPM results for his beta input alone. However, his estimate for the ERP is also unreasonably high, as further discussed below.

2. Equity Risk Premium

Q. Did Mr. Moul rely on a reasonable measure for the ERP?

A. No, he did not. Mr. Moul used an input of 9.68% for the ERP, which is not realistic.[90] The ERP is one of three inputs in the CAPM equation, and it is one of the most important factors for estimating the cost of equity in this case. As discussed above, I used three widely accepted methods for estimating the ERP, including consulting expert surveys, calculating the implied ERP based on aggregate market data, and considering the ERPs published by reputable analysts. The highest ERP found from my research and analysis is only 5.8%.

Q. Please discuss and illustrate how Mr. Moul's ERP compares with other estimates for the ERP.

A. The 2021 IESE Business School expert survey reports an average ERP of 5.5%. Similarly, Duff & Phelps recently estimated an ERP of 5.5%. Dr. Damodaran, one of the leading experts on the ERP, recently estimated an ERP of only 5.1%.[91] The chart in the following

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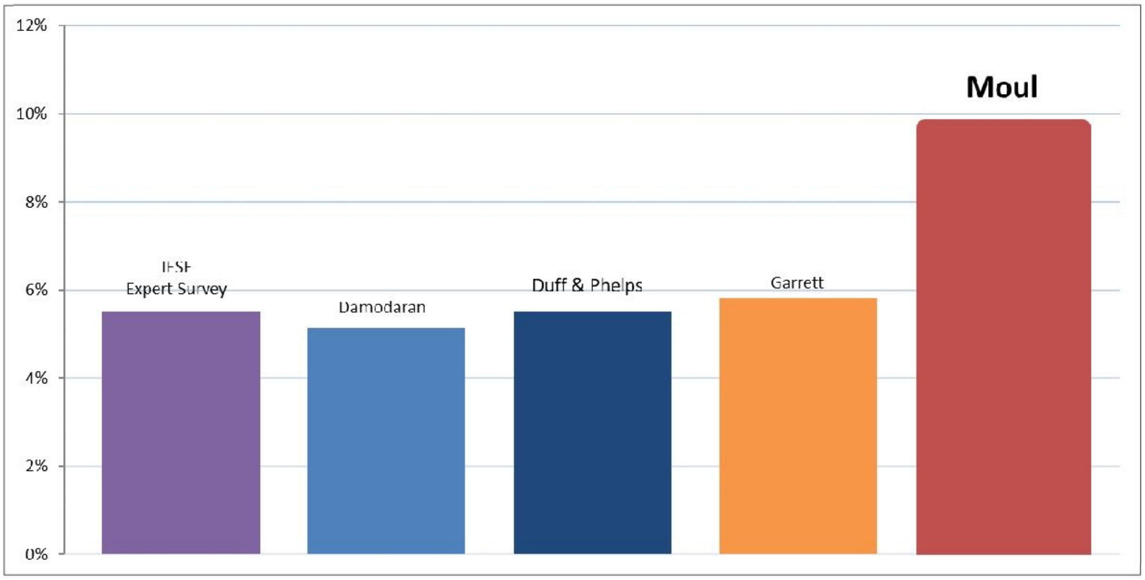
[90] Direct Testimony of Paul R. Moul, p. 45, lines 19-20.

[91] Aswath Damodaran, *Implied Equity Risk Premium Update*, DAMODARAN ONLINE, http://pages.stern.nyu.edu/~adamodar/. Dr. Damodaran estimates several ERPs using various assumptions.

figure illustrates that Mr. Moul's ERP estimate is far out of line with other reasonable, objective estimates for the ERP.[92]

Figure 13:
Equity Risk Premium Comparison



When compared with other independent sources for the ERP, as well as my estimate, Mr. Moul's ERP estimate is clearly not within the range of reasonableness. As a result, his CAPM cost of equity estimate is overstated.

3. <u>Size Premium</u>

Q. Describe Mr. Moul's size premium adjustment to his CAPM.

A. Mr. Moul adds 1.02% to his CAPM on the basis that CPA is smaller than the proxy group.[93]

Q. Do you agree with Mr. Moul's size premium?

A. No. The "size effect" phenomenon arose from a 1981 study conducted by Banz, which found that "in the 1936 – 1975 period, the common stock of small firms had, on average,

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[92] The ERP estimated by Dr. Damodaran is the highest of several ERP estimates under slightly differing assumptions.

[93] Exhibit No. 400, Sch. 1.

higher risk-adjusted returns than the common stock of large firms."[94] According to Ibbotson, Banz's size effect study was "[o]ne of the most remarkable discoveries of modern finance."[95] Perhaps there was some merit to this idea at the time, but the size effect phenomenon was short lived. Banz's 1981 publication generated much interest in the size effect and spurred the launch of significant new small cap investment funds. However, this "honeymoon period lasted for approximately two years. . . ."[96] After 1983, U.S. small-cap stocks actually underperformed relative to large cap stocks. In other words, the size effect essentially reversed. In *Triumph of the Optimists*, the authors conducted an extensive empirical study of the size effect phenomenon around the world. They found that after the size effect phenomenon was discovered in 1981, it disappeared within a few years:

> It is clear . . . that there was a global reversal of the size effect in virtually every country, with the size premium not just disappearing but going into reverse. Researchers around the world universally fell victim to Murphy's Law, with the very effect they were documenting – and inventing explanations for – promptly reversing itself shortly after their studies were published.[97]

In other words, the authors assert that the very discovery of the size effect phenomenon likely caused its own demise. The authors ultimately concluded that it is "inappropriate to use the term 'size effect' to imply that we should automatically expect there to be a small-cap premium," yet, this is exactly what utility witnesses often do in attempting to

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[94] Rolf W. Banz, *The Relationship Between Return and Market Value of Common Stocks* 3-18 (Journal of Financial Economics 9 (1981)).

[95] 2015 Ibbotson Stocks, Bonds, Bills, and Inflation Classic Yearbook 99 (Morningstar 2015).

[96] Elroy Dimson, Paul Marsh & Mike Staunton, *Triumph of the Optimists: 101 Years of Global Investment Returns* 131 (Princeton University Press 2002).

[97] *Id.* at 133.

artificially inflate the cost of equity with a size premium. Other prominent sources have agreed that the size premium is a dead phenomenon. According to Ibbotson:

> The unpredictability of small-cap returns has given rise to another argument against the existence of a size premium: that markets have changed so that the size premium no longer exists. As evidence, one might observe the last 20 years of market data to see that the performance of large-cap stocks was basically equal to that of small cap stocks. In fact, large-cap stocks have outperformed small-cap stocks in five of the last 10 years.[98]

In addition to the studies discussed above, other scholars have concluded similar results. According to Kalesnik and Beck:

> Today, more than 30 years after the initial publication of Banz's paper, the empirical evidence is extremely weak even before adjusting for possible biases. . . . The U.S. long-term size premium is driven by the extreme outliers, which occurred three-quarters of a century ago. . . . Finally, adjusting for biases . . . makes the size premium vanish. If the size premium were discovered today, rather than in the 1980s, it would be challenging to even publish a paper documenting that small stocks outperform large ones.[99]

For all of these reasons, the Commission should reject the arbitrary size premium proposed by the Company.

Q. Have other commissions recently rejected Mr. Moul's size adjustment?

A. Yes. Recently, in the Application of Palmetto Wastewater Reclamation ("PWR"), the Public Service Commission of South Carolina rejected Mr. Moul's size premium

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[98] 2015 Ibbotson Stocks, Bonds, Bills, and Inflation Classic Yearbook 112 (Morningstar 2015).

[99] Vitali Kalesnik and Noah Beck, *Busting the Myth About Size* (Research Affiliates 2014), available at https://www.researchaffiliates.com/Our%20Ideas/Insights/Fundamentals/Pages/284_Busting_the_Myth_About_Size.aspx (emphasis added).

adjustment.[100] Relying in part on my testimony in the PWR case, the South Carolina commission agreed that "Mr. Moul's 1.02% size adjustment is not appropriate."[101]

Q. Has the Commission adopted Mr. Moul's size adjustment in recent cases?

A. No. In utility base rate cases decided by the Commission in 2020 through May 2022, the Commission did not rely upon the utility's CAPM results which included size adjustments.[102]

VII. OTHER COST OF EQUITY ISSUES

Q. Are there any other issues raised in the Company's testimony to which you would like to respond?

A. Yes. In his testimony, Mr. Moul suggests that certain firm-specific risks and other factors should have an increasing effect on the cost of equity, apparently beyond that which is indicated by the CAPM and DCF Model. Mr. Moul also relies on comparable and expected earnings to support his cost of equity estimate. Finally, Mr. Moul also suggests that management performance should have an increasing effect on CPA's authorized ROE.

A. Firm-Specific Business Risks

Q. Describe Mr. Moul's testimony regarding business risks.

A. In his Direct Testimony, Mr. Moul suggests that the Company is exposed to additional risks beyond those inherent in the proxy group. According to Mr. Moul, such risks include

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[100] Order issued December 21, 2021, Application of Palmetto Wastewater Reclamation, before the Public Service Commission of South Carolina, p. 24.

[101] *Id.*

[102] CPA 2020 Order at 141; PECO Gas 2020 Order at 155, 160; Aqua 2021 Order at 177.

regulatory risks and operational risks, among other risks.[103] Mr. Moul also suggests that his cost of equity estimates for CPA reflect the inclusion of a weather normalization adjustment ("WNA").

Q. Do you agree with Mr. Moul that these firm-specific risk factors should influence CPA's cost of equity or awarded ROE?

A. No. All companies face business risks, including the other utilities in the proxy group; business risks are not unique to CPA. As discussed above, it is a well-known concept in finance that firm-specific risks are unrewarded by the market. This is largely because firm-specific risk can be eliminated through portfolio diversification. Scholars widely recognize the fact that market risk, or "systematic risk," is the only type of risk for which investors expect a return for bearing.[104]

Unlike interest rate risk, inflation risk, and other market risks that affect all companies in the stock market, the risk factors discussed by Mr. Moul are merely business risks specific to CPA. Investors do not require an additional term for these firm-specific business risks. Another way to consider this issue is to look at the CAPM and DCF Model. Neither model includes an input for business risks due to the well-known truth that investors do not expect a return for such risks. Therefore, the Company's firm-specific business risks, while perhaps relevant to other issues in the rate case, have no meaningful effect on the cost of equity estimate. Rather, it is market risk that is rewarded by the market, and this concept is thoroughly addressed in my CAPM analysis discussed above. Thus,

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[103] *See* Direct testimony of Paul R. Moul, pp. 7-13.

[104] *See* John R. Graham, Scott B. Smart & William L. Megginson, *Corporate Finance: Linking Theory to What Companies Do* 180 (3rd ed., South Western Cengage Learning 2010).

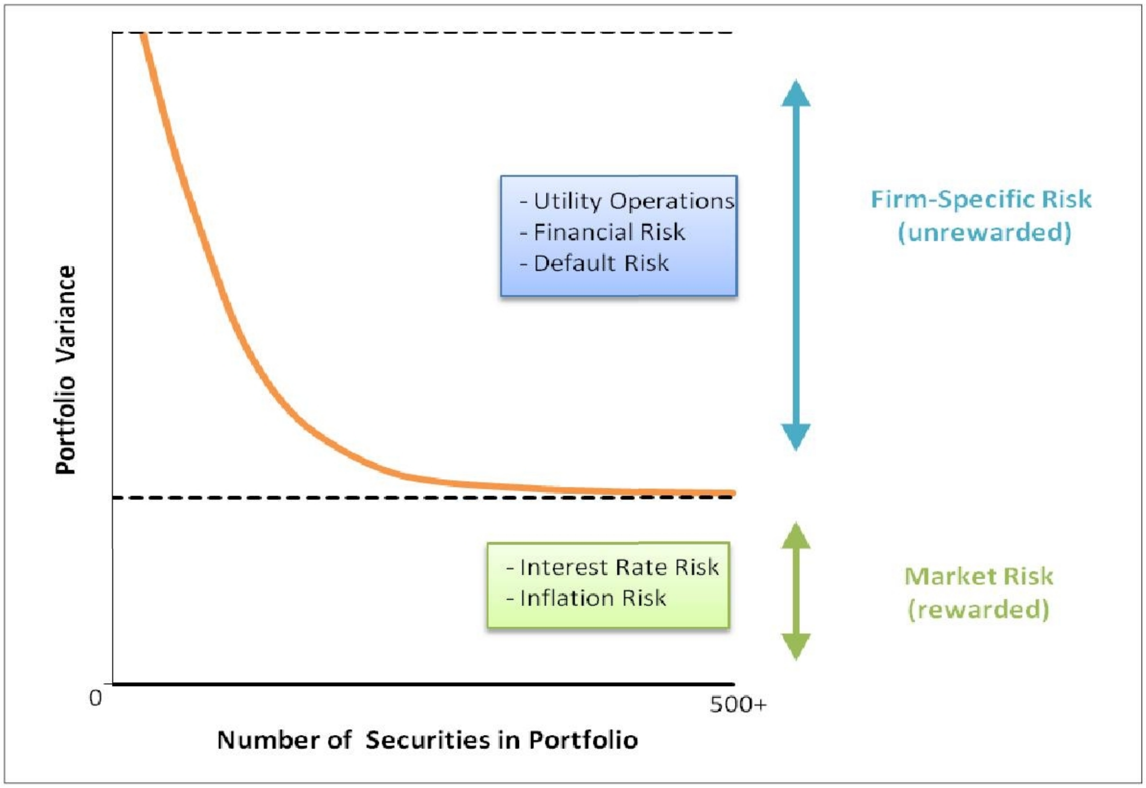
the Commission should reject any additional premium Mr. Moul has added to an already overstated cost of equity estimate to account for any firm-specific risks. This concept was also discussed and illustrated above in my testimony.[105]

Q. Is CPA's proposed RNA a type of firm-specific business risk that should not directly affect the Company's cost of equity estimate?

A. Yes. OCA witness Jerome Mierzwa makes specific recommendations regarding the RNA in his direct testimony. Regardless of what the Commission decides regarding the RNA, it would not affect the Company's cost of equity estimate, nor should it impact a fair authorized ROE. Regulatory mechanisms relate to firm-specific risks, which are not rewarded by the market, and thus do not materially impact the cost of equity. These important concepts are again illustrated in the figure below.

[105] *See* Section IV above.

Figure 14:
Effects of Portfolio Diversification



The financial models presented in my testimony (particularly the CAPM) directly measure market risk, which is the type of risk the Commission should focus on when determining a fair authorized ROE.

B. Comparable Earnings

Q. Please summarize Mr. Moul's comparable earnings approach.

A. Mr. Moul also analyzed the returns realized by non-regulated companies as an indication of CPA's cost of equity.[106] The results of his comparable earnings approach indicate a cost of equity for CPA of 12.45%.[107]

Q. Do you agree with Mr. Moul's analyses?

A. No. There are three notable problems with Mr. Moul's comparable earnings approach: (1) earned returns do not indicate the cost of equity; (2) using earned returns in a model used to set the awarded ROE in regulatory proceedings creates an echo chamber void of technical value; and (2) there is no marginal value in analyzing competitive firms beyond those of the utility proxy group in terms of assessing a comparable risk profile. First, "earned" returns and "expected" returns are entirely different concepts. For example, we might conduct a cost of equity analysis on ABC Corp's stock and determine that, based on the risk inherent in that investment, we should "expect" a 50% return on our investment based on the (relatively high) risk assumed in the investment. Suppose, however, the ABC Corp actually earns a return of only 2% in a particular period. This does not mean that the 2% return has any bearing on what investors actually "required" given the company's risk profile, or that they will not continue to require a 50% in their risky investment going forward. In this example, it is also impossible for 2% to represent an expected return in any risky asset since this return would be lower than the risk-free rate. Thus, Mr. Moul's

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[106] Direct testimony of Paul R. Moul, pp. 46-49.

[107] Exhibit No. 400, Sch. 1.

analysis of earned returns does not add any value for assessing the cost of equity for CPA beyond the results of the CAPM and DCF Model.

The second problem with Mr. Moul's comparable earnings model is that it simply creates an echo chamber that necessarily excludes the most critical component in determining the Company's most fair authorized return on equity: the actual *cost* of equity. If an earned return is particularly high in a given period, and that earned return is the primary driver for setting the authorized ROE, it will result in an unfairly high ROE and potentially lead to another inflated, earned return, which starts the cycle over again. Moreover, none of these factors would relate to the utility's actual cost of equity, which is most appropriately measured by the CAPM and DCF Model.

The final problem with Mr. Moul's comparable earnings approach is that it uses the earned returns of non-regulated, non-utility companies as an indication of CPA's cost of equity. Despite the title of Mr. Moul's model, competitive, non-utility companies are decisively *incomparable* to CPA. Primarily, the risk profiles of competitive firms will tend to be higher than those of low-risk utilities; thus, their cost of equity estimates will generally be higher. Not surprisingly, the results of Mr. Moul's "comparable" earnings approach are higher than those produced by the models he conducted on the utility proxy group.[108] There is simply no marginal value added to the process of estimating utility cost of equity by using non-utility, non-regulated firms in a proxy group that should contain firms with relatively similar risk profiles to the regulated utility being analyzed.

[108] Exhibit No. 400, Sch. 1.

C. Management Performance Premium

Q. Please describe Mr. Moul's management performance premium.

A. Mr. Moul includes an additional 0.25% to his cost of equity estimate for the "Company's exemplary management."[109]

Q. Do you agree with Mr. Moul's management performance premium?

A. No. Such a premium is completely unrelated to CPA's cost of equity estimate. In financial textbooks, treatises, and other authoritative literature, I have not seen anyone suggest that this type of premium should be added to a cost of equity estimate. It is inappropriate to add an arbitrary and unsupported premium on top of awarded ROE recommendation that is at least 300 basis points higher than CPA's actual cost of equity.

Q. Did the Commission reject a management performance premium in a recent CPA case?

A. Yes. In CPA's 2020 base rate case, CPA requested a 20-basis point premium for management effectiveness.[110] The Commission adopted the presiding Administrative Law Judge's (ALJ) recommendation that no adjustment be allowed.[111] The ALJ found a lack of sufficient evidence. Further, the "ALJ reasoned that while effective operating and maintenance cost measures should flow through to ratepayers and/or investors," allowing such a ROE premium "defeats the purpose of cutting expenses to benefit ratepayers…."[112]

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[109] Direct Testimony of Paul R. Moul, p. 6, line 12. Company witness Mark Kempic describes the specific management activities. Direct Testimony of Mark Kempic, pp. 25-48.

[110] CPA 2020 Order 132-134.

[111] *Id.* at 134.

[112] *Id.* at 134.

Q. Should the Commission deny CPA's current request for a management performance premium?

A. Yes. There are several reasons why the Commission should deny the Company's claim. First, the Company's management performance claim in this case relies in part on information which was reviewed in the 2020 rate case and found insufficient, such as Columbia's most recent management and operations audit.[113] In the interim, CPA filed and settled a base rate case in 2021, based upon a fully projected future test years ending December 31, 2022.[114] Second, OCA witnesses Roger Colton and Noah Eastman have evaluated elements of the Company's management performance claim and found the Company's claim of superior management effectiveness insufficient. The Company already has an obligation to provide service that is safe, adequate, reasonable and efficient. I recommend the Commission again deny the Company's request for a management performance premium.[115]

Q. Have you quantified the financial impact to ratepayers that Mr. Moul's management performance premium would have?

A. Yes. As addressed in the direct testimony of OCA witness Morgan, an increase of 0.25% to the ROE for Mr. Moul's management performance premium would increase the revenue requirement by $5.89 million. This is greater than the estimated $2.6 million cost of CPA's 2020 request for an increase of 0.20%, which the Commission denied in February 2021. [116]

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[113] *Id.* at 132-135,

[114] *Pa. P.U.C. v. Columbia Gas of Pennsylvania, Inc.*, Docket No. R-2021-3024296, Order at 2 (Dec. 16, 2021)(CPA 2021 Order).

[115] See, CPA 2020 Order at 132-135.

[116] *Id.*

VIII. COST OF EQUITY SUMMARY

Q. Please summarize the results of the CAPM and DCF Model discussed above.

A. The following figure shows the cost of equity results from each model I employed in this case.[117]

Figure 15:
Cost of Equity Summary

Cost of Equity Model	Result
DCF (Sustainable Growth)	6.7%
DCF (Analyst Growth)	8.1%
Capital Asset Pricing Model	7.9%
Hamada (at debt ratio of 48.3%)	8.3%
Average	**7.7%**
Highest	**8.3%**

The average cost of equity resulting from these various models is 7.7%. This 7.7% is what I have described above as the market-based cost of equity for CPA.

Q. Please comment on the Commission's preference for DCF results.

A. It is my understanding that in prior cases, the Commission has indicated a preference for the results of the DCF Model to estimate cost of equity, while using the CAPM results as

[117] Exhibit DJG-12.

an alternative to verify the reasonableness of the results. I would note that, unlike the DCF Model, the CAPM was specifically designed to estimate cost of equity, and led to a Nobel Prize for its creators. The CAPM has direct inputs designed to assess market risk and the relative impacts of market risks on individual firms. The CAPM also avoids some of the circular reference problems inherent in the DCF Model when it issued to set the authorized ROE in utility rate cases. Based on the results of my two DCF analyses and consideration of the CAPM result (without a debt ratio adjustment), then a cost of equity of no higher than 8.1% would be indicated.

Q. Please summarize the results of your Hamada model included in the table above.

A. As discussed above in response to Mr. Moul's inaccurate leverage adjustment to his DCF analysis, a proper consideration of leverage (as an increasing factor to the cost of equity estimate), would actually include an adjustment to increase CPA's ratemaking debt ratio. In this case, I am proposing a ratemaking debt ratio of 48.3% for CPA, as discussed in the capital structure section below. Since this represents an upward adjustment to CPA's actual debt ratio, it is not unreasonable to consider its impact on the Company's cost of equity. This impact is most appropriately measured through the Hamada formula. Thus, if the Commission were to authorize a ratemaking debt ratio of 48.3% for CPA, then the CAPM cost of equity indication for the Company would be about 8.3%, which is still lower than my authorized ROE recommendation of 8.75%.

Q. Please describe why you selected 8.75% as your awarded ROE recommendation?

A. CPA's 2020 base rate case resulted in an authorized ROE of 9.86%, based upon an FPFTY ending December 31. 2021.[118] CPA's 2021 base rate request was resolved by settlement, with no ROE specified.[119] The cost of equity models I have employed using current information indicate a cost of equity of about 7.7% for the Company. As discussed above, I believe it is advisable for the Commission to move towards a market-based cost of equity gradually, rather than abruptly. An awarded ROE of 8.75% would reflect an approximate midpoint between CPA's last authorized ROE and its indicated cost of equity under current market conditions.

IX. CAPITAL STRUCTURE

Q. Describe in general the concept of a company's capital structure.

A. "Capital structure" refers to the way a company finances its overall operations through external financing. The primary sources of long-term, external financing are debt capital and equity capital. Debt capital usually comes in the form of contractual bond issues that require the firm to make payments, while equity capital represents an ownership interest in the form of stock. Because a firm cannot pay dividends on common stock until it satisfies its debt obligations to bondholders, stockholders are referred to as "residual claimants." The fact that stockholders have a lower priority to claims on company assets increases their risk and the required return relative to bondholders. Thus, equity capital has a higher cost than debt capital. Firms can reduce their WACC by recapitalizing and increasing their debt

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118 CPA 2020 Order at 1, 141.

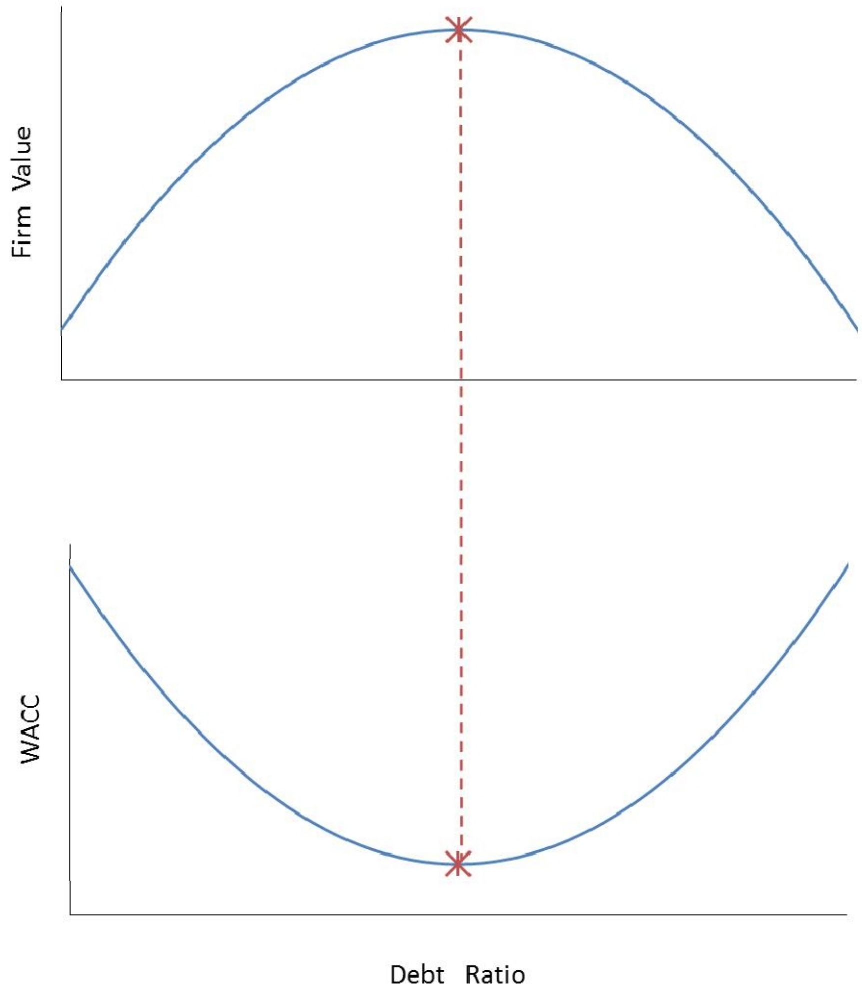
119 CPA 2021 Order at 12-13 (Dec. 16, 2021).

financing. In addition, because interest expense is deductible, increasing debt also adds value to the firm by reducing the firm's tax obligation.

Q. Is it true that, by increasing debt, competitive firms can add value and reduce their WACC?

A. Yes, it is. A competitive firm can add value by increasing debt. After a certain point, however, the marginal cost of additional debt outweighs its marginal benefit. This is because the more debt the firm uses, the higher interest expense it must pay, and the likelihood of loss increases. This also increases the risk of non-recovery for both bondholders and shareholders, causing both groups of investors to demand a greater return on their investment. Thus, if debt financing is too high, the firm's WACC will increase instead of decrease. The following figure illustrates these concepts.

Figure 16:
Optimal Debt Ratio



As shown in this figure, a competitive firm's value is maximized when the WACC is minimized. In both graphs, the debt ratio is shown on the x-axis. By increasing its debt ratio, a competitive firm can minimize its WACC and maximize its value. At a certain point, however, the benefits of increasing debt do not outweigh the costs of the additional risks to both bondholders and shareholders, as each type of investor will demand higher returns for the additional risk they have assumed.[120]

Q. Does the rate base rate of return model effectively incentivize utilities to operate at the optimal capital structure?

A. No. While it is true that competitive firms maximize their value by minimizing their WACC, this is not the case for regulated utilities. Under the rate base rate of return model, a higher WACC results in higher rates, all else held constant. The basic revenue requirement equation is as follows:

Equation 6:
Revenue Requirement for Regulated Utilities

$$RR = O + d + T + \boldsymbol{r}(A - D)$$

where:	RR	=	*revenue requirement*
	O	=	*operating expenses*
	d	=	*depreciation expense*
	T	=	*corporate tax*
	$\boldsymbol{r}$	=	***weighted average cost of capital (WACC)***
	A	=	*plant investments*
	D	=	*accumulated depreciation*

As shown in this equation, utilities can increase their revenue requirement by <u>increasing</u> their WACC, not by minimizing it. Thus, because there is no incentive for a regulated utility to minimize its WACC, a commission standing in the place of competition must ensure that the regulated utility is operating at the lowest reasonable WACC.

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[120] *See* John R. Graham, Scott B. Smart & William L. Megginson, *Corporate Finance: Linking Theory to What Companies Do* 440-41 (3rd ed., South Western Cengage Learning 2010).

Q. Can utilities generally afford to have higher debt levels than other industries?

A. Yes. Because regulated utilities have large amounts of fixed assets, stable earnings, and low risk relative to other industries, they can afford to have relatively higher debt ratios (or "leverage"). As aptly stated by Dr. Damodaran:

> Since financial leverage multiplies the underlying business risk, it stands to reason that firms that have high business risk should be reluctant to take on financial leverage. It also stands to reason that firms that operate in stable businesses should be much more willing to take on financial leverage. Utilities, for instance, have historically had high debt ratios but have not had high betas, mostly because their underlying businesses have been stable and fairly predictable.[121]

Note that the author explicitly contrasts utilities with firms that have high underlying business risk. Because utilities have low levels of risk and operate a stable business, they should generally operate with relatively high levels of debt to achieve their optimal capital structure.

Q. Are the capital structures of the proxy group a source that can be used to assess a prudent capital structure?

A. Yes. Since we consider other metrics of the proxy group when estimating cost of equity, it is also appropriate to consider the financing mix of these companies when assessing a fair ratemaking debt ratio for CPA.

Q. How can utility regulatory commissions help overcome the fact that utilities do not have a natural financial incentive to minimize their cost of capital?

A. While under the rate base rate of return model utilities do not have a natural financial incentive to minimize their cost of capital, competitive firms, in contrast, can and do maximize their value by minimizing their cost of capital. Competitive firms minimize their

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[121] Aswath Damodaran, *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset* 196 (3rd ed., John Wiley & Sons, Inc. 2012) (emphasis added).

cost of capital by including a sufficient amount of debt in their capital structures. They do not do this because it is required by a regulatory body, but rather because their shareholders demand it in order to maximize value. The Commission can provide this incentive to CPA by acting as a surrogate for competition and setting rates consistent with a capital structure that is similar to what would be appropriate in a competitive, as opposed to a regulated, environment.

Q. Please describe how you assessed the reasonableness of CPA's proposed capital structure in this case.

A. In this case, I examined the capital structures of the proxy group, as well as the capital structure of CPA's parent company, NiSource. I also looked at capital structures observed in other competitive industries to assess the overall reasonableness of my recommendation.

Q. Please describe the debt ratios of the proxy group.

A. Again, Mr. Moul and I used the same proxy group of utilities for our cost of capital analyses. The proxy group of utilities reported an average debt ratio of 53%, which is considerably higher than CPA's proposed long-term debt ratio of only 43.2%.[122]

Q. What is the capital structure of CPA's parent company, NiSource?

A. At the end of 2021, NiSource reported a debt ratio of 56.9%, which is even higher than the average debt ratio of the proxy group, and significantly higher than CPA's proposed long-term debt ratio.

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[122] Exhibit DJG-14.

Q. Did you also look at other competitive firms around the country to compare their debt ratios?

A. Yes. In fact, there are currently nearly 2,000 firms in various industries across the country with debt ratios of 50% or greater, with an average debt ratio of 61 percent.[123] The following figure shows a sample of these industries, with debt ratios of at least 56%.

[123] Exhibit DJG-15.

Figure 17:
Industries with Debt Ratios of 56% or Greater

Industry	# Firms	Debt Ratio
Air Transport	21	85%
Hospitals/Healthcare Facilities	31	80%
Hotel/Gaming	66	77%
Brokerage & Investment Banking	31	76%
Retail (Automotive)	32	72%
Food Wholesalers	15	68%
Retail (Grocery and Food)	15	68%
Rubber& Tires	2	67%
Bank (Money Center)	7	67%
Advertising	49	67%
Computers/Peripherals	46	67%
Auto & Truck	26	66%
Real Estate (Operations & Services)	51	66%
Retail (Special Lines)	76	64%
Cable TV	11	63%
Oil/Gas Distribution	21	63%
Packaging & Container	26	62%
Telecom. Services	42	61%
Recreation	60	61%
Broadcasting	28	60%
Transportation (Railroads)	4	60%
R.E.I.T.	238	60%
Power	50	60%
Telecom (Wireless)	17	59%
Transportation	17	59%
Beverage (Soft)	32	58%
Utility (Water)	14	57%
Retail (Distributors)	68	57%
Office Equipment & Services	18	57%
Aerospace/Defense	73	57%
Household Products	118	56%
Computer Services	83	56%
Green & Renewable Energy	20	56%
Total / Average	**1,408**	**64%**

Many of the industries shown here, like public utilities, are generally well-established industries with large amounts of capital assets. The shareholders of these industries demand higher debt ratios in order to maximize their profits. There are several notable industries that are relatively comparable to public utilities in some respects. These debt ratios, as well as the average debt ratio of the utility proxy group, are notably higher than CPA's proposed debt ratio of only 43.2%.

Q. What is your recommendation regarding the Company's capital structure?

A. The analysis strongly indicates that CPA's proposed long-term debt ratio is too low to be considered fair for ratemaking. An insufficiently low debt ratio causes the weighted average cost of capital to be unreasonably high. The table below compares the various debt ratios discussed in my testimony, and it highlights the unreasonableness of CPA's proposed debt ratio.

Figure 18:
Debt Ratio Comparison

Source	Debt Ratio
Power	60%
Telecom	59%
Water Utility	57%
NiSource	**57%**
Green Energy	56%
Proxy Group	**53.3%**
Garrett Proposed	**48.3%**
Company Proposed	**43.2%**

Based on my findings, I recommend the Commission impute a capital structure for ratemaking purposes consisting of long-term 48.3% debt, which is in between the

Company's proposed debt ratio of 43.2% and the average reported debt ratio of the proxy group of 53.3%. Although my findings indicate that a fair ratemaking debt ratio for CPA could be even higher, I am recommending a 48.3% long-term debt ratio as an appropriate first step at this time.

Q. If the Commission were to adopt CPA's proposed debt to equity ratios, would that decision further reduce CPA's low-risk profile?

A. Yes. As illustrated in the optimal capital structure table above, increasing the debt ratio to an optimal level effectively minimizes the weighted average cost of capital. However, if CPA's authorized ROE is higher than its cost of equity, it will increase the WACC beyond its lowest optimal level. Thus, if the Commission were to approve CPA's low debt ratio, it should also strongly consider a meaningful reduction in its authorized ROE.

Q. What is your capital structure recommendation to the Commission?

A. I recommend the Commission impute a ratemaking capital structure for CPA consisting of 48.3% long-term debt. I am not recommending an adjustment to the Company's proposed short-term debt ratio of 2.4%. Combining these debt ratios results in a common equity ratio (i.e., the remaining amount) of 49.3%.

X. CONCLUSION

Q. Please describe your overall cost of capital recommendation to the Commission.

A. I recommend the Commission reject the Company's proposed ROE and capital structure. Instead, the Commission should award CPA with an 8.5% ROE. The Commission should also impute a ratemaking capital structure consisting of 48.3% long-term debt, 2.4% short-term debt, and 49.3% common equity. My overall weighted average awarded return recommendation is 6.41%.[124]

Q. Does this conclude your testimony?

A. Yes. To the extent I have not addressed an issue or proposal raised by the Company in this proceeding, it should not be construed that I agree with the same.

[124] Exhibit DJG-16.

APPENDIX A:

DISCOUNTED CASH FLOW MODEL THEORY

The Discounted Cash Flow ("DCF") Model is based on a fundamental financial model called the "dividend discount model," which maintains that the value of a security is equal to the present value of the future cash flows it generates. Cash flows from common stock are paid to investors in the form of dividends. There are several variations of the DCF Model. In its most general form, the DCF Model is expressed as follows:[125]

Equation 7:
General Discounted Cash Flow Model

$$P_0 = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \cdots + \frac{D_n}{(1+k)^n}$$

where:	P_0	=	*current stock price*
	$D_1 \ldots D_n$	=	*expected future dividends*
	k	=	*discount rate / required return*

The General DCF Model would require an estimation of an infinite stream of dividends. Because this would be impractical, analysts use more feasible variations of the General DCF Model, which are discussed further below.

The DCF Models rely on the following four assumptions:[126]

1. Investors evaluate common stocks in the classical valuation framework; that is, they trade securities rationally at prices reflecting their perceptions of value;

2. Investors discount the expected cash flows at the same rate (K) in every future period;

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[125] *See* Zvi Bodie, Alex Kane & Alan J. Marcus, *Essentials of Investments* 410 (9th ed., McGraw-Hill/Irwin 2013).

[126] *See* Roger A. Morin, *New Regulatory Finance* 252 (Public Utilities Reports, Inc. 2006) (1994).

3. The K obtained from the DCF equation corresponds to that specific stream of future cash flows alone; and

4. Dividends, rather than earnings, constitute the source of value.

The General DCF can be rearranged to make it more practical for estimating the cost of equity. Regulators typically rely on some variation of the Constant Growth DCF Model, which is expressed as follows:

Equation 8:
Constant Growth Discounted Cash Flow Model

$$K = \frac{D_1}{P_0} + g$$

where:	K	=	*discount rate / required return on equity*
	D_1	=	*expected dividend per share one year from now*
	P_0	=	*current stock price*
	g	=	*expected growth rate of future dividends*

Unlike the General DCF Model, the Constant Growth DCF Model solves for the required return (K) directly. In addition, by assuming that dividends grow at a constant rate, the dividend stream from the General DCF Model may be substituted with a term representing the expected sustainable growth rate of future dividends (g). The Constant Growth DCF Model may be considered in two parts. The first part is the dividend yield (D_1/P_0), and the second part is the growth rate (g). In other words, the required return in the DCF Model is equivalent to the dividend yield plus the growth rate.

In addition to the four assumptions listed above, the Constant Growth DCF Model relies on the following four additional assumptions:[127]

[127] *See* Roger A. Morin, *New Regulatory Finance* 254–56 (Public Utilities Reports, Inc. 2006) (1994).

1. The discount rate (K) must exceed the growth rate (g);
2. The dividend growth rate (g) is constant in every year to infinity;
3. Investors require the same return (K) in every year; and
4. There is no external financing; that is, growth is provided only by the retention of earnings.

Because the growth rate in this model is assumed to be constant, it is important not to use growth rates that are unreasonably high. In fact, the sustainable growth rate estimate for a regulated utility with a defined service territory should not exceed the growth rate for the economy in which it operates.

APPENDIX B:

CAPITAL ASSET PRICING MODEL THEORY

The Capital Asset Pricing Model ("CAPM") is a market-based model founded on the principle that investors demand higher returns for incurring additional risk.[128] The CAPM estimates this required return. The CAPM relies on the following assumptions:

1. Investors are rational, risk-adverse, and strive to maximize profit and terminal wealth;

2. Investors make choices based on risk and return. Return is measured by the mean returns expected from a portfolio of assets; risk is measured by the variance of these portfolio returns;

3. Investors have homogenous expectations of risk and return;

4. Investors have identical time horizons;

5. Information is freely and simultaneously available to investors;

6. There is a risk-free asset, and investors can borrow and lend unlimited amounts at the risk-free rate;

7. There are no taxes, transaction costs, restrictions on selling short, or other market imperfections; and

8. Total asset quality is fixed, and all assets are marketable and divisible.[129]

While some of these assumptions may appear to be restrictive, they do not outweigh the inherent value of the model. The CAPM has been widely used by firms, analysts, and regulators for decades to estimate the cost of equity capital.

The basic CAPM equation is expressed as follows:

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[128] William F. Sharpe, *A Simplified Model for Portfolio Analysis* 277-93 (Management Science IX 1963).

[129] *Id.*

Equation 9:
Capital Asset Pricing Model

$$K = R_F + \beta_i(R_M - R_F)$$

where:	K	=	*required return*
	R_F	=	*risk-free rate*
	β	=	*beta coefficient of asset i*
	R_M	=	*required return on the overall market*

There are essentially three terms within the CAPM equation that are required to calculate the required return (K): (1) the risk-free rate (R_F); (2) the beta coefficient (β); and (3) the equity risk premium ($R_M - R_F$), which is the required return on the overall market less the risk-free rate.

Raw Beta Calculations and Adjustments.

A stock's beta equals the covariance of the asset's returns with the returns on a market portfolio, divided by the portfolio's variance, as expressed in the following formula:[130]

Equation 10:
Beta

$$\beta_i = \frac{\sigma_{im}}{\sigma_m^2}$$

where:	β_i	=	*beta of asset i*
	σ_{im}	=	*covariance of asset i returns with market portfolio returns*
	$\sigma^2{}_m$	=	*variance of market portfolio*

Betas that are published by various research firms are typically calculated through a regression analysis that considers the movements in price of an individual stock and movements in the price of the overall market portfolio. The betas produced by this regression analysis are considered "raw" betas. There is empirical evidence that raw betas should be adjusted to account

[130] *See* John R. Graham, Scott B. Smart & William L. Megginson, *Corporate Finance: Linking Theory to What Companies Do* 180–81 (3rd ed., South Western Cengage Learning 2010).

for beta's natural tendency to revert to an underlying mean.[131] Some analysts use an adjustment method proposed by Blume, which adjusts raw betas toward the market mean of one.[132] While the Blume adjustment method is popular due to its simplicity, it is arguably arbitrary, and some would say not useful at all. According to Dr. Damodaran: "While we agree with the notion that betas move toward 1.0 over time, the [Blume adjustment] strikes us as arbitrary and not particularly useful."[133] The Blume adjustment method is especially arbitrary when applied to industries with consistently low betas, such as the utility industry. For industries with consistently low betas, it is better to employ an adjustment method that adjusts raw betas toward an industry average, rather than the market average. Vasicek proposed such a method, which is preferable to the Blume adjustment method because it allows raw betas to be adjusted toward an industry average, and also accounts for the statistical accuracy of the raw beta calculation.[134] In other words, "[t]he Vasicek adjustment seeks to overcome one weakness of the Blume model by not applying the same adjustment to every security; rather, a security-specific adjustment is made depending on the statistical quality of the regression."[135] The Vasicek beta adjustment equation is expressed as follows:

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[131] *See* Michael J. Gombola and Douglas R. Kahl, *Time-Series Processes of Utility Betas: Implications for Forecasting Systematic Risk* 84–92 (Financial Management Autumn 1990).

[132] See Marshall Blume, *On the Assessment of Risk*, Vol. 26, No. 1 The Journal of Finance 1 (1971).

[133] *See* Aswath Damodaran, *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset* 187 (3rd ed., John Wiley & Sons, Inc. 2012).

[134] Oldrich A. Vasicek, *A Note on Using Cross-Sectional Information in Bayesian Estimation of Security Betas* 1233–1239 (Journal of Finance, Vol. 28, No. 5, December 1973).

[135] 2012 Ibbotson Stocks, Bonds, Bills, and Inflation Valuation Yearbook 77–78 (Morningstar 2012).

Equation 11:
Vasicek Beta Adjustment

$$\beta_{i1} = \frac{\sigma^2_{\beta_{i0}}}{\sigma^2_{\beta 0} + \sigma^2_{\beta_{i0}}}\beta_0 + \frac{\sigma^2_{\beta 0}}{\sigma^2_{\beta 0} + \sigma^2_{\beta_{i0}}}\beta_{i0}$$

where:	β_{i1}	=	*Vasicek adjusted beta for security i*
	β_{i0}	=	*historical beta for security i*
	β_0	=	*beta of industry or proxy group*
	$\sigma^2_{\beta 0}$	=	*variance of betas in the industry or proxy group*
	$\sigma^2_{\beta i0}$	=	*square of standard error of the historical beta for security i*

The Vasicek beta adjustment is an improvement on the Blume model because the Vasicek model does not apply the same adjustment to every security. A higher standard error produced by the regression analysis indicates a lower statistical significance of the beta estimate. Thus, a beta with a high standard error should receive a greater adjustment than a beta with a low standard error. As stated in Ibbotson:

> While the Vasicek formula looks intimidating, it is really quite simple. The adjusted beta for a company is a weighted average of the company's historical beta and the beta of the market, industry, or peer group. How much weight is given to the company and historical beta depends on the statistical significance of the company beta statistic. If a company beta has a low standard error, then it will have a higher weighting in the Vasicek formula. If a company beta has a high standard error, then it will have lower weighting in the Vasicek formula. An advantage of this adjustment methodology is that it does not force an adjustment to the market as a whole. Instead, the adjustment can be toward an industry or some other peer group. <u>This is most useful in looking at companies in industries that on average have high or low betas.</u>[136]

Thus, the Vasicek adjustment method is statistically more accurate and is the preferred method to use when analyzing companies in an industry that has inherently low betas, such as the utility industry. The Vasicek method was also confirmed by Gombola, who conducted a study

[136] 2012 Ibbotson Stocks, Bonds, Bills, and Inflation Valuation Yearbook 78 (Morningstar 2012).

specifically related to utility companies. Gombola concluded that "[t]he strong evidence of auto-regressive tendencies in utility betas lends support to the application of adjustment procedures such as the . . . adjustment procedure presented by Vasicek."[137] Gombola also concluded that adjusting raw betas toward the market mean of 1.0 is too high, and that "[i]nstead, they should be adjusted toward a value that is less than one."[138] In conducting the Vasicek adjustment on betas in previous cases, it reveals that utility betas are even lower than those published by Value Line.[139] Gombola's findings are particular important here, because his study was conducted specifically on utility companies. This evidence indicates that using Value Line's betas in a CAPM cost of equity estimate for a utility company may lead to overestimated results. Regardless, adjusting betas to a level that is higher than Value Line's betas is not reasonable, and it would produce CAPM cost of equity results that are too high.

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[137] Michael J. Gombola and Douglas R. Kahl, *Time-Series Processes of Utility Betas: Implications for Forecasting Systematic Risk* 92 (Financial Management Autumn 1990) (emphasis added).

[138] Michael J. Gombola and Douglas R. Kahl, *Time-Series Processes of Utility Betas: Implications for Forecasting Systematic Risk* 91–92 (Financial Management Autumn 1990) (emphasis added).

[139] *See e.g.* Responsive Testimony of David J. Garrett, filed March 21, 2016 in Cause No. PUD 201500273 before the Corporation Commission of Oklahoma (OG&E's 2015 rate case), at pp. 56–59.

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University of Oklahoma — Norman, OK
Master of Business Administration — 2014
Areas of Concentration: Finance, Energy

University of Oklahoma College of Law — Norman, OK
Juris Doctor — 2007
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PROFESSIONAL DESIGNATIONS

Society of Depreciation Professionals
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Certified Rate of Return Analyst (CRRA)

The Mediation Institute
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WORK EXPERIENCE

Resolve Utility Consulting PLLC — Oklahoma City, OK
Managing Member — 2016 – Present
Provide expert analysis and testimony specializing in depreciation and cost of capital issues for clients in utility regulatory proceedings.

Oklahoma Corporation Commission — Oklahoma City, OK
Public Utility Regulatory Analyst — 2012 – 2016
Assistant General Counsel — 2011 – 2012
Represented commission staff in utility regulatory proceedings and provided legal opinions to commissioners. Provided expert analysis and testimony in depreciation, cost of capital, incentive compensation, payroll and other issues.

Perebus Counsel, PLLC	Oklahoma City, OK
Managing Member	2009 – 2011
Represented clients in the areas of family law, estate planning, debt negotiations, business organization, and utility regulation.	
Moricoli & Schovanec, P.C.	Oklahoma City, OK
Associate Attorney	2007 – 2009
Represented clients in the areas of contracts, oil and gas, business structures and estate administration.	

TEACHING EXPERIENCE

University of Oklahoma	Norman, OK
Adjunct Instructor – "Conflict Resolution"	2014 – 2021
Adjunct Instructor – "Ethics in Leadership"	
Rose State College	Midwest City, OK
Adjunct Instructor – "Legal Research"	2013 – 2015
Adjunct Instructor – "Oil & Gas Law"	

PUBLICATIONS

American Indian Law Review	Norman, OK
"Vine of the Dead: Reviving Equal Protection Rites for Religious Drug Use" (31 Am. Indian L. Rev. 143)	2006

PROFESSIONAL ASSOCIATIONS

Oklahoma Bar Association	2007 – Present
Society of Depreciation Professionals	2014 – Present
Board Member – President	2017
Participate in management of operations, attend meetings, review performance, organize presentation agenda.	
Society of Utility Regulatory Financial Analysts	2014 – Present

Utility Regulatory Proceedings

Regulatory Agency	Utility Applicant	Docket Number	Issues Addressed	Parties Represented
Pennsylvania Public Utility Commission	Aqua Pennsylvania Wastewater / East Whiteland Township	A-2021-3026132	Fair market value estimates for wastewater assets	Pennsylvania Office of Consumer Advocate
Public Service Commission of South Carolina	Kiawah Island Utility, Inc.	2021-324-WS	Cost of capital, awarded rate of return, capital structure	South Carolina Office of Regulatory Staff
Pennsylvania Public Utility Commission	Aqua Pennsylvania Wastewater / Willistown Township	A-2021-3027268	Fair market value estimates for wastewater assets	Pennsylvania Office of Consumer Advocate
Indiana Utility Regulatory Commission	Northern Indiana Public Service Company	45621	Depreciation rates, service lives, net salvage	Indiana Office of Utility Consumer Counselor
Arkansas Public Service Commission	Southwestern Electric Power Company	21-070-U	Cost of capital, depreciation rates, net salvage	Western Arkansas Large Energy Consumers
Federal Energy Regulatory Commission	Southern Star Central Gas Pipeline	RP21-778-002	Depreciation rates, service lives, net salvage	Consumer-Owned Shippers
Railroad Commission of Texas	Participating Texas gas utilities in consolidated proceeding	OS-21-00007061	Securitization of extraordinary gas costs arising from winter storms	The City of El Paso
Public Service Commission of South Carolina	Palmetto Wastewater Reclamation, Inc.	2021-153-S	Cost of capital, awarded rate of return, capital structure, ring-fencing	South Carolina Office of Regulatory Staff
Public Utilties Commission of the State of Colorado	Public Service Company of Colorado	21AL-0317E	Cost of capital, depreciation rates, net salvage	Colorado Energy Consumers
Pennsylvania Public Utility Commission	City of Lancaster - Water Department	R-2021-3026682	Cost of capital, awarded rate of return, capital structure	Pennsylvania Office of Consumer Advocate
Public Utility Commission of Texas	Southwestern Public Service Company	PUC 51802	Depreciation rates, service lives, net salvage	The Alliance of Xcel Municipalities
Pennsylvania Public Utility Commission	The Borough of Hanover - Hanover Municipal Waterworks	R-2021-3026116	Cost of capital, awarded rate of return, capital structure	Pennsylvania Office of Consumer Advocate
Maryland Public Service Commission	Delmarva Power & Light Company	9670	Cost of capital and authorized rate of return	Maryland Office of People's Counsel
Oklahoma Corporation Commission	Oklahoma Natural Gas Company	PUD 202100063	Cost of capital, awarded rate of return, capital structure	Oklahoma Industrial Energy Consumers
Indiana Utility Regulatory Commission	Indiana Michigan Power Company	45576	Depreciation rates, service lives, net salvage	Indiana Office of Utility Consumer Counselor
Public Utility Commission of Texas	El Paso Electric Company	PUC 52195	Depreciation rates, service lives, net salvage	The City of El Paso

Utility Regulatory Proceedings

Regulatory Agency	Utility Applicant	Docket Number	Issues Addressed	Parties Represented
Pennsylvania Public Utility Commission	Aqua Pennsylvania	R-2021-3027385	Cost of capital, awarded rate of return, capital structure	Pennsylvania Office of Consumer Advocate
New Mexico Public Regulation Commission	Public Service Company of New Mexico, Avangrid, NM Green Holdings, PNM Resources	20-00222-UT	Ring fencing, capital structure	Albuquerque Bernalillo County Water Utility Authority
Public Service Commission of the State of Montana	NorthWestern Energy	D2021.02.022	Cost of capital, awarded rate of return, capital structure	Montana Consumer Counsel
Pennsylvania Public Utility Commission	PECO Energy Company	R-2021-3024601	Cost of capital, awarded rate of return, capital structure	Pennsylvania Office of Consumer Advocate
New Mexico Public Regulation Commission	Southwestern Public Service Company	20-00238-UT	Cost of capital and authorized rate of return	The New Mexico Large Customer Group; Occidental Permian
Oklahoma Corporation Commission	Public Service Company of Oklahoma	PUD 202100055	Cost of capital, depreciation rates, net salvage	Oklahoma Industrial Energy Consumers
Pennsylvania Public Utility Commission	Duquesne Light Company	R-2021-3024750	Cost of capital, awarded rate of return, capital structure	Pennsylvania Office of Consumer Advocate
Maryland Public Service Commission	Columbia Gas of Maryland	9664	Cost of capital and authorized rate of return	Maryland Office of People's Counsel
Indiana Utility Regulatory Commission	Southern Indiana Gas Company, d/b/a Vectren Energy Delivery of Indiana, Inc.	45447	Depreciation rates, service lives, net salvage	Indiana Office of Utility Consumer Counselor
Public Utility Commission of Texas	Southwestern Electric Power Company	PUC 51415	Depreciation rates, service lives, net salvage	Cities Advocating Reasonable Deregulation
New Mexico Public Regulatory Commission	Avangrid, Inc., Avangrid Networks, Inc., NM Green Holdings, Inc., PNM, and PNM Resources	20-00222-UT	Ring fencing and capital structure	The Albuquerque Bernalillo County Water Utility Authority
Indiana Utility Regulatory Commission	Indiana Gas Company, d/b/a Vectren Energy Delivery of Indiana, Inc.	45468	Depreciation rates, service lives, net salvage	Indiana Office of Utility Consumer Counselor
Public Utilities Commission of Nevada	Nevada Power Company and Sierra Pacific Power Company, d/b/a NV Energy	20-07023	Construction work in progress	MGM Resorts International, Caesars Enterprise Services, LLC, and the Southern Nevada Water Authority
Massachusetts Department of Public Utilities	Boston Gas Company, d/b/a National Grid	D.P.U. 20-120	Depreciation rates, service lives, net salvage	Massachusetts Office of the Attorney General, Office of Ratepayer Advocacy
Public Service Commission of the State of Montana	ABACO Energy Services, LLC	D2020.07.082	Cost of capital and authorized rate of return	Montana Consumer Counsel
Maryland Public Service Commission	Washington Gas Light Company	9651	Cost of capital and authorized rate of return	Maryland Office of People's Counsel

Utility Regulatory Proceedings

Regulatory Agency	Utility Applicant	Docket Number	Issues Addressed	Parties Represented
Florida Public Service Commission	Utilities, Inc. of Florida	20200139-WS	Cost of capital and authorized rate of return	Florida Office of Public Counsel
New Mexico Public Regulatory Commission	El Paso Electric Company	20-00104-UT	Cost of capital, depreciation rates, net salvage	City of Las Cruces and Doña Ana County
Public Utilities Commission of Nevada	Nevada Power Company	20-06003	Cost of capital, awarded rate of return, capital structure, earnings sharing	MGM Resorts International, Caesars Enterprise Services, LLC, Wynn Las Vegas, LLC, Smart Energy Alliance, and Circus Circus Las Vegas, LLC
Wyoming Public Service Commission	Rocky Mountain Power	20000-578-ER-20	Cost of capital and authorized rate of return	Wyoming Industrial Energy Consumers
Florida Public Service Commission	Peoples Gas System	20200051-GU 20200166-GU	Cost of capital, depreciation rates, net salvage	Florida Office of Public Counsel
Wyoming Public Service Commission	Rocky Mountain Power	20000-539-EA-18	Depreciation rates, service lives, net salvage	Wyoming Industrial Energy Consumers
Public Service Commission of South Carolina	Dominion Energy South Carolina	2020-125-E	Depreciation rates, service lives, net salvage	South Carolina Office of Regulatory Staff
Pennsylvania Public Utility Commission	The City of Bethlehem	2020-3020256	Cost of capital, awarded rate of return, capital structure	Pennsylvania Office of Consumer Advocate
Railroad Commission of Texas	Texas Gas Services Company	GUD 10928	Depreciation rates, service lives, net salvage	Gulf Coast Service Area Steering Committee
Public Utilities Commission of the State of California	Southern California Edison	A.19-08-013	Depreciation rates, service lives, net salvage	The Utility Reform Network
Massachusetts Department of Public Utilities	NSTAR Gas Company	D.P.U. 19-120	Depreciation rates, service lives, net salvage	Massachusetts Office of the Attorney General, Office of Ratepayer Advocacy
Georgia Public Service Commission	Liberty Utilities (Peach State Natural Gas)	42959	Depreciation rates, service lives, net salvage	Public Interest Advocacy Staff
Florida Public Service Commission	Florida Public Utilities Company	20190155-EI 20190156-EI 20190174-EI	Depreciation rates, service lives, net salvage	Florida Office of Public Counsel
Illinois Commerce Commission	Commonwealth Edison Company	20-0393	Depreciation rates, service lives, net salvage	The Office of the Illinois Attorney General
Public Utility Commission of Texas	Southwestern Public Service Company	PUC 49831	Depreciation rates, service lives, net salvage	Alliance of Xcel Municipalities
Public Service Commission of South Carolina	Blue Granite Water Company	2019-290-WS	Depreciation rates, service lives, net salvage	South Carolina Office of Regulatory Staff

Utility Regulatory Proceedings

Regulatory Agency	Utility Applicant	Docket Number	Issues Addressed	Parties Represented
Railroad Commission of Texas	CenterPoint Energy Resources	GUD 10920	Depreciation rates and grouping procedure	Alliance of CenterPoint Municipalities
Pennsylvania Public Utility Commission	Aqua Pennsylvania Wastewater / East Norriton Township	A-2019-3009052	Fair market value estimates for wastewater assets	Pennsylvania Office of Consumer Advocate
New Mexico Public Regulation Commission	Southwestern Public Service Company	19-00170-UT	Cost of capital and authorized rate of return	The New Mexico Large Customer Group; Occidental Permian
Indiana Utility Regulatory Commission	Duke Energy Indiana	45253	Cost of capital, depreciation rates, net salvage	Indiana Office of Utility Consumer Counselor
Maryland Public Service Commission	Columbia Gas of Maryland	9609	Depreciation rates, service lives, net salvage	Maryland Office of People's Counsel
Washington Utilities & Transportation Commission	Avista Corporation	UE-190334	Cost of capital, awarded rate of return, capital structure	Washington Office of Attorney General
Indiana Utility Regulatory Commission	Indiana Michigan Power Company	45235	Cost of capital, depreciation rates, net salvage	Indiana Office of Utility Consumer Counselor
Public Utilities Commission of the State of California	Pacific Gas & Electric Company	18-12-009	Depreciation rates, service lives, net salvage	The Utility Reform Network
Oklahoma Corporation Commission	The Empire District Electric Company	PUD 201800133	Cost of capital, authorized ROE, depreciation rates	Oklahoma Industrial Energy Consumers and Oklahoma Energy Results
Arkansas Public Service Commission	Southwestern Electric Power Company	19-008-U	Cost of capital, depreciation rates, net salvage	Western Arkansas Large Energy Consumers
Public Utility Commission of Texas	CenterPoint Energy Houston Electric	PUC 49421	Depreciation rates, service lives, net salvage	Texas Coast Utilities Coalition
Massachusetts Department of Public Utilities	Massachusetts Electric Company and Nantucket Electric Company	D.P.U. 18-150	Depreciation rates, service lives, net salvage	Massachusetts Office of the Attorney General, Office of Ratepayer Advocacy
Oklahoma Corporation Commission	Oklahoma Gas & Electric Company	PUD 201800140	Cost of capital, authorized ROE, depreciation rates	Oklahoma Industrial Energy Consumers and Oklahoma Energy Results
Public Service Commission of the State of Montana	Montana-Dakota Utilities Company	D2018.9.60	Depreciation rates, service lives, net salvage	Montana Consumer Counsel and Denbury Onshore
Indiana Utility Regulatory Commission	Northern Indiana Public Service Company	45159	Depreciation rates, grouping procedure, demolition costs	Indiana Office of Utility Consumer Counselor
Public Service Commission of the State of Montana	NorthWestern Energy	D2018.2.12	Depreciation rates, service lives, net salvage	Montana Consumer Counsel

Utility Regulatory Proceedings

Regulatory Agency	Utility Applicant	Docket Number	Issues Addressed	Parties Represented
Oklahoma Corporation Commission	Public Service Company of Oklahoma	PUD 201800097	Depreciation rates, service lives, net salvage	Oklahoma Industrial Energy Consumers and Wal-Mart
Nevada Public Utilities Commission	Southwest Gas Corporation	18-05031	Depreciation rates, service lives, net salvage	Nevada Bureau of Consumer Protection
Public Utility Commission of Texas	Texas-New Mexico Power Company	PUC 48401	Depreciation rates, service lives, net salvage	Alliance of Texas-New Mexico Power Municipalities
Oklahoma Corporation Commission	Oklahoma Gas & Electric Company	PUD 201700496	Depreciation rates, service lives, net salvage	Oklahoma Industrial Energy Consumers and Oklahoma Energy Results
Maryland Public Service Commission	Washington Gas Light Company	9481	Depreciation rates, service lives, net salvage	Maryland Office of People's Counsel
Indiana Utility Regulatory Commission	Citizens Energy Group	45039	Depreciation rates, service lives, net salvage	Indiana Office of Utility Consumer Counselor
Public Utility Commission of Texas	Entergy Texas, Inc.	PUC 48371	Depreciation rates, decommissioning costs	Texas Municipal Group
Washington Utilities & Transportation Commission	Avista Corporation	UE-180167	Depreciation rates, service lives, net salvage	Washington Office of Attorney General
New Mexico Public Regulation Commission	Southwestern Public Service Company	17-00255-UT	Cost of capital and authorized rate of return	HollyFrontier Navajo Refining; Occidental Permian
Public Utility Commission of Texas	Southwestern Public Service Company	PUC 47527	Depreciation rates, plant service lives	Alliance of Xcel Municipalities
Public Service Commission of the State of Montana	Montana-Dakota Utilities Company	D2017.9.79	Depreciation rates, service lives, net salvage	Montana Consumer Counsel
Florida Public Service Commission	Florida City Gas	20170179-GU	Cost of capital, depreciation rates	Florida Office of Public Counsel
Washington Utilities & Transportation Commission	Avista Corporation	UE-170485	Cost of capital and authorized rate of return	Washington Office of Attorney General
Wyoming Public Service Commission	Powder River Energy Corporation	10014-182-CA-17	Credit analysis, cost of capital	Private customer
Oklahoma Corporation Commission	Public Service Co. of Oklahoma	PUD 201700151	Depreciation, terminal salvage, risk analysis	Oklahoma Industrial Energy Consumers
Public Utility Commission of Texas	Oncor Electric Delivery Company	PUC 46957	Depreciation rates, simulated analysis	Alliance of Oncor Cities

Utility Regulatory Proceedings

Regulatory Agency	Utility Applicant	Docket Number	Issues Addressed	Parties Represented
Nevada Public Utilities Commission	Nevada Power Company	17-06004	Depreciation rates, service lives, net salvage	Nevada Bureau of Consumer Protection
Public Utility Commission of Texas	El Paso Electric Company	PUC 46831	Depreciation rates, interim retirements	City of El Paso
Idaho Public Utilities Commission	Idaho Power Company	IPC-E-16-24	Accelerated depreciation of North Valmy plant	Micron Technology, Inc.
Idaho Public Utilities Commission	Idaho Power Company	IPC-E-16-23	Depreciation rates, service lives, net salvage	Micron Technology, Inc.
Public Utility Commission of Texas	Southwestern Electric Power Company	PUC 46449	Depreciation rates, decommissioning costs	Cities Advocating Reasonable Deregulation
Massachusetts Department of Public Utilities	Eversource Energy	D.P.U. 17-05	Cost of capital, capital structure, and rate of return	Sunrun Inc.; Energy Freedom Coalition of America
Railroad Commission of Texas	Atmos Pipeline - Texas	GUD 10580	Depreciation rates, grouping procedure	City of Dallas
Public Utility Commission of Texas	Sharyland Utility Company	PUC 45414	Depreciation rates, simulated analysis	City of Mission
Oklahoma Corporation Commission	Empire District Electric Company	PUD 201600468	Cost of capital, depreciation rates	Oklahoma Industrial Energy Consumers
Railroad Commission of Texas	CenterPoint Energy Texas Gas	GUD 10567	Depreciation rates, simulated plant analysis	Texas Coast Utilities Coalition
Arkansas Public Service Commission	Oklahoma Gas & Electric Company	160-159-GU	Cost of capital, depreciation rates, terminal salvage	Arkansas River Valley Energy Consumers; Wal-Mart
Florida Public Service Commission	Peoples Gas	160-159-GU	Depreciation rates, service lives, net salvage	Florida Office of Public Counsel
Arizona Corporation Commission	Arizona Public Service Company	E-01345A-16-0036	Cost of capital, depreciation rates, terminal salvage	Energy Freedom Coalition of America
Nevada Public Utilities Commission	Sierra Pacific Power Company	16-06008	Depreciation rates, net salvage, theoretical reserve	Northern Nevada Utility Customers
Oklahoma Corporation Commission	Oklahoma Gas & Electric Co.	PUD 201500273	Cost of capital, depreciation rates, terminal salvage	Public Utility Division
Oklahoma Corporation Commission	Public Service Co. of Oklahoma	PUD 201500208	Cost of capital, depreciation rates, terminal salvage	Public Utility Division

Utility Regulatory Proceedings

Regulatory Agency	Utility Applicant	Docket Number	Issues Addressed	Parties Represented
Oklahoma Corporation Commission	Oklahoma Natural Gas Company	PUD 201500213	Cost of capital, depreciation rates, net salvage	Public Utility Division

Proxy Group Summary

Company	Ticker	Market Cap. ($ millions)	Market Category	Value Line Safety Rank	Financial Strength
Atmos Energy Corp	ATO	15,700	Large Cap	1	A+
Chesapeake Utilities Corp	CPK	2,300	Mid Cap	2	A
New Jersey Resources Corporation	NJR	4,300	Mid Cap	2	A+
NiSource Inc	NI	12,400	Large Cap	3	B+
Northwest Natural Holding Company	NWN	1,600	Small Cap	3	A
ONE Gas Inc	OGS	4,600	Mid Cap	2	B++
South Jersey Industries Inc	SJI	4,100	Mid Cap	3	B++
Southwest Gas Holdings Inc	SWX	6,100	Mid Cap	3	A
Spire Inc.	SR	3,900	Mid Cap	2	B++

Value Line Investment Survey

DCF Stock and Index Prices

Exhibit DJG-3

Ticker	^GSPC	ATO	CPK	NJR	NI	NWN	OGS	SJI	SWX	SR
30-day Average	4213	115.65	131.34	44.84	30.42	49.77	86.61	34.17	87.23	75.27
Standard Deviation	193.1	3.59	5.42	1.09	0.99	1.12	2.35	0.39	4.28	1.52
04/07/22	4500	120.12	138.91	46.01	31.86	51.06	89.80	34.46	77.81	74.62
04/08/22	4488	120.97	139.68	46.17	31.80	50.90	91.21	34.47	77.43	76.05
04/11/22	4413	119.77	137.95	45.83	31.64	50.22	89.91	34.40	78.16	75.80
04/12/22	4397	119.47	139.12	45.71	31.86	49.88	90.24	34.63	80.46	75.85
04/13/22	4447	119.17	137.49	45.26	31.43	49.28	88.85	34.55	81.94	74.82
04/14/22	4393	119.01	136.56	45.79	31.50	49.39	88.37	34.56	82.94	75.49
04/18/22	4392	118.87	135.50	45.82	31.49	49.70	87.79	34.49	87.63	76.55
04/19/22	4462	119.87	137.94	46.34	31.52	50.32	88.11	34.50	87.90	78.09
04/20/22	4459	121.94	138.72	46.79	31.85	50.99	88.55	34.56	89.15	78.07
04/21/22	4394	120.42	137.53	46.08	31.15	51.04	88.28	34.50	87.90	77.99
04/22/22	4272	117.98	135.16	45.85	30.63	50.58	87.75	34.44	89.65	77.00
04/25/22	4296	116.98	131.56	44.66	30.34	49.39	87.09	34.30	89.05	75.30
04/26/22	4175	116.34	132.59	44.63	29.96	49.15	87.13	34.27	87.66	75.23
04/27/22	4184	115.35	129.60	44.09	29.88	48.69	86.72	34.16	88.01	74.63
04/28/22	4288	116.10	129.00	44.16	30.06	48.74	86.93	34.42	87.70	74.67
04/29/22	4132	112.71	125.17	43.16	29.12	47.83	83.76	34.19	87.52	72.75
05/02/22	4155	111.08	122.00	42.79	28.73	47.29	82.03	34.16	86.54	72.79
05/03/22	4175	111.92	122.09	43.83	28.96	47.27	82.39	34.10	86.42	72.14
05/04/22	4300	114.61	130.36	44.60	29.67	49.16	85.20	34.44	88.14	74.35
05/05/22	4147	114.34	128.53	43.19	29.31	49.02	84.17	34.18	86.77	73.52
05/06/22	4123	114.20	127.56	43.76	29.49	49.34	84.51	34.31	87.07	73.95
05/09/22	3991	112.94	127.66	44.21	29.44	49.54	84.80	33.59	90.10	75.55
05/10/22	4001	112.42	125.57	43.85	29.32	49.24	84.06	33.90	89.24	74.45
05/11/22	3935	111.93	127.66	43.77	29.67	49.82	83.98	33.39	90.09	74.13
05/12/22	3930	111.41	127.01	43.66	29.61	50.14	84.72	33.58	91.54	74.75
05/13/22	4024	112.27	126.57	44.02	30.32	50.63	84.90	33.40	91.16	74.50
05/16/22	4008	112.47	127.45	44.63	30.43	50.78	85.96	33.38	91.85	75.39
05/17/22	4089	113.06	127.84	45.40	30.75	51.10	87.55	33.68	93.24	77.02
05/18/22	3924	111.17	128.47	45.54	30.56	51.07	87.37	34.10	91.70	76.72
05/19/22	3901	110.69	128.84	45.51	30.31	51.52	86.14	34.07	92.07	75.84

All prices are adjusted closing prices reported by Yahoo! Finance, http://finance.yahoo.com

DCF Dividend Yields

Company	Ticker	[1] Quarterly Dividend	[2] Annualized Dividend	[3] Stock Price	[4] Dividend Yield
Atmos Energy Corp	ATO	0.680	2.720	115.65	2.4%
Chesapeake Utilities Corp	CPK	0.535	2.140	131.34	1.6%
New Jersey Resources Corporation	NJR	0.363	1.452	44.84	3.2%
NiSource Inc	NI	0.235	0.940	30.42	3.1%
Northwest Natural Holding Company	NWN	0.482	1.928	49.77	3.9%
ONE Gas Inc	OGS	0.620	2.480	86.61	2.9%
South Jersey Industries Inc	SJI	0.310	1.240	34.17	3.6%
Southwest Gas Holdings Inc	SWX	0.620	2.480	87.23	2.8%
Spire Inc.	SR	0.685	2.740	75.27	3.6%
Average		**$0.50**	**$2.01**	**$72.81**	**3.0%**

[1] 2022 Q2 reported quarterly dividends per share. Nasdaq.com
[2] = [1] * 4
[3] Average stock price from Exhibit DJG-3
[4] = [2] / [3]

DCF Sustainable Growth Rate Determinants

Sustainable Growth Determinants	Rate	
Nominal GDP	3.8%	[1]
Real GDP	1.8%	[2]
Inflation	2.0%	[3]
Risk Free Rate	3.0%	[4]
Highest	**3.8%**	

[1],[2] [3] CBO, The 2021 Long-Term Budget Outlook, p. 34
[4] I/B/E/S growth rate from Exhibit PRM-1, Sch. 9
[5] From Exhibit DJG-7

DCF Results

Company	Ticker	[1] Dividend Yield	[2] Analyst Growth	[3] Sustainable Growth	[4] DCF Result (Analyst Growth)	[5] DCF Result (Sustainable Growth)
Atmos Energy Corp	ATO	2.4%	7.0%	3.8%	9.5%	6.3%
Chesapeake Utilities Corp	CPK	1.6%	8.5%	3.8%	10.3%	5.6%
New Jersey Resources Corporation	NJR	3.2%	5.0%	3.8%	8.4%	7.2%
NiSource Inc	NI	3.1%	4.5%	3.8%	7.7%	7.0%
Northwest Natural Holding Company	NWN	3.9%	0.5%	3.8%	4.4%	7.7%
ONE Gas Inc	OGS	2.9%	6.5%	3.8%	9.5%	6.8%
South Jersey Industries Inc	SJI	3.6%	4.0%	3.8%	7.8%	7.6%
Southwest Gas Holdings Inc	SWX	2.8%	5.5%	3.8%	8.5%	6.8%
Spire Inc.	SR	3.6%	5.0%	3.8%	8.8%	7.6%
Average		**3.0%**	**5.2%**	**3.8%**	**8.1%**	**6.7%**

[1] Dividend Yield from Exhibit DJG-4
[2] Forecasted dividend growth rates - Value Line
[3] Sustainable growth rate from Exhibit DJG-5
[4] Annual Compounding DCF = $D_0 (1 + g) / P_0 + g$ (using sustainable growth rate)
[5] Annual Compounding DCF = $D_0 (1 + g) / P_0 + g$ (using analyst growth rate)

CAPM Risk-Free Rate

Date	Rate
04/07/22	2.7%
04/08/22	2.8%
04/11/22	2.8%
04/12/22	2.8%
04/13/22	2.8%
04/14/22	2.9%
04/18/22	3.0%
04/19/22	3.0%
04/20/22	2.9%
04/21/22	2.9%
04/22/22	3.0%
04/25/22	2.9%
04/26/22	2.9%
04/27/22	2.9%
04/28/22	2.9%
04/29/22	3.0%
05/02/22	3.1%
05/03/22	3.0%
05/04/22	3.0%
05/05/22	3.2%
05/06/22	3.2%
05/09/22	3.2%
05/10/22	3.1%
05/11/22	3.1%
05/12/22	3.0%
05/13/22	3.1%
05/16/22	3.1%
05/17/22	3.2%
05/18/22	3.1%
05/19/22	3.1%
Average	**3.0%**

*Daily Treasury Yield Curve Rates on 30-year T-bonds, http://www.treasury.gov/resources-center/data-chart-center/interest-rates/

CAPM Beta Coefficient

Company	Ticker	Beta
Atmos Energy Corp	ATO	0.80
Chesapeake Utilities Corp	CPK	0.75
New Jersey Resources Corporation	NJR	0.95
NiSource Inc	NI	0.85
Northwest Natural Holding Company	NWN	0.80
ONE Gas Inc	OGS	0.80
South Jersey Industries Inc	SJI	1.00
Southwest Gas Holdings Inc	SWX	0.90
Spire Inc.	SR	0.80
Average		0.85

Betas from Value Line Investment Survey

Exhibit DJG-9

CAPM Implied Equity Risk Premium Estimate

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Year	Market Value	Operating Earnings	Dividends	Buybacks	Earnings Yield	Dividend Yield	Buyback Yield	Gross Cash Yield
2011	11,385	877	240	405	7.70%	2.11%	3.56%	5.67%
2012	12,742	870	281	399	6.83%	2.20%	3.13%	5.33%
2013	16,495	956	312	476	5.80%	1.89%	2.88%	4.77%
2014	18,245	1,004	350	553	5.50%	1.92%	3.03%	4.95%
2015	17,900	885	382	572	4.95%	2.14%	3.20%	5.33%
2016	19,268	920	397	536	4.77%	2.06%	2.78%	4.85%
2017	22,821	1,066	420	519	4.67%	1.84%	2.28%	4.12%
2018	21,027	1,282	456	806	6.10%	2.17%	3.84%	6.01%
2019	26,760	1,305	485	729	4.88%	1.81%	2.72%	4.54%
2020	31,659	1,019	480	520	3.22%	1.52%	1.64%	3.16%
2021	40,356	1,739	511	882	4.31%	1.27%	2.18%	3.45%

Cash Yield	4.74%	[9]
Growth Rate	7.09%	[10]
Risk-free Rate	2.98%	[11]
Current Index Value	4,213	[12]

	[13]	[14]	[15]	[16]	[17]
Year	1	2	3	4	5
Expected Dividends	214	229	245	263	281
Expected Terminal Value					4973
Present Value	197	194	190	187	3445
Intrinsic Index Value	4213	[18]			
Required Return on Market	8.8%	[19]			
Implied Equity Risk Premium	**5.8%**	[20]			

[1-4] S&P Quarterly Press Releases, data found at https://us.spindices.com/indices/equity/sp-500 (additional info tab) (all dollar figures are in $ billions)
[1] Market value of S&P 500
[5] = [2] / [1]
[6] = [3] / [1]
[7] = [4] / [1]
[8] = [6] + [7]
[9] = Average of [8]
[10] = Compund annual growth rate of [2] = (end value / beginning value)^ $^{1/10}$-1
[11] Risk-free rate from DJG risk-free rate exhibit
[12] 30-day average of closing index prices from DJG stock price exhibit
[13-16] Expected dividends = [9]*[12]*(1+[10])^n ; Present value = expected dividend / (1+[11]+[19])^n
[17] Expected terminal value = expected dividend * (1+[11]) / [19] ; Present value = (expected dividend + expected terminal value) / (1+[11]+[19])^n
[18] = Sum([13-17]) present values.
[19] = [20] + [11]
[20] Internal rate of return calculation setting [18] equal to [12] and solving for the discount rate

Exhibit DJG-10

CAPM Equity Risk Premium Results

IESE Business School Survey	5.5%	[1]
Duff & Phelps Report	5.5%	[2]
Damodaran (average)	5.1%	[3]
Garrett	5.8%	[4]
Average	**5.5%**	
Highest	**5.8%**	

CAPM Final Result

[1]	[2]	[3]	[4]
Risk-Free Rate	Proxy Beta	Risk Premium	**CAPM Result**
2.98%	0.850	5.8%	**7.9%**

[1] From DJG-7, risk-free rate exhibit
[2] From DJG-8, beta exhibit (avg. beta of proxy group)
[3] From DJG-10, equity risk premium exhibit
[4] = [1] + [2] * [3]

Cost of Equity Summary

Cost of Equity Model	Result
DCF (Sustainable Growth)	6.7%
DCF (Analyst Growth)	8.1%
Capital Asset Pricing Model	7.9%
Hamada (at debt ratio of 48.3%)	8.3%
Average	**7.7%**
Highest	**8.3%**

Market Cost of Equity vs. Awarded Returns

	[1]		[2]		[3]		[4]	[5]	[6]	[7]
	Electric Utilities		Gas Utilities		Total Utilities		S&P 500	T-Bond	Risk	Market
Year	ROE	#	ROE	#	ROE	#	Returns	Rate	Premium	COE
1990	12.70%	38	12.68%	33	12.69%	71	-3.06%	8.07%	3.89%	11.96%
1991	12.54%	42	12.45%	31	12.50%	73	30.23%	6.70%	3.48%	10.18%
1992	12.09%	45	12.02%	28	12.06%	73	7.49%	6.68%	3.55%	10.23%
1993	11.46%	28	11.37%	40	11.41%	68	9.97%	5.79%	3.17%	8.96%
1994	11.21%	28	11.24%	24	11.22%	52	1.33%	7.82%	3.55%	11.37%
1995	11.58%	28	11.44%	13	11.54%	41	37.20%	5.57%	3.29%	8.86%
1996	11.40%	18	11.12%	17	11.26%	35	22.68%	6.41%	3.20%	9.61%
1997	11.33%	10	11.30%	12	11.31%	22	33.10%	5.74%	2.73%	8.47%
1998	11.77%	10	11.51%	10	11.64%	20	28.34%	4.65%	2.26%	6.91%
1999	10.72%	6	10.74%	6	10.73%	12	20.89%	6.44%	2.05%	8.49%
2000	11.58%	9	11.34%	13	11.44%	22	-9.03%	5.11%	2.87%	7.98%
2001	11.07%	15	10.96%	5	11.04%	20	-11.85%	5.05%	3.62%	8.67%
2002	11.21%	14	11.17%	19	11.19%	33	-21.97%	3.81%	4.10%	7.91%
2003	10.96%	20	10.99%	25	10.98%	45	28.36%	4.25%	3.69%	7.94%
2004	10.81%	21	10.63%	22	10.72%	43	10.74%	4.22%	3.65%	7.87%
2005	10.51%	24	10.41%	26	10.46%	50	4.83%	4.39%	4.08%	8.47%
2006	10.32%	26	10.40%	15	10.35%	41	15.61%	4.70%	4.16%	8.86%
2007	10.30%	38	10.22%	35	10.26%	73	5.48%	4.02%	4.37%	8.39%
2008	10.41%	37	10.39%	32	10.40%	69	-36.55%	2.21%	6.43%	8.64%
2009	10.52%	40	10.22%	30	10.39%	70	25.94%	3.84%	4.36%	8.20%
2010	10.37%	61	10.15%	39	10.28%	100	14.82%	3.29%	5.20%	8.49%
2011	10.29%	42	9.92%	16	10.19%	58	2.10%	1.88%	6.01%	7.89%
2012	10.17%	58	9.94%	35	10.08%	93	15.89%	1.76%	5.78%	7.54%
2013	10.03%	49	9.68%	21	9.93%	70	32.15%	3.04%	4.96%	8.00%
2014	9.91%	38	9.78%	26	9.86%	64	13.52%	2.17%	5.78%	7.95%
2015	9.85%	30	9.60%	16	9.76%	46	1.38%	2.27%	6.12%	8.39%
2016	9.77%	42	9.54%	26	9.68%	68	11.77%	2.45%	5.69%	8.14%
2017	9.74%	53	9.72%	24	9.73%	77	21.61%	2.41%	5.08%	7.49%
2018	9.64%	37	9.62%	26	9.63%	63	-4.23%	2.68%	5.96%	8.64%
2019	9.66%	67	9.71%	32	9.68%	99	31.22%	1.92%	5.20%	7.12%
2020	9.44%	43	9.46%	34	9.45%	77	18.01%	0.93%	4.72%	5.65%
2021	9.40%	55	9.52%	29	9.44%	84	18.01%	1.51%	4.24%	5.75%

[1], [2], [3] Average annual authorized ROE for electric and gas utilities, RRA Regulatory Focus: Major Rate Case Decisions; EEI Rate Review

[3] = [1] + [2]

[4], [5], [6] Annual S&P 500 return, 10-year T-bond Rate, and equity risk premium published by NYU Stern School of Business

[7] = [5] + [6] ; Market cost of equity represents the required return for investing in all stocks in the market for a given year

Proxy Company Debt Ratios

Company	Ticker	Debt Ratio
Atmos Energy Corp	ATO	38%
Chesapeake Utilities Corp	CPK	42%
New Jersey Resources Corporation	NJR	57%
NiSource Inc	NI	57%
Northwest Natural Holding Company	NWN	53%
ONE Gas Inc	OGS	61%
South Jersey Industries Inc	SJI	62%
Southwest Gas Holdings Inc	SWX	58%
Spire Inc.	SR	53%
Average		53%

Debt ratios from Value Line Investment Survey - Year End 2021

Competitive Industry Debt Ratios

Industry	# Firms	Debt Ratio
Air Transport	21	85%
Hospitals/Healthcare Facilities	31	80%
Hotel/Gaming	66	77%
Brokerage & Investment Banking	31	76%
Retail (Automotive)	32	72%
Food Wholesalers	15	68%
Retail (Grocery and Food)	15	68%
Rubber& Tires	2	67%
Bank (Money Center)	7	67%
Advertising	49	67%
Computers/Peripherals	46	67%
Auto & Truck	26	66%
Real Estate (Operations & Services)	51	66%
Retail (Special Lines)	76	64%
Cable TV	11	63%
Oil/Gas Distribution	21	63%
Packaging & Container	26	62%
Telecom. Services	42	61%
Recreation	60	61%
Broadcasting	28	60%
Transportation (Railroads)	4	60%
R.E.I.T.	238	60%
Power	50	60%
Telecom (Wireless)	17	59%
Transportation	17	59%
Beverage (Soft)	32	58%
Utility (Water)	14	57%
Retail (Distributors)	68	57%
Office Equipment & Services	18	57%
Aerospace/Defense	73	57%
Household Products	118	56%
Computer Services	83	56%
Green & Renewable Energy	20	56%
Chemical (Diversified)	4	55%
Trucking	34	55%
Farming/Agriculture	36	54%
Environmental & Waste Services	58	54%
Apparel	39	54%
Paper/Forest Products	11	54%
Retail (Online)	60	53%
Chemical (Basic)	35	53%
Real Estate (Development)	19	52%
Business & Consumer Services	160	52%
Coal & Related Energy	18	52%
Construction Supplies	48	51%
Total / Average	**1,930**	**61%**

http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/dbtfund.htm

Weighted Average Rate of Return Proposal

Capital Component	Proposed Ratio	Cost Rate	Weighted Cost
Long-Term Debt	48.3%	4.51%	2.18%
Short-Term Debt	2.4%	1.65%	0.04%
Common Equity	49.3%	8.75%	4.32%
Total	100.0%		6.53%

Hamada Model

Unlevering Beta

Proposed Debt Ratio	43%	[1]
Proposed Equity Ratio	54%	[2]
Debt / Equity Ratio	79%	[3]
Tax Rate	21%	[4]
Equity Risk Premium	5.8%	[5]
Risk-free Rate	3.0%	[6]
Proxy Group Beta	0.85	[7]
Unlevered Beta	0.52	[8]

Relevered Betas and Cost of Equity Estimates

[9] Debt Ratio	[10] D/E Ratio	[11] Levered Beta	[12] Cost of Equity
0.0%	0%	0.522	6.02%
20.0%	25%	0.625	6.63%
30.0%	43%	0.699	7.05%
43.2%	76%	0.836	7.85%
48.3%	93%	0.907	8.27%
55.0%	122%	1.026	8.96%
60.0%	150%	1.141	9.63%

[1] Company proposed debt ratio

[2] Company proposed equity ratio

[3] = [1] / [2]

[4] Tax rate

[5] Equity risk premium from Exhibit DJG-11

[6] Risk-free rate from Exhibit DJG-11

[7] Average proxy beta from Exhibit DJG-11

[8] = [7] / (1 + (1 - [4]) * [3])

[9] Various debt ratios (Garrett proposed highlighted)

[10] = [9] / (1 - [9])

[11] = [8] * (1 + (1 - [4]) * [10])

[12] = [6] + [11] * [5]

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Re:	Pennsylvania Public Utility Commission	:	
		:	
	v.	:	Docket No. R-2022-3031211
		:	
	Columbia Gas of Pennsylvania, Inc.	:	

VERIFICATION

I, David J. Garrett, hereby state that the facts set forth in my Direct Testimony, OCA Statement 2, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa. C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: June 7, 2022
*330105

Signature: ______________________
David J. Garrett

Consultant Address: Resolve Utility Consulting PLLC
101 Park Avenue
Suite 1125
Oklahoma City, OK 73102

OCA Statement No. 3

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY COMMISSION	)	
	)	
v.	)	Docket No. R-2022-3031211
	)	
COLUMBIA GAS OF PENNSYLVANIA, INC.	)	

DIRECT TESTIMONY OF

JEROME D. MIERZWA

ON BEHALF OF THE

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

June 7, 2022

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I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Jerome D. Mierzwa. I am a Principal and Vice President of Exeter Associates, Inc. ("Exeter"). My business address is 10480 Little Patuxent Parkway, Suite 300, Columbia, Maryland 21044. Exeter specializes in providing public utility-related consulting services.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.

A. I graduated from Canisius College in Buffalo, New York in 1981 with a Bachelor of Science Degree in Marketing. In 1985, I received a Master's Degree in Business Administration with a concentration in finance, also from Canisius College. In July 1986, I joined National Fuel Gas Distribution Corporation ("NFGD") as a Management Trainee in the Research and Statistical Services ("RSS") Department. I was promoted to Supervisor RSS in January 1987. While employed with NFGD, I conducted various financial and statistical analyses related to the company's market research activity and state regulatory affairs. In April 1987, as part of a corporate reorganization, I was transferred to National Fuel Gas Supply Corporation's ("NFG Supply's") rate department where my responsibilities included utility cost-of-service and rate design analysis, expense and revenue requirement forecasting, and activities related to federal regulation. I was also responsible for preparing NFG Supply's Federal Energy Regulatory Commission ("FERC") Purchased Gas Adjustment ("PGA") filings and developing interstate pipeline and spot market supply gas price projections. These forecasts were utilized for internal planning purposes as well as in NFGD's 1307(f) proceedings.

In April 1990, I accepted a position as a Utility Analyst with Exeter. In December 1992, I was promoted to Senior Regulatory Analyst. Effective April 1996, I became a Principal of Exeter. Since joining Exeter, I have specialized in evaluating the gas purchasing practices and policies of natural gas utilities, utility class cost-of-service and rate design analyses, sales and rate forecasting, performance-based incentive regulation, revenue requirement analysis, the unbundling of utility services, and evaluation of customer choice natural gas transportation programs.

Q. HAVE YOU PREVIOUSLY TESTIFIED ON UTILITY RATES IN REGULATORY PROCEEDINGS?

A. Yes. I have provided testimony on nearly 400 occasions in proceedings before the FERC and utility regulatory commissions in Arkansas, Delaware, Georgia, Illinois, Indiana, Louisiana, Maine, Massachusetts, Montana, Nevada, New Hampshire, New Jersey, Ohio, Rhode Island, South Carolina, Texas, Utah, and Virginia, as well as before the Pennsylvania Public Utility Commission ("Commission").

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. On March 18, 2022, Columbia Gas of Pennsylvania, Inc. ("Columbia" or "Company") filed an application with the Commission to increase its distribution base rates by $88.2 million, or 14.2 percent. Exeter was retained by the Pennsylvania Office of Consumer Advocate ("OCA") to review the allocated cost-of-service ("ACOS") studies and rate design proposals included in Columbia's application, as well as the Company's proposal to implement a Revenue Normalization Adjustment ("RNA") mechanism. My testimony addresses Columbia's ACOS studies and proposed rate design, as well the proposed RNA.

Q. PLEASE SUMMARIZE YOUR FINDINGS AND RECOMMENDATIONS.

A. My findings and recommendations are as follows:

- Typical of a natural gas distribution company ("NGDC"), a significant percentage of Columbia's plant, approximately 65 percent, is comprised of distribution mains.

- Columbia is sponsoring ACOS Studies in its application using two different methodologies, each at present and proposed rates. Under one method, distribution mains investment is allocated partially based on the number of customers and partially based on design day demands ("Customer-Demand Study"). Under the second method, distribution mains investment is allocated utilizing the Peak and Average method ("Peak & Average Study"). Columbia's application also includes a third ACOS study that reflects an average of the Customer-Demand and Peak & Average ACOS Studies ("Average Study"). Columbia claims that it has relied on the Peak & Average Study to support its proposed revenue distribution among its various customer classes in this proceeding.

- Columbia's reliance on the Peak & Average Study as the basis of its proposed revenue distribution is consistent with Commission precedent and the Commission's decision in the Company's last litigated base rate proceeding (Docket No. R-2020-3018835). It is also consistent with cost of service principles. However, the revenue distribution presented by Columbia does not reflect adequate movement toward cost-based rates for each customer class, and does not adequately account for the significant subsidies provided to certain customers that receive service at less than cost of service rates.

- The OCA's proposed revenue distribution in this proceeding, which is also based on the Company's Peak & Average Study, provides for reasonable movement toward cost-based rates and adequately accounts for the subsidies provided to certain customers and, therefore, should be accepted by the Commission in this proceeding.

- Columbia's proposed Residential customer charge of $25.47 is unreasonable and should be rejected.

- The proposed RNA should be rejected.

Q. HOW IS THE REMAINDER OF YOUR TESTIMONY ORGANIZED?

A. Including this introductory section, my testimony is divided into five sections. In the following section, I describe the ACOS Studies presented by Columbia in this proceeding and explain why the Company's Peak & Average Study should be used to determine the distribution of the revenue increase authorized by the Commission in this proceeding. The next section addresses class revenue requirement allocations. The fourth section of my testimony addresses Columbia's proposed Residential rate design. The final section of my testimony addresses Columbia's proposed RNA.

II. COST ALLOCATION

Q. BRIEFLY DESCRIBE THE COST-OF-SERVICE STUDIES SUBMITTED BY COLUMBIA IN THIS PROCEEDING.

A. Columbia submitted average embedded ACOS Studies employing two different cost allocation methodologies. These cost allocation methods differ in the approach used to allocate distribution mains investment. The Company's ACOS Studies are sponsored by Mr. Kevin L. Johnson (Columbia Statement No. 6).

Q. PLEASE IDENTIFY THE CUSTOMER RATE CLASSES INCLUDED IN THE COMPANY'S ACOS STUDIES.

A. The Company's ACOS Studies include seven rate classes:

- Residential Sales Service and Residential Distribution Service ("RSS/RDS");
- Low-Volume Small General Sales Service, Small Commercial Distribution Service, and Small General Distribution Service ("SGSS/DS-1");
- High-Volume Small General Sales Service, Small Commercial Distribution Service, and Small General Distribution Service ("SGSS/DS-2");
- Small Distribution Service and low-volume, Large General Sales Service ("SDS/LGSS");
- Large Distribution Service and high-volume, Large General Sales Service ("LDS/LGSS");
- Main Line Distribution Service ("MLDS"); and
- Flexible Rate Provisions and Negotiated Contract Service ("Flex").

Q. HOW DO THE ACOS STUDIES PREPARED BY COLUMBIA DIFFER?

A. In Columbia's ACOS Studies, the Company first identified and directly assigned the actual investment inventory of distribution mains for the MLDS rate class. The distribution mains investment not assigned to the MLDS rate class was allocated to the remaining rate classes. Columbia then prepared ACOS Studies utilizing two different methods to allocate the non-MLDS distribution mains investment to the other rate class. Both methods were used to prepare ACOS Studies at present and proposed rates.

Under the first method, which I will refer to as the Customer-Demand method, distribution mains investment was allocated to rate class partially based on the number of customers and partially based on the design peak day demands of the customers in each rate class. Under the second method, which I will refer to as the Peak & Average method, the remaining distribution mains investment was allocated 50 percent based on the design peak day demands and 50 percent based on annual, or average daily, demands of the customers in each rate class. In addition to the ACOS Studies prepared using these two methods, the Company prepared an Average ACOS which reflects an average of the Customer-Demand and Peak & Average ACOS Studies.

Q. WHICH ACOS STUDY DID THE COMPANY UTILIZE AS THE PRIMARY GUIDE FOR THE DISTRIBUTION OF THE REVENUE INCREASE AUTHORIZED BY THE COMMISSION IN THIS PROCEEDING?

A. Columbia has used the Peak & Average Study as the ACOS study to establish rates in this proceeding. The Peak & Average Study was given primary consideration because of the Commission's decision in the Company's 2020 rate case (Docket No. R-2020-3018835) which approved the use of the Peak & Average method. In the Opinion and Order issued in that proceeding on February 19, 2021, the Commission found:

> Based on our review of the record, and as noted by the ALJ, we have consistently used the Peak & Average methodology for the allocation costs for NGDCs. In this regard, we find that the Customer-Demand method and the Average ACCOSS, which depends on the Customer-

> Demand methodology, would be inconsistent with Commission precedent and generally accepted principles for NGDCs because they both contain customer cost components.
>
> We are persuaded by the arguments presented by the OCA's witness, Mr. Mierzwa, on pages 6-7 of the OCA's Statement No. 4, and in the OCA's Main Brief on pages 139-145, which we adopt herein, by reference, where he describes the faults of adopting the Customer-Demand ACCOSS. In the OCA's Statement No. 4, Mr. Mierzwa explained that under the Customer-Demand method, "the distribution mains investment assigned to each category is allocated to rate class **partially based on the number of customers** and partially based on the design day demands of the customers in each rate class that are served by each of the categories of distribution mains …." OCA St. 4 at 6-7 (emphasis added). In the OCA's Main Brief, Mr. Mierzwa pointed out that the Customer-Demand ACCOSS uses "a minimum system approach where the entire distribution mains system is hypothetically comprised of only 2-inch pipe." Mr. Mierzwa continued that, "[t]he goal of such a study is to attempt to assign costs based on merely connecting customers to the system, as opposed to supplying gas to customers – which is how the distribution system actually works on a day-to-day basis." OCA M.B. at 140. (Order at 215).
>
> In light of the above, we remain of the opinion that although mains serve customers, it is the throughput that determines the type of main investment because it is the load that determines the main investment, not the number of customers served. The existence of one customer, five customers, or ten customers does not determine the amount of mains investment. Mains investment is driven by the loads placed upon it, not by the number of customers served.
>
> Furthermore, distribution mains exist and are related to both annual demands and peak demands. Both annual and peak demands must be recognized in the allocation of distribution mains cost if the allocation is to be in accord with the principle of cost-causality. It is not reasonable to allocate distribution mains investment based solely on design peak day demands as in Columbia's Customer-Demand ACCOSS. The basic

> reason Columbia invests in its distribution system is to meet the annual demands for gas by customers. Additionally, a portion of the total cost of distribution service is related to installing a system with enough throughput capacity to meet design peak demands in excess of annual demands. (Order at 217).
>
> For all these reasons, we find that the Peak & Average allocation methodology is the most appropriate allocation methodology to use in this proceeding because it is based on the premise of load-based investment. Accordingly, we shall deny Columbia's Exceptions Nos. 18 and 19, and the OSBA's Exception No. 1, and PSU's Exception No. 1 as they relate to their respective ACCOSS arguments and adopt the OCA's P&A ACCOSS as proffered by OCA Witness Mr. Mierzwa in OCA Statement No. 4, at 5-33, and the OCA's Main Brief, at 150-155. (Order at 218).

Q. PLEASE SUMMARIZE THE RESULTS OF COLUMBIA'S PEAK & AVERAGE ACOS.

A. Table 1 shows the results of Columbia's Peak & Average Study at present rates.

Table 1.
Class Rates of Return
Columbia Peak & Average ACOS Study
Results at Present Rates

Class	Rate of Return	Index
RSS/RDS	7.97%	1.30
SGSS/DS-1	6.69	1.09
SGSS/DS-2	6.68	1.09
SDS/LGSS	5.39	0.88
LDS/LGSS	1.68	0.27
MLDS	179.58	29.29
FLEX	(4.202)	(0.69)
Overall:	**6.181%**	**1.00**

Q. SHOULD THE COMPANY'S PEAK & AVERAGE ACOS STUDY BE UTILIZED TO DETERMINE THE DISTRIBUTION OF THE REVENUE INCREASE AUTHORIZED IN THIS PROCEEDING?

A. Yes.

III. CLASS REVENUE REQUIREMENTS

Q. PLEASE DESCRIBE HOW COLUMBIA IS PROPOSING TO DISTRIBUTE ITS REQUESTED REVENUE INCREASE AMONG ITS CUSTOMER CLASSES IN THIS PROCEEDING.

A. Columbia claims that it generally sought to allocate the revenue increase toward the cost of service indicated by the results of its Peak & Average Study. The Company's proposed base rate revenue distribution is presented in Table 2. The relative rates of return ("ROR") at present and proposed rates are also identified in Table 2. An ROR of less than 1.0 indicates that a customer class is providing revenues that are less than that classes' indicated cost of service, a ROR 1.0 indicates that a customer class is providing revenues that are equal to that classes' indicated cost of service, and a ROR greater than 1.0 indicates that a customer class is providing revenues that are greater than that classes' indicated cost of service.

Table 2.
Columbia Proposed Revenue Distribution

Class	Present Rates	Proposed Rates	Increase	Percent	Relative Rate of Return: Present Rates	Relative Rate of Return: Proposed Rates
RSS/RDS	$421,160,909	$477,614,435	$56,453,526	13.4%	1.30	1.27
SGSS/DS-1	48,226,212	55,153,980	6,927,768	14.4%	1.09	1.06
SGSS/DS-2	50,190,486	57,530,834	7,340,348	14.6%	1.09	1.05
SDS/LGSS	30,108,161	36,271,053	6,162,892	20.5%	0.88	0.94
LDS/LGSS	23,934,662	29,188,161	5,253,499	21.9%	0.27	0.40
MLDS	1,448,089	1,448,314	225	0.0%	29.29	22.23
FLEX	4,270,723	4,284,374	13,651	0.3%	(0.69)	(0.52)
Total:	**$579,339,242**	**$661,491,151**	**$82,151,909**	**14.2%**	**1.00**	**1.00**

Q. WHAT ARE SOME OF THE PRINCIPLES OF A SOUND REVENUE ALLOCATION?

A. A sound revenue allocation should:

- Utilize class cost-of-service study results as a guide;
- Provide stability and predictability of the rates themselves, with a minimum of unexpected changes that are seriously adverse to ratepayers or the utility (gradualism);
- Yield the total revenue requirement;
- Provide for simplicity, certainty, convenience of payment, understandability, public acceptability, and feasibility of application; and reflect fairness in the apportionment of the total cost of service among the various customer classes.[1]

Q. IS COLUMBIA'S PROPOSED REVENUE ALLOCATION REASONABLE?

A. No. Although Columbia's proposed revenue allocation may be based on the results of the Company's Peak & Average Study, but it does not reflect adequate movement toward cost-based rates for each customer class and does not adequately account for

[1] *Principles of Public Utility Rates*, Second Edition, James C. Bonbright, Albert L. Danielsen, David R. Kamerschen; Public Utility Reports, Inc., 1988, pages 383-384.

the significant subsidies provided to LDS/LGSS and Flex rate customers that receive service at less than cost of service rates.[2]

Q. PLEASE IDENTIFY THE SUBSIDIES CURRENTLY PROVIDED TO LDS/LGSS AND FLEX RATE CUSTOMERS.

A. As indicated in Table 1, LDS/LGSS customers currently provide a rate of return of 1.68 percent at present rates. To provide revenues equal to the cost of service indicated by the Company's Peak & Average Study at proposed rates, LDS/LGSS customer revenue would need to be increased from the current level of $23,934,662 (Table 2) to approximately $39,900,000, or by $16,000,000 ($39,000,000 - $23,934,662 = $15,965,338). As such, at proposed rates, other customers would be providing a subsidy of $16,000,000 to LDS/LGSS customers. Under my subsequently discussed revenue distribution, I am recommending that LDS/LGSS customer revenues be increased to $30,688,161 (Table 3). Therefore, under my proposed revenue distribution, the subsidy being provided to LDS/LGSS customers would be $12,600,000[3].

As indicated in Table 1, Flex rate customers currently provide a negative rate of return of 4.202 percent at present rates. To provide revenues equal to the cost of service indicated by the Company's Peak & Average Study at proposed rates, Flex rate customer revenue would need to be increased from the current proposed level of $4,284,374 (Table 2) to approximately $45,500,000, or by $41,200,000. As such, other customers are providing a subsidy of $41,200,000 to Flex rate customers. In total, a subsidy of $57,200,000 would be being provided to LDS/LGSS and Flex rate customers at proposed rates.

[2] SDS/LGSS customers are also provided a small subsidy under present and proposed rates.

[3] Subsidy of approximately $16,000,000 reduced by the difference between the Company's proposed increase of $5,253,499 (Table 2) and the OCA's proposed increase of $8,492,975 (Table 3).

Q. WHAT DO YOU RECOMMEND WITH RESPECT TO THE ALLOCATION OF COLUMBIA'S PROPOSED REVENUE INCREASE?

A. Table 3 summarizes my recommended revenue distribution at proposed rates for the Company's claimed revenue deficiency and is based on Columbia's Peak & Average ACOS study. Also identified is the relative rate of return at proposed rates under my revenue distribution.

Table 3.
OCA Proposed Revenue Distribution

					Relative Rate of Return	
Class	**Present Rates**	**Proposed Rates**	**Increase**	**Percent**	**Present Rates**	**Proposed Rates**
RSS/RDS	$421,160,909	$450,884,128	$44,038,372	10.5%	1.30	1.21
SGSS/DS-1	48,226,212	63,092,876	10,897,216	22.6	1.09	1.19
SGSS/DS-2	50,190,486	66,762,080	11,955,971	23.8	1.09	1.19
SDS/LGSS	30,108,161	44,331,219	8,492,975	28.2	0.88	1.05
LDS/LGSS	23,934,662	30,688,161	6,753,499	28.2	0.27	0.46
MLDS	1,448,089	1,448,314	225	0.0	29.29	22.23
FLEX	4,270,723	4,284,374	13,651	0.3	(0.69)	(0.52)
Total:	**$579,339,242**	**$661,491,151**	**$82,151,909**	**14.2%**	**1.00**	**1.00**

Q. HOW DID YOU DEVELOP YOUR PROPOSED REVENUE DISTRIBUTION?

A. As indicated in Table 2, the LDS/LGSS rate class is providing a return which is significantly lower than the indicated cost of service (ROR of 0.40). While there is no hard and fast rule with respect to applying the concept of gradualism in developing a revenue distribution, typically an increase of 1.5 to 2.0 times the system average increase is considered consistent with the concept of gradualism. Therefore, I assigned an increase of approximately 2.0 times the system average increase to the LDS/LGSS rate class. I accepted the Company's proposal concerning distribution of the revenue increase to the MLDS class since this class is providing a return which is significantly greater than the indicated cost of service.

Due to the $57,200,000 subsidy being provided to LDS/LGSS and Flex rate customers, it is necessary for other classes to pay rates in excess of the cost of service if Columbia is entitled to collect 100 percent of its cost of service. To calculate the subsidy being paid by the other remaining customer classes, I determined the revenues at proposed rates that would yield a ROR of approximately 1.0 for each class, and subtracted the revenues at proposed rates under Columbia's revenue distribution. This analysis indicated that the RSS/RDS class was providing a subsidy, or overpaying, by $54,500,000. To provide a more reasonable sharing of the LDS/LGSS, and Flex rate customer subsidy, I allocated the subsidy to each rate class, excluding the MLDS, LDS/LGSS and Flex rate classes based on rate base. For the SGSS/DS-1, SGSS1/DS-2, and SDS/LGSS rate classes, I determined revenues at proposed rates by adding the allocated subsidy to the revenues providing a ROR of 1.0. I further adjusted the increase to the SDS/LGSS rate class to limit the increase to 2.0 times the system average increase. The additional revenues assigned to these three rate classes were then deducted from the revenue increase assigned by Columbia to the RSS/RDS class. This resulted in significantly greater movement toward cost of service rates for the RSS/RDS rate class than was provided for under Columbia's proposed revenue distribution.

Q. WHAT DO YOU RECOMMEND WITH RESPECT TO THE SCALE-BACK OF YOUR PROPOSED REVENUE DISTRIBUTION TO REFLECT THE INCREASE ACTUALLY AUTHORIZED BY THE COMMISSION IN THIS PROCEEDING?

A. In the event that Columbia's authorized increase is less than its requested increase, I recommend a proportionate scale-back of the increase for each rate class with the exception of the MLDS and Flex rate classes.

IV. RATE DESIGN

Q. PLEASE DESCRIBE COLUMBIA'S CURRENT AND PROPOSED RESIDENTIAL DISTRIBUTION RATES.

A. Columbia's current Residential sales and transportation customer distribution rates consist of a \$16.75-per-month customer charge and a charge of \$8.3527 for each Dth of gas delivered. Columbia's proposed Residential rate would consist of a \$25.47-per-month customer charge and a \$8.7254-per-Dth delivery charge. Columbia determined its proposed Residential customer charge based on an analysis of customer costs presented on page 25 of the cost-of-service study presented in Exhibit 111, Schedule 2.

Q. SHOULD COLUMBIA'S PROPOSED RESIDENTIAL CUSTOMER CHARGE BE APPROVED?

A. No, for several reasons. First, Columbia's Residential customer charge proposal is out of line with the Residential customer charges of other NGDCs in the Commonwealth. Second, as discussed in the testimony of OCA Witness Colton, Columbia's proposal will have a disproportionate impact on low-income customers. Third, a high fixed monthly customer charge is inconsistent with the Commission's general goal of fostering energy conservation. Finally, the Company's analysis of customer costs includes costs that are not appropriately included in a customer charge and is based on the Company's requested increase which will be higher than the increase authorized by the Commission in this proceeding.

Q. HOW DOES COLUMBIA'S RESIDENTIAL CUSTOMER CHARGE PROPOSAL COMPARE WITH THE MONTHLY RESIDENTIAL CUSTOMER CHARGES OF OTHER NGDCs IN THE COMMONWEALTH?

A. Table 4 provides a comparison of Columbia's Residential customer charge proposal with the customer charges of other Pennsylvania NGDCs. As shown there, Columbia's current charge is already the highest in the Commonwealth, and if adopted, Columbia's proposed monthly Residential customer charge would be significantly higher than that of any other NGDC in the Commonwealth.

Table 4.
Comparison of Residential Customer Charges for Pennsylvania NGDCs

Columbia Gas of Pennsylvania – Proposed	**$25.47**
Columbia Gas of Pennsylvania – Current	**$16.75**
Peoples Gas	$15.75
Philadelphia Gas Works	$14.90
UGI Gas	$14.60
Peoples Natural Gas	$14.50
PECO Energy Company	$13.63
National Fuel Gas Company	$12.00

Q. WHY IS A HIGH FIXED MONTHLY CUSTOMER CHARGE INCONSISTENT WITH THE COMMISSION'S GENERAL GOAL OF FOSTERING ENERGY CONSERVATION?

A. The more revenue collected through the fixed monthly charge, the lower the volumetric charge. The higher the volumetric charge, the greater the incentive to lower usage.

Q. SHOULD COLUMBIA'S ANALYSIS OF CUSTOMERS COSTS UPON WHICH THE COMPANY RELIES TO SUPPORT ITS RESIDENTIAL CUSTOMER CHARGE BE RELIED UPON TO ESTABLISH THE RESIDENTIAL CUSTOMER CHARGE IN THIS PROCEEDING?

A. No. As just explained, if adopted, Columbia's proposed monthly residential customer charge would be significantly higher than that of any NGDC in the Commonwealth, and is inconsistent with the Commissions general goal of fostering energy conservation. With respect to the Company's analysis of customer costs upon which it relies to support its proposed residential charge of $25.47, only those costs that change directly with the addition or subtraction of a customer should be included in the calculation of a customer charge. Columbia has included uncollectible expense (Account 904), demonstration and selling expense (Account 912), and advertising expense (Account 913) in its calculation. These are not direct customer costs. As shown on Schedule JDM-1, elimination of these expenses would reduce the calculated customer charge to $24.00 based on Columbia's requested increase. This calculated customer charge will be further reduced to reflect the increase authorized by the Commission in this proceeding.

Q. WHAT IS YOUR RECOMMENDATION WITH RESPECT TO COLUMBIA'S MONTHLY RESIDENTIAL CUSTOMER CHARGE?

A. Columbia's currently monthly Residential customer charge is already the highest in the Commonwealth and the proposed charge is inconsistent with the Commissions' goal of encouraging energy conservation. Therefore, I recommend that the existing $16.75 monthly charge be maintained.

Q. DID COLUMBIA PROPOSE AN INCREASE IN ITS MONTHLY RESIDENTIAL CUSTOMER CHARGE IN ITS LAST BASE RATE CASE AND WAS THE INCREASE APPROVED?

A. Yes. Columbia's last litigated proceeding was Docket No. R-2020-3018835. In that proceeding Columbia proposed to increase in its existing monthly customer charge of $16.75 to $23.00. In the Recommended Decision in that proceeding the Administrative Law Judge ("ALJ") found that Columbia's proposed increase in the Residential customer charge was contrary to the Commission's goal of encouraging customers to conserve energy, and denied the Company's requested increase in the monthly customer charge. (Order, at 264). The Commission adopted the ALJ's decision regarding the Residential customer charge. (Order, at 265).

V. <u>REVENUE NORMALIZATION ADJUSTMENT</u>

Q. BRIEFLY DESCRIBE THE RNA PROPOSED BY COLUMBIA.

A. Under the RNA, Peak (October-March) and Off-Peak (April-September) benchmark revenue per Residential customer ("Benchmark Distribution Revenue per Bill" or "BDRB") levels would be established through a base rate case proceeding.[4] Through the RNA, the Company would collect or refund any variation in Residential revenues that differed from the BDRB not due to differences between actual and normal weather. The RNA would be calculated and assessed on a total Residential class revenue basis rather than an individual customer revenue basis.

Q. HAS THE COMMISSION ADOPTED A STATEMENT OF POLICY CONCERNING ALTERNATIVE RATE MAKING MECHANISMS SUCH AS THE RNA?

A. Yes. In an Order entered July 18, 2019, in Docket No. M-2015-2518883, the Commission set forth its Statement of Policy with respect to alternative ratemaking methodologies. In its Statement of Policy, the Commission identified 14 factors it would consider in evaluating an alternative ratemaking mechanism. The Statement of Policy required a utility proposing an alternative ratemaking mechanism to explain how each of these 14 factors impact the rates of each customer class.

Q. DOES THE COMPANY ADDRESS THESE 14 FACTORS IN ITS DIRECT TESTIMONY IN THIS PROCEEDING?

[4] The RNA would not apply to Residential customer assistance program customers.

A. Yes, the 14 factors are identified in the Direct Testimony of Mr. Johnson. Mr. Johnson also addresses how the RNA allegedly aligns with the Commission's Statement of Policy on alternative ratemaking.

Q. WHAT ARE THE 14 FACTORS FOR CONSIDERATION IDENTIFIED IN THE COMMISSION'S STATEMENT OF POLICY ON ALTERNATIVE RATEMAKING, WHAT IS MR. JOHNSON'S RESPONSE TO THE 14 FACTORS, AND WHAT IS YOUR RESPONSE TO MR. JOHNSON'S CLAIMS?

A. Each rate consideration identified in the Statement of Policy is listed below along with the claimed relevant effect of the RNA on each rate consideration. Also identified below is my response to the Company's claim:

Consideration 1 Please explain how the ratemaking mechanism and rate design align revenues with cost causation principles as to both fixed and variable costs.

COLUMBIA: Columbia's proposed RNA is designed to recover the residential base revenues needed to satisfy the cost of service requirements determined in this proceeding while negating over or under recovery of costs.

OCA: The Company's response does not indicate how the mechanism aligns revenues with cost causation as to fixed and variable costs.

Consideration 2 Please explain how the ratemaking mechanism and rate design impact the fixed utility's capacity utilization.

COLUMBIA: Columbia's RNA proposal has no identifiable effect on the capacity utilization of the residential class.

OCA: I agree with the Company's response.

Consideration 3 Please explain whether the ratemaking mechanism and rate design reflect the level of demand associated with the customer's anticipated consumption levels.

	COLUMBIA: Columbia's RNA benchmark revenue includes the anticipated volumetric base revenue derived from the fully projected test year consumption.
	OCA: I agree with the Company's response.
Consideration 4	Please explain how the ratemaking mechanism and rate design limit or eliminate inter-class and intra-class cost shifting.
	COLUMBIA: Columbia's RNA minimizes inter-class cost subsidization by limiting the amount of cost recovery for the residential class to the revenue benchmark established in this case. Residential intra-class cost subsidization is reduced through Columbia's proposal of a higher customer charge for the residential class.
	OCA: The RNA is only applicable to the Residential class and, therefore, does not affect interclass cost shifting. The Company's higher Residential customer charge proposal, which should be rejected, is unrelated to the RNA.
Consideration 5	Please explain how the RNA limits or eliminates disincentives for the promotion of efficiency programs.
	COLUMBIA: Reduced throughput will not lead to revenue and earnings erosion due to under-recovery because the link between level of throughput and base revenue recoveries is broken with the implementation of the RNA.
	OCA: Columbia has not proposed any new energy efficiency programs in this proceeding. The RNA actually disincentives customers to engage in energy efficiency programs because less of a customer's total bill would be subject to reduction through energy conservation.
Consideration 6	Please explain how the RNA impacts customer incentives to employ efficiency measures and distributed energy resources.
	COLUMBIA: Customers will continue to have an incentive to pursue energy efficiency measures since approximately 30% of an average residential bill is still subject to volumetric usage not related to base rate revenue recovery.
	OCA: The RNA reduces the incentive for Residential customers to pursue energy efficiency programs. Base rate revenue savings that would ordinarily be achieved through

usage reductions will be offset by higher usage charges under the RNA.

Consideration 7	Please explain how the RNA impacts low-income customers and support consumer assistance programs.
	<u>COLUMBIA</u>: Columbia's proposed RNA only applies to non-CAP customers.
	<u>OCA</u>: The RNA will not impact CAP customers.
	However, as OCA witness Colton points out, not all low-income customers are enrolled in CAP and for those customers not enrolled in CAP, the RNA will be applied to their bills and have the same effect of being a disincentive to energy efficiency as non-low-income customers
Consideration 8	Please explain how the RNA impacts customer rate stability principles.
	<u>COLUMBIA</u>: Columbia's proposed RNA enables the recovery of costs established in this case and, therefore, mitigates the potential under or over recovery of costs that could require a material rate adjustment in the future.
	<u>OCA</u>: Under the current regulatory standard in Pennsylvania, base rate cost under and over recoveries are currently not tracked and are not eligible for recovery in future base rate proceedings. The RNA will not change this standard.
Consideration 9	Please explain how weather impacts utility revenue under the RNA.
	<u>COLUMBIA</u>: The RNA, as proposed will capture base revenue differences net of weather as the benchmark is based upon normal weather and the actual revenue will include billed WNA adjustments.
	<u>OCA</u>: Weather will not impact utility revenue under the

RNA.

Consideration 10 Please explain how the RNA impacts the frequency of rate case filings and affects regulatory lag.

COLUMBIA: The RNA is designed to mitigate the over or under recovery of the residential cost of service in this case. Future rate cases would still be required to capture cost of service changes that occur beyond the residential class and the fully projected test year in this case.

OCA: For a utility that files a rate case every 3 to 5 years, the RNA could reduce the frequency of filings. However, Columbia files a rate case nearly every year and, therefore, Columbia's Residential customers will not experience rate stability under the RNA.

Consideration 11 Please explain if the RNA interacts with other revenue sources, such as Section 1307 automatic adjustment surcharges, 66 Pa.C.S. § 1307 (relating to sliding scale of rates; adjustments), riders such as 66 Pa.C.S. § 2804(9) (relating to standards for restructuring of electric industry) or system improvement charges, 66 Pa.C.S. § 1353 (relating to distribution system improvement charge).

COLUMBIA: Columbia's proposed RNA only applies to the recovery of costs included in determination of the residential base revenue requirement.

OCA: The RNA will not interact with other revenue sources.

Consideration 12 Please explain whether the RNA includes appropriate consumer protections.

COLUMBIA: The RNA as proposed establishes a Benchmark Distribution Revenue per Bill ("BDRB") residential customer. Rider RNA will refund any amount over the established benchmark, and collect any amount below the benchmark. By design, the Company cannot retain revenue in excess of the BDRB, which protects the customer from being over-charged. Columbia will submit two filings per year for the RNA mechanism, which can be reviewed and audited by the Commission, similar to the process for the Company's PGC and Rider USP filings.

	OCA: The RNA does not include appropriate consumer protections and should be rejected for the reasons subsequently discussed in my testimony.
Consideration 13	Please explain whether the RNA is understandable to customers.
	COLUMBIA: Columbia's RNA is not a unique concept to the regulated utility industry and similar versions have been implemented successfully in other jurisdictions in which Columbia operates. Columbia is also providing an RNA tariff that clearly shows the detail how the mechanism works.
	OCA: Columbia has not provided any evidence that the RNA will be understandable to customers.
Consideration 14	Please explain how the RNA will support improvements in utility reliability.
	COLUMBIA: Columbia's cost of service reflects the investments and costs made for the continued enhancement of the safety and reliability of its system. The RNA reduces the volatility concerning the recovery of those costs.
	OCA: The RNA does not provide an incentive to increase the safety and reliability of Columbia's system.

Q. SHOULD THE RNA BE APPROVED BY THE COMMISSION?

A. No. As just explained, the RNA disincentives customers to engage in energy conservation programs because less of a customer's total bill would be subject to reduction through energy conservation. In addition, the RNA should not be approved for the following reasons:

- The proposed RNA could increase earnings beyond those that the Company would ordinarily be entitled to.
- The proposed RNA unreasonably applies to customers whose usage is relatively constant over time.
- The proposed RNA embodies a take-or-pay pricing policy.
- The proposed RNA inappropriately adjusts rates without considering other changes in total revenues and costs.

- Columbia has not demonstrated that its current system of rates and charges result in inadequate revenue stability.

Based on these concerns, the RNA should not be approved.

Q. PLEASE EXPLAIN HOW THE RNA COULD INCREASE EARNINGS BEYOND THOSE TO WHICH THE COMPANY WOULD ORDINARILY BE ENTITLED.

A. When Columbia adds a new Residential customer, margins from that customer are set under the RNA at the BDRB. A new customer is likely to have purchased a more energy-efficient gas appliance than an average existing customer, and would have lower usage than an average customer, all else being equal. This would increase Columbia's earnings beyond what they would have been without the RNA because Columbia's margins would be based on average Residential customer margins.

Q. DOES THE PROPOSED RNA UNREASONABLY APPLY TO CUSTOMERS WHOSE USAGE IS RELATIVELY CONSTANT OVER TIME?

A. Yes. The RNA would collect or refund any variation in total Residential revenues that differed from the BDRB and that are not due to differences between actual and normal weather. Therefore, the RNA would unreasonably apply to those Residential customers whose usage is relatively constant over time.

Q. DOES THE PROPOSED RNA EMBODY A TAKE-OR-PAY PRICING POLICY?

A. Yes. In the marketplace, consumers pay for the goods and services they receive. Under the proposed RNA, consumers would pay for distribution service they receive and distribution service that they do not receive. No matter how much distribution service is actually purchased by Columbia's Residential customers, ultimately, under the proposed RNA, those customers would pay for the presumed level of service whether they take delivery or not. This conversion of a volumetric rate into rates that yield a given revenue, regardless of the amount of service purchased, converts Columbia's volumetric rate into a take-or-pay billing feature.

Q. PLEASE EXPLAIN HOW THE RNA COULD RESULT IN INAPPROPRIATE RATE ADJUSTMENTS.

A. The proposed RNA operates to change rates, automatically, between rate cases, simply as a function of Residential distribution revenues being different from benchmark revenues due to factors other than weather. There is no review of Columbia's costs, or the volumes and attendant revenues from other customer classes that are not included under the RNA. For example, if Residential usage per customer were to fall over time, while SGSS/DS-1 deliveries increased, Columbia's Residential rates would be increased under the RNA with no recognition of the increased SGSS/DS-1 distribution service revenues. Moreover, if Residential customer distribution service requirements decreased over time, Residential allocated costs should also decrease, thus reducing the Residential revenue requirement. There is no provision in the proposed RNA to adjust Residential class revenue requirements as they may be affected by the very events that trigger automatic price changes under the RNA. The proposed RNA could potentially operate to delay base rate cases, leading to rate increases between base rate cases that may not be supported by a broader review of Columbia's revenue/cost relationship, and leading to Residential class revenue relationships that no longer reflect any basis in allocated costs of service.

Q. HAS COLUMBIA DEMONSTRATED THAT ITS CURRENT SYSTEM OF RATES AND CHARGES DO NOT PROVIDE FOR ADEQUATE REVENUE STABILITY?

A. No. Columbia's current system of rates and charges, which include fixed monthly customer charges, a Purchased Gas Adjustment mechanism, a Weather Normalization Adjustment, and a Distribution System Improvement Charge, provide for revenue stability and Columbia has not demonstrated that this stability is inadequate.

Q. DID THE COMPANY PROPOSE A SIMILAR RNA IN ITS LAST LITIGATED BASE RATE PROCEEDING IN DOCKET NO. R-2020-3018835 AND WAS IT APPROVED BY THE COMMISSION?

A. The Company proposed a similar RNA in its last litigated base rate case. In that proceeding the ALJ determined that the Company failed to prove that the RNA would result in rates that were just and reasonable, in the public interest, and the Company did not demonstrate that its current rates and systems of revenue streams failed to provided revenue stability. (Order at 264-265). The Company did not file exceptions to the ALJ's recommended rejection of its proposed RNA.

Q. ARE THERE OTHER REASONS THAT THE RNA SHOULD NOT BE APPROVED AT THIS TIME?

A. Yes. The COVID-19 pandemic is another reason the RNA should not be approved. There is a great deal of uncertainty concerning the impact of the pandemic on customer usage and unintended consequences could result. For example, the normal usage of Residential customers could change significantly as a result of the pandemic and customers could be assessed charges for these changes in usage. Alternative ratemaking mechanisms such as the RNA need to be accomplished by sufficient consumer protections. In addition, we are in a time of high inflation, including significantly higher energy prices than we have seen in the past. Many consumers are looking for ways to reduce their expenses and energy conservation and efficiency is one such way of doing so. As discussed, the RNA reduces the ability of households to achieve bills savings from reduced energy usage thereby discouraging energy efficiency. Thus, among other reasons, now is simply not the time to approve alternative ratemaking mechanisms such as the RNA.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does at this time.

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY COMMISSION	)	
v.	)	Docket No. R-2022-3031211
COLUMBIA GAS OF PENNSYLVANIA, INC.	)	

SCHEDULE ACCOMPANYING THE

DIRECT TESTIMONY OF

JEROME D. MIERZWA

ON BEHALF OF THE

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

June 7, 2022

COLUMBIA GAS OF PENNSYLVANIA, INC.
CUSTOMER BASED COSTS - CUSTOMER CHARGE CALCULATION EXCLUDING MAINS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2023

ALLOCATED COST OF SERVICE
PEAK & AVERAGE

LINE NO.	ACCT NO.	ACCOUNT TITLE (A)	ALLOC FACTOR (B)	TOTAL COMPANY (C) $	RSS/RDS (D) $	SGS/DS-1 (E) $	SGS/DS-2 (F) $	SDS/LGSS (G) $	LDS/LGSS (I) $	MLDS (J) $	FLEX (K) $
1	303.30	CUSTOMER & OTHER-BASED SOFTWARE [1]	11	19,524,175	11,654,175	1,718,908	1,855,968	1,248,571	1,513,905	3,710	1,528,938
2	380.00	SERVICES	15	855,169,618	778,520,765	62,350,417	11,536,238	1,830,063	538,757	0	393,378
3	380.00	DIRECT - SERVICES	Pg 14	1,554	0	0	0	0	0	561	993
4	380.12	CSL REPLACEMENT	15	0	0	0	0	0	0	0	0
5	381.00	METERS	16	44,799,656	34,665,078	6,653,645	3,094,312	292,990	73,471	4,928	15,232
6	381.10	AUTOMATIC METER READING	16	25,134,959	19,448,928	3,733,044	1,736,072	164,383	41,221	2,765	8,546
7	382.00	METER INSTALLATIONS	16	45,542,208	35,239,650	6,763,929	3,145,600	297,846	74,689	5,010	15,484
8	383.00	HOUSE REGULATORS	21	17,656,503	16,128,685	1,243,901	250,369	27,191	4,414	530	1,413
9	384.00	HOUSE REG INSTALLATIONS	21	3,484,788	3,183,249	245,503	49,414	5,367	871	105	279
10	385.00	IND M&R EQUIPMENT	17	7,324,965	0	122,327	970,558	2,531,801	2,446,538	0	1,253,741
11	385.00	DIRECT - IND M&R EQUIPMENT		478,276	0	0	0	0	0	463,871	14,405
12	385.10	IND M&R EQUIPMENT - LG VOLUME	17	1,018,904	(1)	17,016	135,005	352,174	340,314	0	174,396
13		TOTAL GROSS PLANT		1,020,135,606	898,840,529	82,848,690	22,773,536	6,750,386	5,034,180	481,480	3,406,805
14	303.30	CUSTOMER & OTHER-BASED SOFTWARE [1]	11	7,736,942	4,618,259	681,160	735,474	494,777	599,922	1,470	605,880
15	380.00	SERVICES	15	172,489,154	157,028,951	12,576,184	2,326,879	369,127	108,668	0	79,345
16	380.00	DIRECT - SERVICES	Pg 14	1,314	0	0	0	0	0	436	878
17	380.12	CSL REPLACEMENT	15	0	0	0	0	0	0	0	0
18	381.00	METERS	16	19,420,683	15,027,336	2,884,360	1,341,387	127,011	31,850	2,136	6,603
19	381.10	AUTOMATIC METER READING	16	19,754,808	15,285,875	2,933,984	1,364,465	129,196	32,398	2,173	6,717
20	382.00	METER INSTALLATIONS	16	16,518,699	12,781,839	2,453,357	1,140,947	108,032	27,091	1,817	5,616
21	383.00	HOUSE REGULATORS	21	8,581,133	7,838,609	604,541	121,680	13,215	2,145	257	686
22	384.00	HOUSE REG INSTALLATIONS	21	0	0	0	0	0	0	0	0
23	385.00	IND M&R EQUIPMENT	17	2,839,179	0	47,414	376,191	981,334	948,286	0	485,954
24	385.00	DIRECT - IND M&R EQUIPMENT	Pg 14	99,994	0	0	0	0	0	93,657	6,337
25	385.10	IND M&R EQUIPMENT - LG VOLUME	17	0	0	0	0	0	0	0	0
26		TOTAL DEPRECIATION RESERVE		247,441,906	212,580,869	22,181,000	7,407,023	2,222,692	1,750,360	101,945	1,198,016

[1] INTANGIBLE PLANT @ 25.706% OF TOTAL REPRESENTING CUSTOMER PORTION (PAGE 26)

COLUMBIA GAS OF PENNSYLVANIA, INC.
CUSTOMER BASED COSTS - CUSTOMER CHARGE CALCULATION EXCLUDING MAINS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2023

ALLOCATED COST OF SERVICE
PEAK & AVERAGE

111, SCHEDULE 2
PAGE 24 OF 30
WITNESS: K. L. Johnson

LINE NO.	ACCT NO.	ACCOUNT TITLE (A)	ALLOC FACTOR (B)	TOTAL COMPANY (C) $	RSS/RDS (D) $	SGS/DS-1 (E) $	SGS/DS-2 (F) $	SDS/LGSS (G) $	LDS/LGSS (I) $	MLDS (J) $	FLEX (K) $
1	154.00	CUSTOMER BASED MATERIALS & SUPPLIES	Pg 30	373,641	331,287	30,295	7,811	2,054	1,315	178	701
2	190-282-283	CUSTOMER BASED DEFFERED INCOME TAXE	Pg 30	(110,738,478)	(97,571,570)	(8,993,449)	(2,472,129)	(732,773)	(546,474)	(52,266)	(369,818)
3	235.00	CUSTOMER DEPOSITS	9	(3,554,025)	(2,351,271)	(1,010,978)	(184,703)	(7,073)	0	0	0
4	252.00	CUSTOMER BASED ADVANCES	Pg 30	3,159	2,801	256	66	17	11	2	6
5		TOTAL CUSTOMER-BASED RATE BASE		658,777,996	586,670,907	50,693,814	12,717,558	3,789,919	2,738,672	327,449	1,839,678
6		EQUITY CAPITAL @ 54.380%		358,243,474	319,031,639	27,567,296	6,915,808	2,060,958	1,489,290	178,067	1,000,417
7		RETURN ON RATE BASE @ 8.080%		53,229,262	47,403,009	4,096,060	1,027,579	306,225	221,285	26,458	148,646
8		RETURN ON EQUITY @ 11.200%		40,123,269	35,731,544	3,087,537	774,570	230,827	166,800	19,944	112,047
9	303.30	CUSTOMER & OTHER-BASED SOFTWARE [1]	11	2,964,751	1,769,689	261,017	281,829	189,596	229,887	563	232,170
10	380.00	SERVICES	15	25,843,593	23,527,233	1,884,256	348,630	55,305	16,281	0	11,888
11	380.00	DIRECT - SERVICES	Pg 15	42	0	0	0	0	0	15	27
12	380.12	CSL REPLACEMENT	15	0	0	0	0	0	0	0	0
13	381.00	METERS	16	1,057,168	818,015	157,011	73,019	6,914	1,734	116	359
14	381.10	AUTOMATIC METER READING	16	1,130,030	874,396	167,832	78,051	7,390	1,853	124	384
15	382.00	METER INSTALLATIONS	16	852,161	659,384	126,563	58,859	5,573	1,398	94	290
16	383.00	HOUSE REGULATORS	21	440,003	401,930	30,998	6,239	678	110	13	35
17	384.00	HOUSE REG INSTALLATIONS	21	0	0	0	0	0	0	0	0
18	385.00	IND M&R EQUIPMENT	17	409,431	0	6,837	54,250	141,516	136,750	0	70,078
19	385.00	DIRECT - IND M&R EQUIPMENT	Pg 15	20,518	0	0	0	0	0	19,900	618
20	385.10	IND M&R EQUIPMENT - LG VOLUME	17	0	0	0	0	0	0	0	0
21		TOTAL DEPRECIATION EXPENSES		32,717,697	28,050,647	2,634,514	900,877	406,972	388,013	20,825	315,849
22		TOTAL NET SALVAGE AMORTIZED [1]	11	1,319,823	787,816	116,197	125,462	84,403	102,339	251	103,355
23		TOTAL DEPRECIATION & AMORTIZATION EXPENSES		34,037,520	28,838,463	2,750,711	1,026,339	491,375	490,352	21,076	419,204

[1] NET SALVAGE @ 25.706% OF TOTAL REPRESENTING CUSTOMER PORTION (PAGE 26)

COLUMBIA GAS OF PENNSYLVANIA, INC.
CUSTOMER BASED COSTS - CUSTOMER CHARGE CALCULATION EXCLUDING MAINS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2023

ALLOCATED COST OF SERVICE
PEAK & AVERAGE

WITNESS: K. L. Johnson

LINE NO.	ACCT NO. (A)	ACCOUNT TITLE (B)	ALLOC FACTOR (C)	TOTAL COMPANY (D) $	RSS/RDS (E) $	SGS/DS-1 (F) $	SGS/DS-2 (G) $	SDS/LGSS (H) $	LDS/LGSS (I) $	MLDS (J) $	FLEX (K) $
1	874.00	MAINS & SERVICES [SERVICES ONLY][1]		6,430,955	5,857,505	468,880	86,753	13,762	4,051	4	0
2	876.00	M & R - INDUSTRIAL	17	320,624	0	5,354	42,483	110,820	107,088	0	54,878
3	878.00	METERS & HOUSE REGULATORS	23	1,760,364	1,400,176	240,184	106,643	10,157	2,500	176	528
4	879.00	CUSTOMER INSTALLATIONS	15	5,858,537	5,333,436	427,146	79,032	12,537	3,691	0	2,695
5	890.00	M & R - INDUSTRIAL	17	153,682	0	2,566	20,363	53,119	51,330	0	26,304
6	892.00	SERVICES	15	5,980,905	5,444,836	436,068	80,682	12,799	3,768	0	2,751
7	893.00	METERS & HOUSE REGULATORS	23	533,853	424,621	72,839	32,341	3,080	758	53	160
8		TOTAL DISTRIBUTION		21,038,920	18,460,574	1,653,038	448,296	216,275	173,186	233	87,317
9	901.00	SUPERVISION	6	0	0	0	0	0	0	0	0
10	902.00	METER READING	6	708,802	649,022	50,594	8,279	730	120	21	35
11	903.00	CUSTOMER RECORDS AND COLLECTION EXPENSES	6	7,791,838	7,134,674	556,181	91,009	8,026	1,325	234	390
12	903.00	INTEREST ON CUSTOMER DEPOSITS	9	100,416	66,433	28,564	5,219	200	0	0	0
13	904.00	UNCOLLECTIBLES-DIS REVENUE	7	0	0	0	0	0	0	0	0
14	904.00	UNCOLLECTIBLES-GMB/GTS REVENUE	8	0	0	0	0	0	0	0	0
15	904.00	UNCOLLECTIBLES-DIS COVID-19 DEFERRAL	7	0	0	0	0	0	0	0	0
16	904.00	UNCOLLECTIBLES-GMB/GTS COVID-19 DEFERRAL	8	0	0	0	0	0	0	0	0
17	905.00	MISCELLANEOUS	6	4,483	4,105	320	52	5	1	0	0
18	921.00	OFFICE SUPPLIES & EXPENSES	6	0	0	0	0	0	0	0	0
19		TOTAL CUSTOMER ACCOUNTS		8,605,539	7,854,234	635,660	104,558	8,960	1,446	255	425
20	907.00	SUPERVISION	6	0	0	0	0	0	0	0	0
21	908.00	CUSTOMER ASSISTANCE	6	1,927	1,764	138	23	2	0	0	0
22	909.00	INFORMATIONAL & INSTRUCTIONAL EXPENSES	6	195,512	179,023	13,956	2,284	201	33	6	10
23	910.00	MISCELLANEOUS	6	1,344,985	1,231,549	96,005	15,709	1,385	229	40	67
24	921.00	OFFICE SUPPLIES & EXPENSES	6	0	0	0	0	0	0	0	0
25	931.00	RENTS - GENERAL	6	0	0	0	0	0	0	0	0
26	932.00	MAINTENANCE	6	0	0	0	0	0	0	0	0
27		TOTAL CUST SERVICE & INFORMATION		1,542,424	1,412,336	110,098	18,016	1,589	262	46	77
28	912.00	DEMONSTRATION	6	0	0	0	0	0	0	0	0
29	913.00	ADVERTISING	6	0	0	0	0	0	0	0	0
30		TOTAL SALES		0	0	0	0	0	0	0	0
31		CUSTOMER-RELATED BENEFITS	24	248,221	163,511	21,163	19,458	13,116	15,601	12	15,360
32		CUSTOMER-RELATED PAYROLL TAXES	11	870,492	519,605	76,638	82,749	55,668	67,498	165	68,168
33	TOTAL CUST-RELATED O&M [LINES 8, 19, 27, 30,31 & 32]			32,305,596	28,410,260	2,496,597	673,077	295,608	257,993	713	171,347
34	DEPRECIATION EXPENSE		Pg 24	33,618,316	28,838,463	2,750,711	1,026,339	491,375	490,352	21,076	419,204
35	INCOME TAXES			16,257,100	14,518,209	1,254,508	314,718	93,788	67,773	8,104	45,526
36	RETURN ON RATE BASE		Pg 24	53,080,616	47,403,009	4,096,060	1,027,579	306,225	221,285	26,458	148,646
37		TOTAL ANNUAL CUSTOMER-BASED COST		135,261,628	119,169,941	10,597,876	3,041,713	1,186,996	1,037,403	56,351	784,723
38		AVERAGE ANNUAL CUSTOMER BILLS [2]		5,419,794	4,966,131	384,130	62,656	5,552	915	146	264
39		**MONTHLY CUSTOMER BASED COST/BILL [LINE 37 / LINE 38]**		**$ 24.96**	**$ 24.00**	**$ 27.59**	**$ 48.55**	**$ 213.80**	**$ 1,133.77**	**$ 385.96**	**$ 2,972.44**

[1] MAINS AND SERVICES @ 24.438% OF TOTAL ACCOUNT 874. (PAGE 27)
[2] AVERAGE ANNUAL CUSTOMER BILLS INCLUDE FINAL BILLS (ALLOCATION FACTOR 6 DETAIL).

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Re:	Pennsylvania Public Utility Commission	:	
		:	
	v.	:	Docket No. R-2022-3031211
		:	
	Columbia Gas of Pennsylvania, Inc.	:	

VERIFICATION

I, Jerome D. Mierzwa, hereby state that the facts set forth in my Direct Testimony, OCA Statement 3, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa. C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: June 7, 2022
*330101

Signature: Jerome D. Mierzwa
Jerome D. Mierzwa

Consultant Address: Exeter Associates, Inc.
10480 Little Patuxent Parkway
Suite 300
Columbia, MD 21044-3575

OCA Statement No. 4

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
v.	:	Docket No. R-2022-3031211
Columbia Gas of Pennsylvania	:	

Direct Testimony of
Roger D. Colton

On Behalf of:
Office of Consumer Advocate
Statement No. 4

June 7, 2022

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Q. PLEASE STATE YOUR NAME AND ADDRESS.

A. My name is Roger Colton. My address is 34 Warwick Road, Belmont, MA.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT POSITION?

A. I am a principal in the firm of Fisher Sheehan & Colton, Public Finance and General Economics of Belmont, Massachusetts. In that capacity, I provide technical assistance to a variety of federal and state agencies, consumer organizations and public utilities on rate and customer service issues involving water/sewer, natural gas and electric utilities.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?

A. I am testifying on behalf of the Office of Consumer Advocate.

Q. PLEASE DESCRIBE YOUR PROFESSIONAL BACKGROUND.

A. I work primarily on low-income utility issues. This involves regulatory work on rate and customer service issues, as well as research into low-income usage, payment patterns, and affordability programs. At present, I am working on various projects in the states of New Hampshire, Maryland, Pennsylvania, Ohio, Michigan, Tennessee, Kansas, Wisconsin and Washington. My typical clients include state agencies (e.g., Pennsylvania Office of Consumer Advocate, Maryland Office of People's Counsel, Illinois Office of Attorney General), federal agencies (e.g., the U.S. Department of Health and Human Services), community-based organizations (e.g., National Housing Trust, Natural Resources Defense Council, Advocacy Centre Tenants Ontario), and private utilities (e.g., Toledo Water, Entergy Services, Xcel Energy d/b/a Public Service of Colorado). In addition to state-specific and utility-specific work, I engage in national work throughout the United States. For example, in 2011, I worked with the U.S. Department of Health and Human Services (the federal LIHEAP office) to advance the review and utilization of the Home Energy Insecurity Scale as an outcomes measurement tool for the federal Low-Income Home Energy Assistance Program ("LIHEAP"). In 2007, I was part of a team that performed a multi-sponsor public/private national study of low-income energy assistance programs. In 2020, I completed a study of water affordability in twelve U.S. cities for the London-based newspaper, The Guardian. In 2021, I prepared a Water Affordability Plan for the City of Toledo (OH). A brief description of my professional background is provided in Appendix A.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND.

A. After receiving my undergraduate degree in 1975 (Iowa State University), I obtained further training in both law and economics. I received my law degree in 1981 (University of Florida). I received my Master's Degree (regulatory economics) from the MacGregor School in 1993.

Q. HAVE YOU EVER PUBLISHED ON PUBLIC UTILITY REGULATORY ISSUES?

A. Yes. I have published three books and more than 80 articles in scholarly and trade journals, primarily on low-income utility and housing issues. I have published an equal number of technical reports for various clients on energy, water, telecommunications and other associated low-income utility issues. My most recent publication is a chapter in the book "Energy Justice: US and International Perspectives," published by Edward Elgar Publishing in London. My chapter was titled "The equities of efficiency: distributing usage reduction dollars." It offers an objective definition of "equity" based on legal and economic doctrine.

Q. HAVE YOU EVER TESTIFIED BEFORE THIS OR OTHER UTILITY COMMISSIONS?

A. Yes. I have testified before the Pennsylvania Public Utility Commission ("PUC" or "Commission") on numerous occasions regarding utility issues affecting low-income customers and customer service. I have also testified in regulatory proceedings in more than 300 proceedings in 43 states and various Canadian provinces on a wide range of utility issues. A list of the states and provinces in which I have testified is listed in Appendix A.

Q. PLEASE EXPLAIN THE PURPOSE OF YOUR DIRECT TESTIMONY.

A. The purpose of my Direct Testimony is as follows.

- First, I examine the disproportionate harms that the proposed Columbia Gas residential customer charge will impose on low-income customers;
- Second, I examine the impacts of the Company's proposed Revenue Normalization Adjustment on low-income customers;
- Third, I examine I examine the reasonableness of proposed measurable Outcome Objectives" by which to measure the Columbia Gas performance regarding universal service. I recommend that the Commission, rather than reviewing the universal activities of Columbia Gas (what the Company says it *does*), should instead review what Columbia Gas *accomplishes*;

- Fourth, I examine the reasonableness of the Company's proposed Energy Efficiency Rider from the perspective of low-income customers;
- Fifth, I examine the reasonableness of the Company's proposed energy efficiency plan;
- Finally, I examine the reasonableness of the Company's request for an adder to its return on equity to reflect claims of excellence in management.

Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS.

A. Based on the data and discussion presented below, I recommend as follows:

1. I recommend that the residential customer charge should remain at its current level.
2. I recommend that the recommendation of OCA witness Mierzwa be adopted with respect to Columbia's proposed Revenue Normalization Adjustment and that the proposed Revenue Normalization Adjustment should be denied.
3. I recommend three measurable performance goals that Columbia Gas should seek to accomplish:
    a. Outcome Objective #1: Columbia Gas should achieve a Confirmed Low-Income identification rate, as a percentage of estimated low-income customers, for the utilities as a whole, no less than the Confirmed Low-Income identification rate of the top quartile of Pennsylvania natural gas utilities as a whole (excluding Columbia Gas).
    b. Outcome Objective #2: Columbia Gas should achieve a CAP participation rate, as a percentage of Confirmed Low-Income customers, no less than the CAP participation rate of the top quartile of Pennsylvania natural gas utilities as a whole (excluding Columbia Gas).
    c. Outcome Objective #3: Columbia Gas should achieve a CAP participation rate, as a percentage of its Confirmed Low-Income customers, in the lowest poverty level range that is no less than the

proportion of households in that poverty level range for the Columbia Gas service territory as a whole.

4. I recommend that all Confirmed Low-Income customers be exempted from the Energy Efficiency Rider.

5. I recommend a specific addition to the Columbia Gas residential energy efficiency program which addresses low-income needs. Rather than seeking to create a new low-income program structure, it would be more effective and efficient to add money to the Columbia Gas LIURP program.

6. I recommend that Columbia Gas serve an additional 932 low-income households per year through LIURP over the next ten years.

7. The recommendation of OCA witness Garrett should be adopted with respect to Columbia's request for an additional return on equity.

PART 1. The Impact of the Proposed Columbia Gas Customer Charge on Low-Income Customers.

Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY.

A. In this section of my testimony, I examine how the proposed increase in the Columbia Gas residential customer charge adversely affects low-income customers. Columbia Gas proposes to increase its residential customer charge by 52% (from $16.75 to $25.47 (Johnson, page 23). This proposed increase would impose disproportionate harms on low-income customers.

Q. ARE LOW-INCOME CUSTOMERS PROTECTED AGAINST INCREASES IN THE CUSTOMER CHARGE BY THE COLU8MBIA GAS CUSTOMER ASSISTANCE PROGRAM (CAP)?

A. No. Columbia Gas has confirmed the low-income status of only a portion of its low-income customers. In turn, the Company has enrolled only a portion of its Confirmed Low-Income customers in CAP. In the past two years (2019, 2020) for which data has been reported, Columbia Gas has confirmed the low-income status of only 70% of its estimated number of low-income customers. Most recently (2020), Columbia Gas had nearly 29,000 customers on its system that were low-income, but not identified as low-income on its system. In 2019, Columbia Gas had confirmed the low-income status of 70% of its low-income customers, leaving nearly 30,000 low-income customers unidentified as low-income. (BCS 2020 Report on Universal Service Programs and Collections Performance).[1]

In turn, Columbia Gas has enrolled only a portion of its Confirmed Low-Income customers into CAP. In 2020, only 35% of the Company's Confirmed Low-Income customers were enrolled in CAP. Putting those two figures together, I find that in 2020 only 24% of the low-income customer base of Columbia Gas are even enrolled in the Company's CAP. Moreover, BCS reported in its 2020 report, "Due to the COVID-19 pandemic, most EDCs and NGDCs suspended CAP recertification requirements from March 2020 into 2021. This resulted in fewer customers removed from the program

[1] Available at https://www.puc.pa.gov/media/1709/2020-universal-service-report-final.pdf (last accessed May 24, 2022).

which in turn contributed to higher CAP participation rates in 2020." (BCS 2020 Universal Service Report, at 57).

Table 1. Estimated Low-Income Customers, Confirmed Low-Income Customers, CAP Participants (2018 – 2020)

	Estimated LI	Confirmed LI	Pct Confirmed of Estimated LI	CAP Participants	Pct CLI Participating in CAP	% Estimated LI Participating in CAP
2018	99,925	67,590	68%	23,600	34.9%	24%
2019	97,268	67,582	70%	22,707	33.6%	23%
2020	96,648	68,078	70%	23,542	34.6%	24%

Q. DOES PARTICIPATION IN CAP, UNTO ITSELF, PROTECT LOW-INCOME CUSTOMERS FROM THE HARMS OF AN INCREASED CUSTOMER CHARGE?

A. No. CAP only protects low-income customers from the harms of an increased customer charge if they participate in the percentage of income-based CAP program offered by the Company. If a low-income customer instead participates in the CAP program where CAP bills are based on average bills, any increase in rates, particularly any increase in rates through the unavoidable fixed customer charge, will increase the average bill that must be paid by these CAP participants.

Not all CAP customers participate in the percentage of income part of the CAP. A sizable percentage of CAP participants instead participate in CAP under the average bill structure. According to Columbia Gas, of the 25,096 CAP participants as of April 2022, more than half (53%) (13,426) participate in the 50% budget CAP program component. (CAUSE-PA-I-017).

Q. PLEASE SUMMARIZE THE EXTENT TO WHICH CAP PROTECTS THE LOW-INCOME CUSTOMERS OF COLUMBIA GAS.

A. In 2020, Columbia Gas has confirmed the low-income status of only 70% of its estimated number of low-income customers. Columbia Gas has then enrolled only 35% of those Confirmed Low-Income customers in CAP (35% x 70% = 24%). Of those the low-income customers who are enrolled in CAP, more than half are enrolled in a CAP program structure that bases the participant bills on a 50% discount from the budget bill rather than on a percentage of income. Thus, only a very small percentage of low-income customers (approximately 13%) are protected against the proposed increase in the customer charge by virtue of their CAP participation.

Q. DOES THE IMPACT ON CAP CUSTOMERS AFFECT LOW-INCOME CUSTOMERS NOT PARTICIPATING IN CAP?

A. Yes. Even though the percentage of low-income customers participating in CAP is small, increasing the customer charge to these customers has an adverse impact on other low-income customers. When the residential customer charge is increased, the total cost of the CAP program increases as well. This occurs because the increased bills to the CAP customers participating in the percentage of income program component of Columbia's CAP will be passed through to other ratepayers on a dollar-for-dollar basis. While the individual (percentage of income) CAP participants are protected from the increased fixed customer charge, in other words, the CAP program as a whole is not. Other ratepayers, including non-participating low-income ratepayers, will pay this increase. Even with LIURP and other conservation activities by CAP customers, these increased costs will remain. They cannot be avoided through energy conservation investments.

Q. CAN YOU PLACE THE PROPOSED FIXED MONTHLY CUSTOMER CHARGE INTO SOME CONTEXT FOR LOW-INCOME CUSTOMERS OF COLUMBIA GAS?

A. Yes. As I document above, as of 2020, Columbia Gas had an estimated 96,648 low-income customers on its system. Columbia Gas proposes to increase its fixed customer charge by \$8.72/month (from \$16.75 to \$25.47), or \$104.64/year (\$8.72 x 12 = \$104.64). The total increase in unavoidable fixed charges to the Columbia Gas low-income population is thus \$10,113,247 (\$104.64 x 96,648). In comparison, the low-income customers of Columbia Gas received a total of \$5,161,194 in LIHEAP grants in the 2020-2021 program (\$4,152,610 in Cash grants + \$1,008,584 in Crisis grants). (OCA-3-31). The increased customer charge, standing alone, in other words, will remove nearly twice as much money from the low-income customer base of Columbia Gas (196%) as LIHEAP delivered during 2020.

Q. HOW WILL THE PROPOSED CUSTOMER CHARGE INCREASE IMPACT THE INABILITY-TO-PAY ASSOCIATED WITH COLUMBIA'S LOW-INCOME CUSTOMER BASE?

A. I consider inability-to-pay by reference to Pennsylvania's Self-Sufficiency Standard.[2] The Self-Sufficiency Standard provides the dollar amount needed to live a basic quality of life given the household size and composition, considering cost-of-living by county within the state. The Self-Sufficiency Standard varies not only by geographic location

[2] The Self-Sufficiency Standard determines the amount of income required for working families to meet basic needs at a minimally adequate level, taking into account family composition, ages of children, and geographic differences in costs. Available at https://selfsufficiencystandard.org/pennsylvania/ (last accessed May 3, 2022).

and family size, but also by family composition. A 3-person family with an adult, an infant and a school-age child, for example, has a different self-sufficiency income, than a 3-person family with an adult, a school-age child, and a teenager does. For each county in Pennsylvania, the Self-Sufficiency Standard provides the costs of a minimum quality of life for 719 different family sizes and compositions.

Table 2 below presents the Self-Sufficiency Standard for a 3-person household with a single adult and various family compositions. I then compare that Self-Sufficiency Income to 150% of the Federal Poverty Level, the maximum income-eligibility for CAP. I examine the five counties which Columbia Gas' tariff identifies as serving all cities, boroughs and townships within the county (Allegheny, Beaver, Fayette, Greene, Washington). As can be seen, in these Columbia Gas counties, 150% of Poverty Level falls from $15,000 (2 adults + school-age in Fayette County) to $30,000 (adult + infant + pre-school in Allegheny County; adult + infant + preschool in Washington County) short of what the Self-Sufficiency Income is in the Columbia Gas service territory.

Table 2. Self-Sufficiency Income (2019) Compared to 150% Poverty Level (2019)

Three-Person Household with Selected Compositions for Selected Columbia Gas Counties

	Adult / Infant / Preschool	Adult / Preschool / School-age	2 Adults / School-age	150% FPL
Allegheny County	$62,040.03	$56,582.75	$46,300.09	$31,995
Beaver County	$56,978.30	$52,244.94	$47,417.84	$31,995
Fayette County	$51,805.76	$48,521.59	$44,163.29	$31,995
Greene County	$54,216.79	$50,898.31	$46,543.58	$31,995
Washington County	$61,397.31	$56,724.10	$50,436.47	$31,995

As can be seen in this Table, at incomes significantly higher than what is considered low income for purposes of the public utility code, households struggle to pay their bills. Households that are deemed low income have even greater inability to pay. Quite literally, each month they are faced with the dilemma of which bills to pay and which they must forgo paying.

Q. WHY ISN'T THIS PROBLEM ASSOCIATED WITH THE RATE INCREASE AS A WHOLE RATHER THAN ASSOCIATED WITH THE INCREASED CUSTOMER CHARGE IN PARTICULAR?

A. In part, the problem is associated with the rate increase as a whole. In much larger part, however, the problem is associated with the increased customer charge because there is nothing that a household can do to avoid this monthly fee. Even if low-income customers could reduce their usage, they would not be able to avoid any part of the proposed increase in the fixed monthly customer charge. The Company acknowledges that its proposed increase in the customer charge will materially reduce the percentage of revenues arising from volumetric rates.

Table 3. Percentage of Revenues from Fixed and Volumetric Rates Given Current Rates and Proposed Rates		
	OCA-03-041	OCA-03-042
At Current Rates	% Residential Revenue from Fixed Charges	% Residential Revenue from Volumetric Charges
Historic Test Year (TME 11/30/2021)	22.4%	77.6%
Future Test Year (TME 11/30/2022)	22.1%	77.9%
Fully Projected Future Test Year (TME 12/31/2023)	22.1%	77.9%
	OCA-03-041	OCA-03-042
At Proposed Rates	% Residential Revenue from Fixed Charges	% Residential Revenue from Volumetric Charges
Historic Test Year (TME 11/30/2021)	29.6%	70.4%
Future Test Year (TME 11/30/2022)	29.2%	70.8%
Fully Projected Future Test Year (TME 12/31/2023)	29.2%	70.8%

Q. DOES THE INCREASED CUSTOMER CHARGE IMPOSE ADDITIONAL HARDSHIPS ON LOW-INCOME CUSTOMERS IN PARTICULAR?

A. Yes. The proposed increase in the fixed monthly customer charge will impede the ability of low-income customers to reduce consumption as a means by which to control bills and improve affordability.[3] Increasing Columbia's unavoidable fixed monthly charge impedes low-income ability to pursue energy efficiency and/or weatherization as a mechanism to reduce bills.

Q. WHAT DO YOU CONCLUDE?

[3] As I discuss in detail above, "reducing consumption" is not merely associated with energy efficiency improvements. Available research documents that low-income households also seek to reduce bills, by reducing consumption, through actions such as closing parts of their home; reducing heating temperatures, even if to unsafe or unhealthy levels; or substituting the use of ovens or stoves to heat limited areas of their homes rather than using their heating systems to heat the entire home.

A. The low-income customers of Columbia Gas have difficulty in paying their natural gas bills at the present time. Increasing the Columbia Gas fixed monthly customer charge will increase the difficulties which low-income customers will face. Not only will the increased customer charge have the same effect on the low-income population as eliminating more than twice the dollar amount of existing federal fuel assistance that is provided, it will make it more difficult for low-income customers to control their exposure to unaffordable bills through the implementation of energy efficiency measures. For more than 85% of the Columbia Gas low-income population, CAP does not provide affordability protections.

Moreover, the simple reality is that low-income households do not have the money to spend on energy efficiency even if doing so would reduce their bills in the long term. Affordability is a month-to-month struggle. Low-income customers have zero margin in their budget and it is simply irrelevant to them that spending money on energy efficiency today now will save you more money down the road.

Even with LIURP investments, increasing the fixed customer charge will make LIURP investment less effective. The point of LIURP is to save energy and reduce bills. While energy reduction through LIURP investments would occur even with a higher customer charge, the bills for low-income customers assisted through LIURP would not decrease as much as they would with a lower customer charge. The higher fixed customer charge thereby erodes the effectiveness of LIURP. LIURP is one of the panoply of programs that is designed to assist low-income household remain connected to and afford service. By increasing the customer charge, LIURP is less effective at the task of reducing bills.

For all these reasons, consistent with OCA witness Mierzwa, I recommend that the residential customer charge should remain at its current level.

In addition, I will explain below why it is appropriate to increase the Columbia Gas budget for its Low-Income Usage Reduction Program (LIURP) as a response to the difficulties that I have documented above.

Part 2. The Proposed Revenue Normalization Adjustment and Low-Income Customers.

Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY.

A. In this section of my testimony, I examine the Company's proposal to implement a Revenue Normalization Adjustment. According to Columbia Gas witness Kempic, through the Revenue Normalization Adjustment, "the Company proposes to establish a benchmark revenue level, regardless of changes in customers' actual usage level. Excess collections above the benchmark revenue level would be refunded to customers and amounts below the benchmark level would be recouped by the Company." (Kempic, at 9). Columbia Gas witness Johnson further explains that:

> The RNA promotes revenue stabilization because it relies on distribution revenue per customer, not usage per customer. Once the Company's revenue requirement is set through a base rate case proceeding, then a benchmark revenue per residential customer is established. Through Rider RNA, the Company would refund any amount over the benchmark revenue per residential customer and would be allowed to collect any amount below the benchmark revenue per customer. Hence, the RNA "breaks the link" between residential non-gas revenue and gas consumed by non-CAP residential customers.

(Johnson, at 29 -30).

Q. HOW DOES THE PROPOSED REVENUE NORMALIZATION ADJUSTMENT AFFECT LOW-INCOME CUSTOMERS?

A. The rationale for imposing a Revenue Normalization Adjustment does not apply to low-income customers. The Company proposes as follows: "Columbia proposes to calculate Rider RNA and adjust residential customers' bills every six months based upon a comparison of benchmark distribution revenue to actual distribution ***billed revenue***. Under the Company's proposal, Rider RNA would be credited or charged to all non-CAP residential bills." (Johnson, at 34) (emphasis added).

Q. WOULD THE PROPOSED REVENUE NORMALIZATION ADJUSTMENT AFFIRMATIVELY HARM LOW-INCOME CUSTOMERS?

A. Yes. The Revenue Normalization Adjustment results in a transfer of costs from higher income customers to lower income households. This occurs because the actions that natural gas customers take to reduce natural gas consumption, thus resulting in a readjustment of rates to that consumption which remains, are actions that are disproportionately taken by higher income households. In my discussion below, I consider three different actions to reduce natural gas space heating usage: (1) insulating one's home; (2) air-sealing your home (as measured by the how "drafty" the home is); and (3) installing a programmable thermostat. The data is taken from the 2015 Residential Energy Consumption Survey (RECS) undertaken by the Energy Information Administration of the U.S. Department of Energy (EIA/DOE). 2015 is the most recent RECS data for which data has been published.

Table 4 below shows the distribution of how well insulated homes are by household income. The Table shows the percentage of households at the different income levels in the entire population. For example, 18.4% of all households have income below $20,000. Households at that income level at under-represented in those homes that are well-insulated (18.4% in total population vs. 7.5% in households with well insulated homes) and over-represented in both those households that are poorly insulated (34.2% with income below $20,000) and completely lacking insulation (50.6% with income below $20,000).

Table 4. Insulation by Income for Households Heating with Natural Gas (Mid-Atlantic) (2015)

	Well Insulated	Adequate Insulation	Poorly Insulated	Not Insulated	Total
<$20,000	7.5%	17.5%	34.2%	50.6%	18.4%
$20,000 - $39,999	24.8%	20.2%	15.9%	0.0%	20.4%
$40,000 - $59,999	15.6%	15.0%	11.7%	0.0%	14.4%
$60,000 - $79,999	11.4%	10.5%	3.0%	0.0%	9.2%
$80,000 - $99,999	12.3%	7.2%	5.7%	0.0%	8.1%
$100,000 - $119,999	4.9%	9.2%	8.7%	0.0%	8.0%
$120,000 - $139,999	7.5%	6.0%	12.8%	0.0%	7.7%
$140,000+	16.0%	14.4%	8.1%	49.4%	13.8%
Grand Total	100.0%	100.0%	100.0%	100.0%	100.0%

Table 5 below reveals the same pattern with the extent to which homes have been air-sealed. The Table presents data on how frequently a home feels drafty, disaggregated by income ranges. Low-income households are substantially over-represented in those populations of households whose homes are drafty "all the time" (18.4% of total population with income below $20,000 vs. 52.8% of the population with homes that are drafty all the time) and of households whose homes are draft "most of the time" (18.4%

of total population vs. 35.5% of the population with homes that are drafty "most of the time"). Even households with income between $20,000 and $40,000 are over-represented in those populations with homes that are not well air-sealed.

Table 5. Percentage of Gas Heating Households by How Frequently Home Feels Drafty By Income (2015) (Mid-Atlantic)

Drafty	All the time	Most of the time	Some of the time	Never	1 Total
<$20,000	52.8%	35.5%	16.8%	13.2%	18.4%
$20,000 - $39,999	32.1%	13.5%	18.7%	22.9%	20.4%
$40,000 - $59,999	15.1%	18.2%	11.7%	16.9%	14.4%
$60,000 - $79,999	0.0%	2.7%	10.1%	10.5%	9.2%
$80,000 - $99,999	0.0%	4.4%	8.2%	9.8%	8.1%
$100,000 - $119,999	0.0%	3.0%	13.4%	3.1%	8.0%
$120,000 - $139,999	0.0%	7.9%	7.3%	8.9%	7.7%
$140,000+	0.0%	14.8%	13.9%	14.9%	13.8%
Grand Total	100.0%	100.0%	100.0%	100.0%	100.0%

Finally, Table 6 documents that low-income households are over-represented in those populations lacking a programmable thermostat while being under-represented in those populations having a programmable thermostat.

Table 6. Gas Heated Households with Programmable Thermostat Installed by Income (Mid-Atlantic) (2015)			
Programmable Thermostat	No	Yes	Grand Total
<$20,000	24.2%	11.8%	18.4%
$20,000 - $39,999	27.0%	17.6%	20.4%
$40,000 - $59,999	14.7%	14.4%	14.4%
$60,000 - $79,999	10.8%	7.8%	9.2%
$80,000 - $99,999	7.8%	10.6%	8.1%
$100,000 - $119,999	8.7%	9.6%	8.0%
$120,000 - $139,999	1.0%	10.6%	7.7%
$140,000+	6.0%	17.7%	13.8%
Grand Total	100%	100%	100%

Q. HOW DOES THIS DATA RELATE TO THE COLUMBIA GAS REVENUE NORMALIZATION ADJUSTMENT PROPOSAL?

A. Columbia Gas' proposed Revenue Normalization Adjustment in essence takes revenue that has historically been billed to all customers and, as more customers take steps to reduce their consumption (and thus reduce the revenue billed to them) reallocates those dollars to the customers (and their consumption) that remain. The data above shows that the customers who are left behind by such a "normalization" process are disproportionately low-income customers. In other words, Columbia Gas proposes to take those revenues that had been billed to higher income households and to reallocate those dollars to those low-income households who do not have the financial capacity to pursue investments in energy efficiency measures (such as insulation, air sealing, and programmable thermostats). I explain in detail below with respect to Columbia Gas's proposed energy efficiency plan why low-income customers do not, and cannot, pursue investments in energy efficiency measures as a mechanism through which they can reduce their Columbia Gas bills by reducing their Columbia Gas consumption.

Q. DOESN'T COLUMBIA'S PROPOSAL TO APPLY THE REVENUE NORMALIZATION ADJUSTMENT ONLY TO NON-CAP REVENUES ADDRESS THESE ISSUES?

A. No. The issues I describe above apply to low-income customers generally, not to CAP customers in particular. Exempting CAP customers from the proposed Revenue Normalization Adjustment has an entirely separate justification (i.e., CAP revenues are not tied to CAP usage even in the absence of the proposed Revenue Normalization Adjustment). As I document in detail above, CAP customers represent a small portion of the low-income customer base of Columbia Gas. Exempting CAP billings and usage from the Adjustment does not address the shortcomings I have identified.

Q. IS THERE ANY OTHER REASON WHY THE REVENUE NORMALIZATION ADJUSTMENT OPERATION BREAKS DOWN AS APPLIED TO LOW-INCOME CUSTOMERS?

A. Yes. The Revenue Normalization Adjustment proposes by Columbia Gas examines only one aspect of the ratemaking process, the determination of revenues. Rates, however, are not set simply through an examination of the level of revenues, but rather through an examination of the relationship between revenues and expenses. With low-income customers in particular, reducing usage would not only reduce billed revenue, but would reduce the expenses associated with billed revenue. The Table below shows the difference between payment patterns for residential customers and for low-income customers. Both the percentage of accounts in arrears and the percentage of billings in arrears are more than two times higher for Columbia Gas' low-income customers than for its residential customers as a whole. In 2018 and 2019, the average arrears (for accounts having arrears) was more than $100 higher, while in 2020, low-income arrearages were nearly $200 higher.

By reducing low-income usage, Columbia Gas will not only reduce its revenue, but it will reduce its expenses as well. Usage reduction is a particularly effective mechanism to use to control expenses because arrears do not have to be reduced to $0 in order to achieve expense reductions. For example, with working capital, Columbia Gas would experience a reduction in expenses by decreasing the level of arrears; by decreasing the percentage of either accounts or billings in arrears; or by accelerating payments. A $200 arrearage imposes fewer working capital costs than a $300 arrearage all other things equal. Moreover, a 90-day arrears will impose fewer working capital costs than a 150-day arrears all other things equal. It doesn't matter whether the usage reduction can be attributed to energy efficiency investments, to weather, or to some other cause. The results are the same.

Table 7. Residential and Low-Income Nonpayment (2018 – 2020)
BCS 2020 Annual Report on Universal Service Program and Collections Performance

	2018		2019		2020	
	Residential	Low-Income	Residential	Low-Income	Residential	Low-Income
Percent accounts in arrears	6.9%	15.9%	6.9%	16.3%	7.6%	17.8%
Percent revenue in arrears	3.1%	8.3%	3.5%	9.1%	4.3%	12.6%
Average arrears	$507	$602	$544	$651	$666	$845

By implementing a Revenue Normalization Adjustment to take into consideration the reduction in revenue, without also considering the corresponding reduction in expenses, Columbia Gas is not making an accurate adjustment to maintain a stability in earnings. Since the greatest potential for expense reductions lies with low-income usage reduction, low-income customers will be most adversely affected by this failure.

Q. IS THERE ANY FINAL REASON WHY THE RATIONALE FOR A REVENUE NORMALIZATION ADJUSTMENT DOES NOT APPLY TO LOW-INCOME CUSTOMERS?

A. Yes. Columbia Gas proposes to base its Revenue Normalization Adjustment on the revenue that has been previously billed to its customers. As I noted above, Columbia Gas witness Johnson stated quite explicitly that the Revenue Normalization Adjustment involves making "a comparison of benchmark distribution revenue to actual distribution *billed revenue*." (Johnson, at 34) (emphasis added). Making that comparison for low-income customers does not reveal the amount of revenue that is being "lost" to Columbia Gas from its low-income customers.

The data set forth in Schedule RDC-1 (pages 1 and 2) shows the difference in collections between residential customers as a whole (page 1) and low-income residential customers in particular (page 2). The data shows the dollars of billings for the 24 month May 2020 through April 2022, along with the dollars of payments during that same 24 month period. The Schedule shows a month-by-month of the ratio of payments to bills, along with a cumulative ratio of payments to bills. The Schedule shows that for residential customers as a whole, Columbia Gas received cumulative payments equal to exactly

100% of its cumulative billings for the 24-month period. However, for low-income customers, Columbia Gas received cumulative payments equal to only 65% of its cumulative billings.

If Columbia Gas were to apply the Revenue Normalization Adjustment to low-income billings, as Mr. Johnson acknowledges they would, the Company would be adjusting for the loss of revenues that it was not receiving in the first instance. It would, in other words, be adjusting for a "loss of revenue" that did not occur.

Q. WHAT DO YOU RECOMMEND?

A. I recommend that the recommendation of OCA witness Mierzwa be adopted with respect to Columbia's proposed Revenue Normalization Adjustment and that the proposed Revenue Normalization Adjustment should be denied.

Part 3. Measuring Columbia Gas's Universal Service Outcomes.

Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY.

A. In this section of my testimony, I examine the extent to which Columbia Gas generates appropriate universal service outcomes. Rather than focusing on what Columbia Gas is doing (i.e., its activities), however, in this section of my testimony, I will focus on an assessment of the Columbia Gas outcomes (i.e., its results).

Q. PLEASE EXPLAIN THE DISTINCTION YOU ARE MAKING WHEN YOU IDENTIFY "ACTIVITIES" AND "OUTCOMES."

A. Measuring "outcomes" is to be distinguished from measuring "activities" and measuring "outputs." An "activity" is defined as the work performed that directly produces products or services. The "output" of an activity is the direct result of program activities. The "outcome" of a program is the accomplishment of program objectives attributable to program outputs.

Performance measurement has been growing now for nearly 30 years in both public and private programs. Perhaps the best-known application is the federal Government Performance and Results Act of 1993 ("GPRA"). GPRA was designed to address the same conceptual issues that a Pennsylvania utility must address for its low-income energy efficiency programs (or energy efficiency programs of any sort for that matter): "to grapple with how to best improve effectiveness and service quality while limiting costs." It shifts the focus from program activities to program results.

According to GPRA, "The key concepts of this performance-based management are the need to define clear agency missions, set results-oriented goals, measure progress toward achievement of those goals, and use performance information to help make decisions and strengthen accountability." Utilities face the same sort of problems in measuring efficiency as do federal agencies. As the U.S. General Accounting Office has observed, "Many agencies have a difficult time moving from measuring program activities to establishing results-oriented goals and performance measures."[4]

[4] James Hinchman (Acting Comptroller General). (June 24, 1997). Managing for Results: The Statutory Framework for Improving Federal Management and Effectiveness, at 1, Testimony before U.S. Senate Committee on Appropriations and Committee on Governmental Affairs (GAO/T-GGD/AIMD-97-144).

Within this construct, in my discussion below, I will not focus on what Columbia Gas should or should not be *doing*. I will instead focus on what Columbia Gas should or should not be *accomplishing*.

Q. WHAT IS THE FIRST STEP IN MEASURING OUTCOMES?

A. The first step in measuring outcomes is to establish measurable objectives or goals (i.e., outcomes) that Columbia Gas should seek to achieve. Subsequent to establishing these measurable outcomes, Columbia Gas can engage in an ongoing process to determine whether those objectives have, in fact, been achieved and, if not, what needs to be modified in order to improve performance.

Q. WHAT MEASURABLE PERFORMANCE GOALS DO YOU RECOMMEND COLUMBIA GAS SHOULD ESTABLISH?

A. I recommend three measurable performance goals that Columbia Gas should seek to accomplish:

- Outcome Objective #1: Columbia Gas should achieve a Confirmed Low-Income identification rate, as a percentage of estimated low-income customers, for the utilities as a whole, no less than the Confirmed Low-Income identification rate of the top quartile of Pennsylvania natural gas utilities as a whole (excluding Columbia Gas).

- Outcome Objective #2: Columbia Gas should achieve a CAP participation rate, as a percentage of Confirmed Low-Income customers, no less than the CAP participation rate of the top quartile of Pennsylvania natural gas utilities as a whole (excluding Columbia Gas).

- Outcome Objective #3: Columbia Gas should achieve a CAP participation rate, as a percentage of its Confirmed Low-Income customers, in the lowest poverty level range that is no less than the proportion of households in that poverty level range for the Columbia Gas service territory as a whole.

Through the first Outcome Objective, Columbia Gas will seek to ensure that it is adequately identifying its low-income customers. Through the second and third Outcome objectives, Columbia Gas will seek to ensure that, having identified its low-income population, it is, then enrolling its known low-income customers into its primary low-income assistance program.

In subsequently assessing actual performance relative to the desired performance (measured in terms of the identified Outcomes), neither the Commission nor other stakeholders will focus on what Columbia Gas is or is not doing in the abstract. A review of what Columbia Gas is (or is not) doing will only occur within the context of whether those activities are generating the identified outcomes. Irrespective of what Columbia Gas is (or is not) doing, if the Company is not achieving its identified performance objectives, it would need to decide what it needs to do differently in order to improve its performance.

Q. DO YOU RECOMMEND A SYSTEM OF PENALTIES OR REWARDS BASED ON PERFORMANCE RELATIVE TO THE IDENTIFIED OBJECTIVES IN THIS PROCEEDING?

A. No. While I would reserve the right to propose a system of penalties (for poor performance as measured by a continuing failure to meet the stated performance objectives) or rewards (for superior performance as measured by exceeding the performance objectives) in a future rate case, my intention in this proceeding is to change the conversation about the identification of low-income customers, and about CAP enrollment, from a discussion of what Columbia Gas should be doing, to a discussion of what Columbia Gas should be accomplishing.

Q. HOW DOES COLUMBIA GAS PERFORM RELATIVE TO PENNSYLVANIA NATURAL GAS UTILITIES IN IDENTIFYING THEIR CONFIRMED LOW-INCOME CUSTOMERS?

A. Columbia Gas performs in the middle of the range of Pennsylvania utilities in identifying its estimated low-income customers as Confirmed Low-Income customers. The data available by which to measure this performance metric is readily available in the annual BCS report on Universal Service Programs and Collections Performance. As documented in Table 8 below, in the aggregate, Pennsylvania's natural gas utilities identify 63.0% of their estimated low-income customer base as Confirmed Low-Income customers. In contrast, Columbia Gas identifies 69.5% of its estimated low-income customer base as Confirmed Low-Income customers. Columbia falls below Peoples, Peoples Equitable, and PGW in the percentage of estimated low-income customers it identifies as Confirmed Low-Income. For Columbia Gas to perform at least as well as Peoples (80.2%) and PGW (74.3%), it would need to identify between 72,300 and 78,000 of its estimated low-income customers as Confirmed Low-Income customers. Application of Performance Objective #1, in other words, would indicate that Columbia Gas could improve its performance relative to identifying its Confirmed Low-Income customers.

Table 8. Identification of Estimated Low-Income (LI) Customers as Confirmed Low-Income (L) Pennsylvania Natural Gas Utilities (2019)			
	Estimated LI	Confirmed LI	% Confirmed LI of Estimated LI
Columbia	97,268	67,582	69.5%
NFG	60,947	32,282	53.0%
PECO Gas	74,914	24,977	33.3%
Peoples	84,437	67,718	80.2%
Peoples Equitable	58,791	41,585	70.7%
PGW	197,855	147,014	74.3%
UGI South	86,314	39,108	45.3%
UGI North	46,297	24,934	53.9%

Q. HOW DOES COLUMBIA GAS PERFORM RELATIVE TO PENNSYLVANIA NATURAL GAS UTILITIES IN ENROLLING THEIR CONFIRMED LOW-INCOME CUSTOMERS INTO CAP?

A. Columbia Gas performs at roughly the natural gas industry average in enrolling its Confirmed Low-Income customers as CAP participants. As with the discussion above regarding the identification of Confirmed Low-Income customers, the data available by which to measure this performance metric is readily available in the annual BCS report on Universal Service Programs and Collections Performance.[5] As documented in Table 9 below, Pennsylvania natural gas utilities enroll 32.9% of their Confirmed Low-Income customers into CAP. In contrast, Columbia Gas enrolls 34.8% of its Confirmed Low-Income customers into CAP. For Columbia Gas to perform at least as well as the top performer (PECO Gas) (77.8%), it would need to enroll an additional 29,014 of its

[5] Available at https://www.puc.pa.gov/filing-resources/reports/universal-service-reports/ (last accessed April 6, 2022).

Confirmed Low-Income customers as CAP participants. Application of Performance Objective #2, in other words, would indicate that Columbia Gas has room to improve its performance relative to CAP enrollment of Confirmed Low-Income customers.

Table 9. Identification of Estimated Low-Income (LI) Customers as Confirmed Low-Income (L)
Pennsylvania Natural Gas Utilities (2019)

	Confirmed LI	CAP Participants	% CAP of Confirmed LI
Columbia	67,582	23,551	34.8%
NFG	32,282	7,294	22.6%
PECO Gas	24,977	19,427	77.8%
Peoples	67,718	17,034	25.2%
Peoples Equitable	41,585	12,928	31.1%
PGW	147,014	53,722	36.5%
UGI South	39,108	8,422	21.5%
UGI North	24,934	5,369	21.5%

Q. HOW DOES COLUMBIA GAS PERFORM RELATIVE TO THE THIRD PROPOSED OUTCOME PERFORMANCE OBJECTIVE YOU HAVE IDENTIFIED?

A. Columbia Gas does not currently enroll customers with income below 50% of Poverty at a rate that reflects the proportion of households with income at that Poverty range in the Company's service territory as a whole. According to the most recent BCS annual report on Universal Service Programs and Collections Performance,[6] in 2019, 23.2% of the Columbia Gas CAP participants had income at 0% to 50% of Poverty. In contrast, Census data for the 5-digit zip codes comprising the Columbia Gas service territory

[6] Available at https://www.puc.pa.gov/filing-resources/reports/universal-service-reports/ (last accessed April 6, 2022).

shows that 26.7% of the low-income population (defining "low-income" as below 150% of Poverty) in the Columbia Gas service territory in fact had income below 50% of Poverty. Of the customers Columbia Gas is enrolling in CAP, in other words, the Company appears to be enrolling the lowest income customers at a rate that is somewhat less than their presence in the low-income population as a whole.

Table 10. Percent of CAP Enrollees with Income by Range of Federal Poverty Level
(2020 BCS annual Report on Universal Service Programs and Collections Performance)

	2018	2019	2020
Below 50% FPL	22.4%	22.5%	23.2%
51 – 100% FPL	44.5%	44.7%	44.6%
101 – 150% FPL	33.1%	32.8%	32.2%
Total	100%	100%	100%

Q. WHAT DO YOU CONCLUDE?

A. Using the three performance metrics I identify above, it is evident that Columbia Gas has room for improvement to the extent in which it is confirming the low-income status of its natural gas customers; to the extent in which it is enrolling the customers for whom it has confirmed their low-income status into CAP; and in the proportion of the lowest income customers which have been enrolled in CAP. I conclude that the use of the performance metrics I recommend can be used for the purposes which outcome objectives are intended to serve: to set results-oriented goals; measure progress toward achievement of those goals; and to use performance information to help make decisions and strengthen accountability.

Q. WHAT DO YOU RECOMMEND?

A. I recommend that rather than having the Commission engage in continuing reviews of the specific activities that Columbia Gas pursues to identify its low-income customers and to enroll those customers in CAP, the Commission instead require Columbia Gas to measure its performance in these respects on an ongoing basis. The Commission should determine that it will use these performance metrics to review Columbia Gas performance in future rate cases.

Q. HOW DOES THE DIRECT TESTIMONY OF COLUMBIA GAS WITNESS DAVIS RELATE TO YOUR RECOMMENDED OUTCOME OBJECTIVES DISCUSSED ABOVE?

A. The Direct Testimony of Columbia Gas witness Davis does not relate to the recommendations I make above. First, the testimony of Ms. Davis does not address the creation of outcome objectives. Second, the testimony of Ms. Davis largely relates to funding for the Company's hardship grants as well as LIURP funding.

Finally, with respect to the testimony of Ms. Davis regarding the outreach activities of Columbia Gas, her testimony and my testimony above are largely complementary. The Outcome Objectives I present above will provide an effective, commonly-used tool, by which to measure whether the increased outreach activities discussed by Ms. Davis are generating the outcomes that stakeholders (including the OCA) might expect to be generated.

Part 4. Columbia's Proposed Energy Efficiency Rider.

Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY.

A. In this section of my testimony, I address the Energy Efficiency Rider proposed by Columbia Gas. Columbia Gas witness Danhires explains that "Columbia is proposing two residential energy efficiency programs to help residential customers reduce their energy consumption, improve efficiency, and conserve resources. The Company is proposing this tariff rider to recover the costs of the EE program from the residential customer classes, which is the only class of customer eligible to participate in the proposed EE program. The EE rider rate will not be charged to residential customers participating in the Company's low-income Customer Assistance Program." (Danhires, at 8 – 9). I recommend that all Confirmed Low-Income customers be exempted from the Energy Efficiency Rider.

While, in some generic sense, low-income residential customers are "eligible" to participate in the proposed Columbia Gas residential energy efficiency program, there are no low-income programs included in the program. Columbia Gas witness Love states that: "Low-income customers are allowed to participate in any of the programs, but the Plan does not specifically include participation assumptions for this market." (Love, at 4). While low-income customers may be "allowed to participate" in the Columbia Gas residential energy efficiency programs, for all the reasons I discuss in my testimony below relating to the Company's proposed program, the most reasonable expectation is that, because of multiple market barriers (such as high mobility, primarily renter status, high hurdle rates, and lack of investment capital), they will not do so.

Since there are no low-income programs in the proposed Energy Efficiency Plan, low-income customers should not be required to pay for those programs that are not designed to serve them. The fact that CAP customers are exempt from the charge does not address this issue. As I explain in detail above, CAP customers are but one small part of the Columbia Gas population of Confirmed Low-Income customers. The reason to exempt CAP customers is not because CAP customers will not use the residential programs, but rather because including a Rider is inconsistent with the way in which CAP payments are structured.

Part 5. Columbia Gas' Proposed Energy Efficiency Plan.

Q. PLEASE DESCRIBE THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY.

A. In this section of my testimony, I examine the residential energy efficiency program that Columbia Gas seeks approval of in this proceeding. I explain how and why the residential program, which includes no specific low-income program component, will not serve low-income customers. As I note above, Columbia Gas witness Love states that: "Low-income customers are allowed to participate in any of the programs, *but the Plan does not specifically include participation assumptions for this market*." (Love, at 4) (emphasis added).

Q. PLEASE EXPLAIN THE ELEMENTS OF THE PROPOSED ENERGY EFFICIENCY PLAN THAT ARE RELEVANT TO LOW-INCOME CUSTOMERS.

A. Certain elements of the proposed energy efficiency plan explained by Mr. Love are relevant to low-income customers in the extent to which they create practices that would result in the exclusion of low-income customers from participation. For example, Mr. Love testifies that:

- "The RP Program aims to reduce lost opportunities for efficiency improvements during the turnover of natural gas space heating and water heating equipment." (Love, at 10);
- "The RP program will specifically provide incentives for furnaces, boilers, combination space and water heating boilers ("combi boilers"), tankless water heaters, and WIFI-enabled thermostats." (Love, at 10);
- "The main way in which customers are expected to hear about the RP program is through trade allies, such as heating ventilation and air conditioning ("HCAC") installers and plumbers." (Love, at 11);
- "In general, the program aims to incentivize only the highest levels of efficient equipment on the market." (Love, at Exh. TML-2, page 15); and
- "Incentives were designed to be in line with other offerings in the region and/or cover approximately two-thirds of the incremental cost of the measure." (Love, at Exh. TML-2, page 17).

Each of these attributes of the Company's proposed plan will result in a *de facto* exclusion of low-income customers as participants.

Q. PLEASE EXPLAIN WHY IT IS REASONABLE TO EXPECT A DE FACTO EXCLUSION OF LOW-INCOME PARTICIPATION IN THE PROPOSED COLUMBIA GAS ENERGY EFFICIENCY PROGRAM.

A. Due to market barriers that present particular investment impediments, low-income households are prevented from investing in energy efficiency even if the Columbia Gas incentives would be effective with residential customers generally. These market barriers impede the availability of energy efficiency to low-income customers, even if such efficiency would be an effective, and cost-effective mechanism to use in controlling home energy costs. These market barriers prevent low-income customers from realizing the bill reductions generated by Columbia's proposed energy efficiency program.

When I refer to "market barriers" in my testimony above, I define that term to include market conditions which stand as an obstacle to the implementation of energy efficiency investments. A commonly recognized "market barrier," for example, is inadequate knowledge. Consumers may not make efficiency investments because they do not understand the economics of the investment return. In particular, in my testimony below, I will further discuss "low-income market barriers." These are market barriers that either uniquely, or disproportionately, impede low-income households from investing in cost-effective energy efficiency. One such low-income market barrier that I will discuss below is the lack of investment capital for low-income customers. As I will discuss, it makes no difference if an energy efficiency investment is "cost-effective" if the household has insufficient money to make the investment in the first instance.

Q. WHY IS IT IMPORTANT TO UNDERSTAND WHAT CAUSES EXCLUSION OF LOW-INCOME CUSTOMERS FROM ENERGY EFFICIENCY PROGRAMS?

A. It is important to understand low-income market barriers because, in the absence of such understanding, a utility might design a program using the principle, as stated by Mr.

Love, that "low-income customers are eligible to participate" in the same fashion as any other residential customer.

In my testimony, I consider the following types of impediments that prevent low-income investment in energy efficiency: (1) the housing-related characteristics of Columbia Gas' low-income customers; and (2) the financial characteristics of housing in the Columbia Gas service territory. Through a review of these various housing characteristics in the Company's service territory, it is possible to gain insight into why, even though Mr. Love says that low-income customers are "allowed" to participate, just like any other residential customer, that participation will not occur. This discussion provides a basis for why I conclude that there is a need for low-income energy efficiency investments beyond those "incentives" which Columbia Gas proposes for residential customers.

A. The Housing Characteristics of Columbia's Low-Income Customers.

Q. WHAT HOUSING CHARACTERISTICS OF COLUMBIA'S LOW-INCOME CUSTOMERS ARE RELEVANT TO A CONSIDERATION OF THE COMPANY'S PROPOSED EFFICIENCY PROGRAM?

A. The housing-related characteristics of low-income households in the Columbia Gas service territory tend to make energy efficiency investments unavailable to low-income households without outside assistance. Thus, a review of those characteristics is relevant to consider for Columbia Gas' proposal. Low-income households are systematically excluded from being able to access energy efficiency as a mechanism to control home energy bills because of market barriers that are unique to low-income households. Two illustrative "market barriers" related to the housing-related characteristics of low-income households in the Columbia Gas service territory are (1) the tenure of households; and (2) the mobility of the households.

Q. PLEASE EXPLAIN THE IMPACT OF TENURE ON THE ACCESSIBILITY OF ENERGY EFFICIENCY FOR THE POOR.

A. Low-income households in the Columbia Gas service territory tend to live in rental dwellings. The Columbia Gas service territory (defined by zip code) had 540,000 households who were homeowners in 2019, of which roughly 18,200 (3.4%) had income at or below 100% of the Federal Poverty Level. Likewise, the Columbia Gas service territory had 118,000 renters in 2019, of which 26,800 (22.7%) had income at or below 100% of the Federal Poverty Level. Looked at conversely, of the total 45,000 families with income below the Federal Poverty Level in 2019, 26,800 (60%) were renters.[7]

This finding has two significant impacts on whether energy efficiency is accessible to low-income households. First, tenants have little or no incentive to improve their landlord's property as tenants receive little, if any, of the increased value of the property. Second, tenants do not generally have the authority to make decisions over improving major housing systems; whether it is a heating/cooling system or a hot water system.

The problems caused by renter status, however, go well beyond this economic problem. There is a legal problem as well. When a person is a tenant, the person does not have the "dominion interest" over the major systems in a home that would generate substantial energy efficiency investment and bill reductions. The "dominion interest" refers to the

[7] Table B17019, American Community Survey, 5-year data, 2019.

authority to make decisions. Even if the tenant had the desire to make energy efficiency investments, and the financial wherewithal to fund such investments, as a non-owner of the home, the tenant typically does not have the authorization to make such changes to the major systems and appliances.

There is no question that, to the extent that renter status presents a market barrier to the installation of energy efficiency measures, these market barriers disproportionately impede the installation of energy efficiency measures for low-income households in the Columbia Gas service territory. Low-income households would thus be far more likely to be excluded from participating in the Columbia Gas program as outlined by Mr. Love.

Q. PLEASE EXPLAIN THE IMPACT OF MOBILITY ON THE ACCESSIBILITY OF ENERGY EFFICIENCY FOR THE POOR.

A. In addition to tenure, a second housing-related attribute of low-income tenants that impedes their ability to invest in energy efficiency as a mechanism to reduce home energy consumption is their tendency to be more mobile. Census data clearly demonstrates that, compared to the proportion of the total population that changes residences each year, nearly twice as many low-income households move.[8] As a result, even in instances where a tenant may have the authority and financial ability to invest in an energy efficiency measure, no investment is made as the payback period required to justify such an investment would not match the household's tenure. A low-income

[8] ACS Table B07413, American Community Survey, 2019, 1-year data., available at https://data.census.gov/cedsci/table?q=B07413%3A%20GEOGRAPHICAL%20MOBILITY%20IN%20THE%20PAST%20YEAR%20BY%20TENURE%20FOR%20RESIDENCE%201%20YEAR%20AGO%20IN%20THE%20UNITED%20STATES&g=0400000US42%240500000&d=ACS%201-Year%20Estimates%20Detailed%20Tables&tid=ACSDT1Y2019.B07413 (last accessed June 3, 2022).

household, in other words, will not invest in a measure with a two-year payback if that household intends to move to a different dwelling in 12 months. A low-income household will not invest in a measure if that household does not anticipate remaining in the home for the duration of the payback period.

C. Financial Characteristics of Low-Income Housing.

Q. WHY IS AN ASSESSMENT OF THE FINANCIAL CHARACTERISTICS OF HOUSING IN THE COLUMBIA GAS SERVICE TERRITORY NECESSARY TO ASSESS THE NEED FOR LOW-INCOME EFFICIENCY INVESTMENTS?

A. As home energy prices increase as a percentage of income, low-income households have fewer available discretionary resources to invest in measures that could reduce their household energy expenditures. The discussion below examines the stress on household income by focusing on total shelter costs. Rising home energy prices are a major factor in driving overall shelter prices upwards in the Columbia Gas service territory and creates a barrier to the implementation of energy efficiency measures as a strategy to control those costs. This impact is a particular problem for the lowest income households.

One impact of the high home energy bills facing low-income households in the Columbia Gas service territory is the stress that such bills place on household budgets. One common principle in reviewing basic household budgets is that total shelter costs should represent no more than 30% of a household's income.[9]

The U.S. Census Bureau reports shelter burdens, disaggregated by rental burdens and homeowner burdens. In the Columbia Gas service territory, 60% of all *renters* with income less than $20,000 a year have rent burdens exceeding 30% of income. Indeed, 57% of renters with income less than $20,000 have rent burdens exceeding 40% of income.[10] Low-income *homeowners* served by Columbia Gas are face similar burdens.[11]

Q. HOW DO THESE TOTAL SHELTER BURDENS RELATE TO THE PROPOSED COLUMBIA GAS ENERGY EFFICIENCY PROGRAM?

A. High shelter burdens relate to the proposed Columbia Gas energy efficiency plan in two ways. First, the high shelter costs, themselves, present an impediment to low-income households being able to participate. If the household struggles to meet its day-to-day bills, it does not have the discretionary income to invest in energy savings measures; even if those measures are supported by an "incentive" such as those offered through the proposed Columbia Gas program. In addition, as home energy takes up an increasing proportion of total shelter costs, there is less money left to pay for the housing component of total shelter costs. As a result, households in the Columbia Gas service territory are either forced into increasingly lower-priced (and often lower quality) housing, or those

[9] "Shelter costs" include rent or mortgage payments plus all utilities (except telephones). Internet service is not considered to be a "utility." See generally, Schwartz and Wilson (2008). "Who Can Afford to Live in a Home: A Look at Data from the 2006 American Community Survey," U.S. Census Bureau: Washington D.C.

[10] Table B25074, American Community Survey, 5-year data, 2019.

[11] Table B25095, American Community Survey, 5-year data, 2019.

households face ongoing bill payment problems attributable to the mismatch between household resources and household expenses. In either case, the housing cost characteristics that cause the need to participate in Columbia's energy efficiency program to reduce bills are also the characteristics that makes it less likely that such participation will occur. Not only is the program not designed to gain low-income participation, but the program's primary outreach through contractors is designed to exclude low-income customers, who will not be in the market in the first instance to come into contact with such contractors.

C. The Environmental Shortcomings of Columbia's Energy Efficiency Plan.

Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY.

A. In this section of my testimony, I examine one of the benefits that Columbia Gas witness Love identifies as flowing from the Company's energy efficiency plan. I explain why these benefits are denied to low-income customers and the particular harms that will occur to low-income households because of this exclusion. In particular, Mr. Love testifies that "not only does the Plan provide significant energy savings and economic benefits for customers, but it also helps customers increase the comfort of their home and reduce the emission of greenhouse gases." (Love, at 3).

Q. WHAT ARE THE ENVIRONMENTAL IMPACTS ON LOW-INCOME CUSTOMERS?

A. By designing the energy efficiency plan to result in the de facto exclusion of low-income customers, Columbia Gas is excluding these low-income customers from receiving these benefits as well.

The adverse impacts of the climate change which Columbia Gas claims to help mitigate continues to have disproportionate impacts on low-income customers when low-income customers are excluded from the energy efficiency plan. By the Year 2100, extreme heat waves that historically occurred once every 20 years are predicted to occur every other year.[12]

Q. DO YOU DISTINGUISH BETWEEN OUTDOOR AIR QUALITY AND INDOOR AIR QUALITY?

A. Yes. It is not merely "outdoor" climate-induced health effects that represent the harms to be avoided through usage reduction programs. Because Americans spend 67% of their time in their homes, indoor air quality also affects health. Indoor air pollutants have been ranked as among the top five environmental risks to public health. Poor indoor air quality in the home has been linked to cancer, to asthma, and to carbon monoxide poisoning.[13] And, while outdoor air quality is subject to regulation under the federal Clean Air Act, indoor air quality is not.

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[12] Kaswan (2012). "Domestic Climate Change Adaptation and Equity," 42 Environmental L.Rep. News & Analysis 11125.

[13] The purpose of this discussion is not to comprehensively document the relationship between housing quality and adverse health outcomes. Those interested in the topic should explore the literature of "ecosocial epidemiology." *See generally* Shafiei, "Reducing Health Disparity through Healthy Housing," *in* HEALTHY AND SAFE HOMES: RESEARCH, PRACTICE AND POLICY Chapter 4, pp.73-90 (Rebecca Morley et al. eds., 2011). *See also* Krieger,

Q. IS THERE ANY SYNERGISTIC ADVERSE IMPACTS ON LOW-INCOME HOUSEHOLDS BETWEEN OUTDOOR AND INDOOR AIR QUALITY?

A. Yes. The confluence of the harms associated with outdoor air quality and those associated with indoor air quality cannot be ignored. One consistent piece of advice given to people on how to avoid the adverse impacts of poor outdoor air quality is to remain indoors.[14] This advice is based on the assumption that indoor air quality is superior to outdoor air quality. But this means that people whose indoor air quality is compromised may be more susceptible to adverse health effects from indoor air than the population at large. Low-income people are much more likely to be exposed to, and therefore suffer the effects of poor indoor air quality than the general population. So the advice to stay indoors might be good for the majority of people but bad for a minority. This problem goes to the heart of why greener housing is a matter of environmental justice.[15] When indoor air quality is just as dangerous as outdoor air quality, or when indoor air temperatures are just as deadly as extreme heat outdoors, there is, quite simply, no place to hide.

Q. WHAT DO YOU CONCLUDE?

A. The proposal of Columbia Gas to adopt a residential energy efficiency program which, by design, excludes low-income customers has the impact of continuing these environmental

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"Theories for Social Epidemiology in the 21st Century: An Ecosocial Perspective," 30 Int'l J. Epidemiology 668, 671-673 (2001). For a discussion of the positive health impacts flowing from an improvement in housing quality, see generally, Thompson et al., "The Health Impacts of Housing Improvement: A Systematic Review of Intervention Studies from 1887 to 2007," 99 Am. J. Public Health S681 S682-S689, S690-S691(2009).

[14] See e.g., Laumbach, Meng and Kipen "What can individuals do to reduce personal health risks from air pollution?" J.Thorac.Dis. 2015 Jan; 7(1): 96–107.

[15] Kevin Foy, *Home is where the Health Is: The Convergence of Environmental Justice, Affordable Housing, and Green Building*, 30 Pace Envl L. Rev. 1, 44 (Fall 2012).]

justice disparities. As such, I recommend a specific addition to the Columbia Gas residential energy efficiency program which addresses low-income needs. As I explain immediately below, however, rather than seeking to create a new low-income program structure, it would be more effective and efficient to add money to the Columbia Gas LIURP program.

D. How to Remedy the Shortcomings of the Columbia Energy Efficiency Plan.

Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY.

A. In this section of my testimony, I will explain how Columbia Gas can remedy the shortcomings in the proposed energy efficiency plan discussed above. I will further explain how providing this remedy will also address other problems I have identified with the Company's rate filing in this proceeding.

It is not simply the Columbia Gas energy efficiency plan which should be considered here. Various aspects of the relief sought by Columbia Gas in this rate case proceeding synergistically operate to the detriment of low-income customers. Even aside from the size of the rate hike, itself, the proposed increase in the residential customer charge makes a greater proportion of a low-income customer's monthly bill more difficult to reduce by having a higher proportion of the bill be an irreducible fixed charge. Through the Revenue Normalization Adjustment, Columbia Gas transfers to low-income ratepayers the cost of higher income customers responding to price and climate-change induced increases in natural gas prices. In the meantime, Columbia Gas confirms the low-income status of only a small portion of the estimated number of low-income customers on its system, and enrolls and even smaller percentage of the Confirmed Low-Income customers it has identified in its CAP. As I discuss in detail above, a full 87% of Columbia Gas' low-income customers are not protected from the harms of the various Company proposals in this rate proceeding through participation in CAP.

As a result of these failures, not only is a higher percentage of low-income customers in arrears to the Company, but also those low-income customers who have arrears are deeper in arrears (with an average arrears substantially higher than residential customers). At the same time, Columbia Gas proposes to impose a new charge (the Energy Efficiency Rider) on all low-income customers who do not participate in CAP.

The full array of Columbia Gas choices it advances in this proceeding have synergistically harmful impacts on low-income customers.

Q. WHAT DO YOU RECOMMEND?

A. The primary way to redress the hardships which the Columbia Gas rate filing imposes on the Company's low-income customers is to undertake expanded efforts to make the housing of its low-income customers as energy efficient as possible. Columbia Gas, of course, operates the Low-Income Usage Reduction Program (LIURP) to serve low-income customers. Because of the expanded hardships which Columbia Gas will impose on its low-income customers because of the relief that it seeks in this proceeding, Columbia Gas should undertake efforts to protect an expanded number of low-income households through its LIURP initiative.

In its most recent Universal Service and Energy Conservation Plan (USECP) approved by the Commission, Columbia Gas said that: "Columbia anticipates that 1/2 of the 15,704 renters in addition to the 10,795 property owners, totaling 18,647 could receive weatherization services." (Columbia Gas, Universal Service and Energy Conservation Plan, 2019 – 2021, Docket No. M-2018-2645401, November 25, 2019, at 34). In its 2021 universal service report to BCS, Columbia projected that it would serve 792 low-income homes through LIURP. (OCA-III-6, Attachment C, page 35 of 50). At that rate, it would take Columbia nearly 25 years to reach all low-income homes *one time* (not needing to retreat homes at any point in that 25 year period).

To reach 50% of the 18,647 low-income customers identified by Columbia Gas (n=9,324) over a ten year period would require Columbia Gas to serve 932 low-income households per year (9,324 / 10 = 932) during that period. I recommend that for all the reasons outlined in this testimony, Columbia Gas be required to set that production goal. At an average 2021 LIURP cost of $6,216 as reported by Columbia in its 2021 universal service report to BCS (OCA-III-06, Attachment C, at p.36), the total cost in 2021 dollars would be $5,795,798 (932 x $6,216). Any production that is funded through federal infrastructure funds should be in addition to this LIURP production.

Q. WOULD THE TOTAL INCREMENTAL COST OF YOUR PROPOSAL BE THE AVERAGE PER JOB COSTS TIMES THE NUMBER OF JOBS EACH YEAR?

A. No. Investing LIURP dollars would generate universal service costs reductions as well. Bill reductions resulting from LIURP investments will, on a dollar-for-dollar basis, reduce the level of future CAP credits to the extent that the customer is also enrolled in

CAP. Moreover, to the extent that a low-income customer receives LIURP services prior to enrolling in CAP, it is more likely than not that the customer will experience reduced arrearages.[16] As a result, there would be a reduction in arrearages subject to forgiveness through the Columbia Gas CAP program. Given that CAP Credits and Arrearage Forgiveness comprise more than 95% of the total costs of the Columbia Gas CAP program, these reductions in universal service costs that would offset any LIURP investment would be substantial.

Q. WHY ISN'T THIS RECOMMENDATION MORE APPROPRIATELY PRESENTED IN A PROCEEDING TO REVIEW COLUMBIA'S UNIVERSAL SERVICE AND ENERGY CONSERVATION PLAN (USECP)?

A. The base spending for the Columbia Gas LIURP program is considered in the proceeding to review the Columbia Gas USECP. However, my recommendation above could not have been advanced in the Columbia Gas USECP given that the rate case proposals advanced in this proceeding had not yet been filed. My recommendation above is designed to respond to, and to reflect, the necessary LIURP spending to respond to the proposals advanced by Columbia Gas in *this* proceeding. They could not appropriately be raised in a past or future USECP review.

Part 6. Proposed Increase to ROE Based on Management Excellence.

Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY.

[16] Shingler (2008). Long Term Study of Pennsylvania's Low-Income Usage Reduction Program: Results of Analyses and Discussion, available at https://aese.psu.edu/research/centers/csis/publications (last accessed April 8, 2022).

A. Columbia Gas requests that it be granted an additional equity return of 0.25% to reflect what it asserts is management effectiveness. (Kempic, at 26). Columbia Gas witness Mark Kempic argues that this excellence is manifested in safety, low-income programming, and the commitment to customer service. Mr. Kempic compares the results of management and operation audits by the Commission for various NGDCs as further support. Based on my discussion below, I conclude that the recommendation of OCA witness Garrett should be adopted with respect to this request for an additional return on equity.

Q. HAVE YOU REVIEWED AN EARLIER REQUEST BY COLUMBIA FOR AN ADDITION TO ITS ROE TO REFLECT MANAGEMENT PERFORMANCE?

A. Yes. I testified on behalf of OCA in Columbia's 2020 base rate case (Docket No. R-2020-3018835). Columbia requested an additional 20 basis points in that case. I examined the Commission's 2020 Management and Operations Audit Report and Columbia Gas' response to the Management Audit recommendations.[17] The PUC did not grant Columbia's 2020 management performance claim, due in part to a lack of supporting evidence.[18]

[17] Pa. PUC v. Columbia Gas of Pennsylvania LLC, Docket No. R-2020-3018835, OCA St. No. 5, Colton Direct at 3-6, 12-13, 26-28, 82; OCA St. No. 5S, Colton Surrebuttal at 5, 17-18. Management and Audit Report – Columbia Gas of Pennsylvania LLC at 'Docket No. D-2019-301582. Available at https://www.puc.pa.gov/pcdocs/1670369.pdf .

[18] Pa. PUC v. Columbia Gas of Pennsylvania LLC, Docket No. R-2020-3018835, Order at 132-135 (Feb. 19, 2021).

Q. DOES COLUMBIA GAS WITNESS KEMPIC'S REVIEW OF THE SAME 2020 MANAGEMENT AUDIT SUPPORT COLUMBIA'S CURRENT MANAGEMENT PERFORMANCE CLAIM?

A. No, not in my opinion. This is Columbia Gas's third base rate case since the Management Audit for Columbia Gas was made public. Mr. Kempic's comparison of management and operations audit report results for Pennsylvania NDGCs released between 2014 and 2021 does not provide useful information.[19] Further, Columbia's performance as described in the 2020 Management Audit was already examined in Columbia's 2020 base rate case.

Q. DOES COLUMBIA'S 'WE'RE HERE FOR YOU" CAMPAIGN JUSTIFY AN INCREASE IN RATES TO RECOGNIZE MANAGEMENT EFFECTIVENESS?

A. No. Mr. Kempic refers to the campaign as an example of effective management. The campaign is Columbia's "outreach strategy to increase awareness of available resources and programs to identified low-income customers and to customers that maybe low income but are not identified in Columbia's system." (Kempic, at 41). In response to the 2020 Management Audit, Columbia agreed to develop such an outreach effort. In the 2020 base rate case, I described the need for such outreach and recommended specific ways to make outreach effective.[20] While Columbia continues to inappropriately rely primarily on Company-centric outreach strategies, Columbia's progress to follow-up on this commitment should benefit the targeted low-income customer base. The "management effectiveness," in this regard, remains to be seen. The management

[19] Kempic, at 26-27, Exh. MRK-1; Columbia reply to OCA-IX-2.

[20] OCA St. No. 5, Colton Direct at 3-6, 26-28, Docket No. R-2020-3018835.

question that will present itself is whether Columbia will establish measurable outcome objectives that will be accomplished as a result of these activities and, in addition, whether Columbia uses the measurement of accomplishments (or the lack thereof) to engage in a continuing improvement process. The campaign, standing alone, however, does not justify an increase to Columbia's ROE and rates to reflect management effectiveness.

Q. HAVE YOU REVIEWED CUSTOMER SATISFACTION AS IT RELATES TO COLUMBIA GAS?

A. Yes. Columbia Gas ranks consistently fails to rank in the top tiers of customer satisfaction reported by the Pennsylvania PUC. I reviewed the BCS "2020 Customer Service Performance Report" dated September 2021.[21] The BCS Customer Service Performance Report is required in part by Pennsylvania's Natural Gas Choice and Competition Act.[22] I use this data because it is the data that the PUC has deemed appropriate as a basis upon which to review utility performance. My review of customer satisfaction finds that:

- Columbia Gas had mid-level performance with respect to customer satisfaction regarding the ease of reaching the Company. Columbia had noticeably lower customer satisfaction than either NFG or UGI Gas. It was ranked roughly equal to Peoples and PGW. One-in-four Columbia Gas customers said they were less than "very satisfied" with their ease in reaching Columbia Gas.

- Columbia Gas had mid-level performance with respect to customer satisfaction with using the Company's automated telephone system.

[21] Available at https://www.puc.pa.gov/filing-resources/reports/customer-service-performance-reports/ (last accessed April 8, 2022).

[22] BCS 2020 Customer Service Report, Executive Summary, page iii.

Columbia's customer satisfaction was higher than Peoples but lower than PGW. It was equal to UGI Gas in customer satisfaction with the use of the automated phone system.

- Columbia Gas was next to last with the percent of customer's being very satisfied the Company's handling of a recent contact. Only PGW had a lower percentage of customers very satisfied with their recent contact. One-in-seven (15%) of customers reported being less than "very satisfied" during their recent contact.

- Columbia Gas customers had mid-level performance when customer's ranked the Company's call center representatives on their knowledge. NFG had a higher percentage of customers reporting the call center representatives were "very knowledgeable" while PGW and UGI were lower. Columbia Gas was equal to Peoples in the percentage of customers who reported their call center's representative was "very knowledgeable." One-in-eight customers said their call center representative was less than "very knowledgeable."

- Columbia Gas had performance exactly in the middle as measured by customer satisfaction with the Company's "overall quality of service during recent contact." Columbia had better performance than UGI Gas and PGW, but lower than Peoples and NFG.

A review of the customer service performance reveals that Columbia Gas does not perform at the top of Pennsylvania utilities. Its customer satisfaction does not support an upward adjustment in the return on equity for superior company performance.

Q. HAVE YOU REVIEWED COLLECTIONS PERFORMANCE AS IT RELATES TO COLUMBIA GAS?

A. Yes. In reviewing collections performance, I do not consider Columbia Gas' performance relating to universal service. Earlier in this testimony, I have proposed specific Outcome Objectives that Columbia Gas should use to measure its performance regarding universal service. In reviewing collections performance, I reviewed the most recent BCS annual report on Universal Service Programs and Credit and Collections. The 2020 annual report is the most recent report available. The 2020 BCS report documents that:

- While Columbia Gas had the lowest termination rate of residential customers amongst Pennsylvania's natural gas utilities, when a customer *is* disconnected, that customer is more likely than a customer of any other gas utility of not being reconnected. Columbia Gas reconnected a lower percentage of disconnected residential customers than any other Pennsylvania natural gas utility.

- Even though it terminates fewer residential customers, Columbia Gas residential customers do not have lower levels of average arrears per customer with arrears. Columbia's average arrears are mid-range. The average Columbia Gas arrears are higher than Peoples, NFG, and UGI Gas. They are roughly equal to the average arrears of PECO and PGW.

Q. WHAT DO YOU CONCLUDE?

A. In my testimony above, I reviewed whether Columbia Gas has engaged in exemplary management in the areas of customer satisfaction, customer service, and universal service. I conclude that Columbia Gas has, at best, performed in the middle of the pack amongst Pennsylvania's natural gas utilities rather than in an exemplary fashion. Columbia Gas has not manifested any particular "excellence" in management that would support an upward adjustment in its return on equity.

Q. DOES THIS COMPLETE YOUR DIRECT TESTIMONY?

A. Yes, it does.

Colton Schedules

Residential Billings and Collections (OCA-III-14)				
	Billing for Current Service	Total Payments Received	Ratio Pyts to Bills	Cumulative Ratio
May-20	$24,311,235	($30,465,389)	125%	125%
Jun-20	$16,580,279	($27,881,320)	168%	143%
Jul-20	$12,472,812	($23,121,773)	185%	153%
Aug-20	$11,351,954	($20,814,118)	183%	158%
Sep-20	$12,344,204	($20,335,959)	165%	159%
Oct-20	$18,088,382	($22,961,553)	127%	153%
Nov-20	$28,206,015	($26,742,189)	95%	140%
Dec-20	$56,264,865	($34,072,125)	61%	115%
Jan-21	$73,097,388	($54,620,668)	75%	103%
Feb-21	$76,783,340	($57,176,272)	74%	97%
Mar-21	$73,699,593	($68,673,190)	93%	96%
Apr-21	$41,703,181	($51,047,735)	122%	98%
May-21	$24,663,539	($38,588,013)	156%	101%
Jun-21	$18,224,144	($33,015,120)	181%	104%
Jul-21	$13,003,938	($26,577,865)	204%	107%
Aug-21	$13,112,212	($25,897,633)	198%	109%
Sep-21	$12,726,042	($26,153,543)	206%	112%
Oct-21	$15,222,537	($27,223,449)	179%	114%
Nov-21	$36,813,602	($31,581,144)	86%	112%
Dec-21	$69,622,373	($44,664,915)	64%	107%
Jan-22	$94,760,696	($66,449,910)	70%	102%
Feb-22	$101,209,196	($77,785,513)	77%	99%
Mar-22	$85,145,007	($84,168,783)	99%	99%
Apr-22	$53,978,900	($59,949,131)	111%	100%

Low-Income Billings and Collections
(OCA-III-15)

		Billings for Low Income (LI)	Dollars of Payments from LI	Monthly Ratio Pyts to Bills ($s)	Cumulative Ratio Pyts to Bills ($s)
2020	MAY	$4,037,124	-$3,603,541	89%	
2020	JUN	$2,569,064	-$3,202,514	125%	103%
2020	JUL	$1,850,999	-$3,175,226	172%	118%
2020	AUG	$1,707,346	-$2,623,705	154%	124%
2020	SEP	$1,885,110	-$2,653,818	141%	127%
2020	OCT	$3,110,475	-$2,963,545	95%	120%
2020	NOV	$4,886,124	-$3,374,928	69%	108%
2020	DEC	$9,484,022	-$3,707,836	39%	86%
2021	JAN	$12,195,041	-$4,410,971	36%	71%
2021	FEB	$12,903,491	-$4,540,230	35%	63%
2021	MAR	$12,605,364	-$6,595,484	52%	61%
2021	APR	$7,121,165	-$5,595,495	79%	62%
2021	MAY	$4,128,692	-$4,977,801	121%	66%
2021	JUN	$2,814,669	-$4,347,940	154%	69%
2021	JUL	$1,905,738	-$3,849,562	202%	72%
2021	AUG	$1,869,421	-$3,711,813	199%	74%
2021	SEP	$1,849,450	-$5,271,681	285%	79%
2021	OCT	$2,427,634	-$5,581,223	230%	83%
2021	NOV	$6,214,245	-$4,685,608	75%	83%
2021	DEC	$11,511,433	-$3,757,736	33%	77%
2022	JAN	$15,571,644	-$4,726,848	30%	71%
2022	FEB	$15,922,944	-$5,673,727	36%	67%
2022	MAR	$14,262,445	-$6,935,895	49%	65%
2022	APR	$8,908,931	-$5,921,968	66%	65%

Appendix: Colton Abbreviated Vitae

Roger Colton
Fisher, Sheehan & Colton
Public Finance and General Economics
Belmont, MA
* *

EDUCATION:

J.D. (Order of the Coif), University of Florida (1981)

M.A. (Regulatory Economics), McGregor School, Antioch University (1993)

B.A. Iowa State University (1975) (journalism, political science, speech)

PROFESSIONAL EXPERIENCE:

Fisher, Sheehan and Colton, Public Finance and General Economics: 1985 - present.

As a co-founder of this economics consulting partnership, Colton provides services in a variety of areas, including: regulatory economics, poverty law and economics, public benefits, fair housing, community development, energy efficiency, utility law and economics (energy, telecommunications, water/sewer), government budgeting, and planning and zoning.

Colton has testified in state and federal courts in the United States and Canada, as well as before regulatory and legislative bodies in more than three dozen states. He is particularly noted for creative program design and implementation within tight budget constraints.

PROFESSIONAL AFFILIATIONS:

Past Chair:	Belmont Zoning By-law Review Working Committee (climate change)
Member:	Board of Directors, Massachusetts Rivers Alliance
Columnist:	Belmont Citizen-Herald
Producer:	Belmont Media Center: BMC Podcast Network
Host:	Belmont Media Center: Belmont Journal
Member:	Belmont Town Meeting
Vice-chair:	Belmont Light General Manager Screening Committee
Past Chair:	Belmont Goes Solar
Coordinator:	BelmontBudget.org (Belmont's Community Budget Forum)
Coordinator:	Belmont Affordable Shelter Fund (BASF)

Past Chair: Belmont Solar Initiative Oversight Committee
Past Member: City of Detroit Blue Ribbon Panel on Water Affordability
Past Chair: Belmont Energy Committee
Member: Massachusetts Municipal Energy Group (Mass Municipal Association)
Past Chair: Housing Work Group, Belmont (MA) Comprehensive Planning Process
Past Chair: Board of Directors, Belmont Housing Trust, Inc.
Past Chair: Waverley Square Fire Station Re-use Study Committee (Belmont MA)
Past Member: Belmont (MA) Energy and Facilities Work Group
Past Member: Belmont (MA) Uplands Advisory Committee
Past Member: Advisory Board: Fair Housing Center of Greater Boston.
Past Chair: Fair Housing Committee, Town of Belmont (MA)
Past Member: Aggregation Advisory Committee, New York State Energy Research and Development Authority.
Past Member: Board of Directors, Vermont Energy Investment Corporation.
Past Member: Board of Directors, National Fuel Funds Network
Past Member: Board of Directors, Affordable Comfort, Inc.
Past Member: National Advisory Committee, U.S. Department of Health and Human Services, Administration for Children and Families, Performance Goals for Low-Income Home Energy Assistance.
Past Member: Editorial Advisory Board, International Library, *Public Utility Law Anthology*.
Past Member: ASHRAE Guidelines Committee, GPC-8, *Energy Cost Allocation of Comfort HVAC Systems for Multiple Occupancy Buildings*
Past Member: National Advisory Committee, U.S. Department of Housing and Urban Development, Calculation of Utility Allowances for Public Housing.
Past Member: National Advisory Board: Energy Financing Alternatives for Subsidized Housing, New York State Energy Research and Development Authority.

<u>PROFESSIONAL ASSOCIATIONS:</u>

National Association of Housing and Redevelopment Officials (NAHRO)
National Society of Newspaper Columnists (NSNC)
Association for Enterprise Opportunity (AEO)
Iowa State Bar Association
Energy Bar Association
Association for Institutional Thought (AFIT)
Association for Evolutionary Economics (AEE)
Society for the Study of Social Problems (SSSO)
Association for Social Economics

BOOKS

Colton, *et al., **Access to Utility Service***, National Consumer Law Center: Boston (4th edition 2008).

Colton, *et al.*, ***Tenants' Rights to Utility Service***, National Consumer Law Center: Boston (1994).

Colton, ***The Regulation of Rural Electric Cooperatives***, National Consumer Law Center: Boston (1992).

BOOK CHAPTERS

Colton (2018). The equities of efficiency: distributing energy usage reduction dollars, Chapter in Energy Justice: US and International Perspectives (Edited by Raya Salter, Carmen Gonzalez and Elizabeth Ann Kronk Warner), Edward Elgar Publishing (London, England).

JOURNAL PUBLICATIONS

65 publications in industry and academic journals, primarily involving utility regulation and affordable housing. (list available upon request)

TECHNICAL REPORTS

200 technical reports for public-sector and private-sector clients (list available upon request)

JURISDICTIONS IN WHICH EXPERT WITNESS PROVIDED

1. Maine
2. New Hampshire
3. Vermont
4. Massachusetts
5. Massachusetts
6. Rhode Island
7. Connecticut
8. New Jersey
9. Maryland
10. Pennsylvania
11. Washington D.C.
12. Virginia
13. North Carolina
14. South Carolina
15. Florida (Federal Court)
16. Alabama
17. Mississippi
18. Tennessee
19. Kentucky
20. Ohio
21. Indiana
22. Michigan
23. Wisconsin
24. Illinois
25. Minnesota
26. Iowa
27. Missouri
28. Arkansas
29. Texas (Federal Court)
30. South Dakota
31. North Dakota
32. Montana
33. Colorado
34. New Mexico
35. Arizona
36. Utah
37. Idaho
38. Nevada
39. Washington
40. Oregon
41. California
42. Hawaii
43. Kansas

Canadian Provinces

1. Nova Scotia
2. Ontario
3. Manitoba
4. British Columbia

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Re: Pennsylvania Public Utility Commission	:	
	:	
v.	:	Docket No. R-2022-3031211
	:	
Columbia Gas of Pennsylvania, Inc.	:	

VERIFICATION

I, Roger D. Colton, hereby state that the facts set forth in my Direct Testimony, OCA Statement 4, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa. C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: June 7, 2022
*330102

Signature: [signature]
Roger D. Colton

Consultant Address: Fisher, Sheehan, & Colton
34 Warwick Road
Belmont, MA 02478

OCA Statement 5

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission v. Columbia Gas of Pennsylvania, Inc.	Docket No. R-2022-3031211

DIRECT TESTIMONY

OF

Noah D. Eastman

ON BEHALF OF

THE PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

June 7, 2022

<u>Introduction</u>

Q. Please state your name, business address and occupation.

A. My name is Noah D. Eastman. My business address is 555 Walnut Street, Forum Place, 5th Floor, Harrisburg, Pennsylvania 17101. I am currently employed as a Regulatory Analyst by the Pennsylvania Office of Consumer Advocate (OCA).

Q. Please describe your educational background and qualifications to provide testimony in this case.

A. I have a bachelor's degree in Economics with a Business Concentration from Shippensburg University. My educational background and qualifications are described in Appendix A.

Q. Have you testified before the Pennsylvania Public Utility Commission before?

A. Yes. I have submitted testimony in the following cases:

McCloskey v. Hidden Valley Utility Service - C-2014-2447138, C-2014-2447169

Application of Pennsylvania American Water Company - A-2020-3019634

PaPUC v. Duquesne Light Company – R-2021-3024750

PaPUC v. PECO Energy Company – Electric Division – R-2021-3024601

PaPUC v. Community Utilities of Pennsylvania –

R-2021-3025206, R-2021-3025207

Application of Aqua Pennsylvania Wastewater, Inc. - A-2021-3026132

Q. On whose behalf are you testifying in this proceeding?

A. I am testifying on behalf of the Office of Consumer Advocate.

Purpose of Direct Testimony:

Q. What was your assignment in this case?

A. The primary purpose of my testimony is to respond to the requested 25 basis point (0.25%) adder to the return on equity for Columbia Gas of Pennsylvania, Inc. ("CPA" or the "Company"). I am responding to portions of the Direct Testimony of Company witness Mark Kempic.

Q. Based on the Company's as filed revenue requirement, how much would a 25 basis points adder to the return on equity cost Columbia ratepayers?

A. A 25 basis point adder would cost ratepayers $5.89 million dollars, as determined by OCA Witness Lafayette Morgan.

Q. Please summarize your recommendation regarding the proposed adder for "exemplary management".

A. The proposed claim is unreasonable, and the support is insufficient to justify an increase in return on equity. The request should be rejected.

Response to Witness Kempic

Q. Please comment on Columbia's request for a 25 basis point increase to return on equity for management effectiveness.

A. Mr. Kempic describes a broad array of company activities and internal programs directed at helping Columbia provide utility service to its customers while protecting its workers and infrastructure. This is what Columbia should be doing, to comply with Section 1501 and related service quality and performance standards. The current rate case provides Columbia with the opportunity to recover on-going expenses (labor, training, protective gear, etc.) and a return on related capital investments. It is not in the public interest to require ratepayers to pay even higher rates as a reward for management effectiveness.

Q. WHAT ELEMENTS OF THE COMPANY'S CLAIM WILL YOU ADDRESS?

A. Mr. Kempic states that the company has performed at a high level for its customers in both back-office operations, field operations and customer service (Columbia St. No. 1, p. 26), and that this is confirmed through several surveys and evaluations collected by the PUC and paid contractors. Mr. Kempic also describes efforts by Columbia and its NiSource affiliates to support the communities it serves (Columbia St. No. 1, pp. 45-48).

Q. What is your conclusion regarding the proposed adder for "exemplary management"?

A. The adder for exemplary management should be denied for the following reasons:

1. As is discussed by OCA Witness Garrett (OCA Statement 2), an adjustment to the return on equity is unrelated to CPA's cost of equity estimate.

2. As is discussed by OCA Witness Colton (OCA Statement 4) in his review of customer service performance measures, Columbia provides "mid-level" and adequate service, but this service also does not support an upward adjustment in the return on equity.

3. In my review of CPA and OCA witness testimony, it is clear that CPA performance in the aggregate is adequate, but also average, for a natural gas utility. Performing above average on select categories of service while performing at or below average on other categories of service does not justify any type of compensation for exemplary performance. Similarly, support for the communities served by Columbia may be admirable, but ratepayers should not be required to fund such donations, directly or indirectly.

Q. Please respond to Mr. Kempic's claims regarding customer service.

A. This is also discussed by OCA Witness Colton in OCA Statement 4, but it is clear that Columbia performs well in some aspects of customer service while performing average or below average in others. Evidence provided by OCA Witness Colton and available in the Commission's 2020 Customer Service Report shows that Columbia performed average in the following categories:

1. Percent of Customers Indicating Satisfaction with Ease of Reaching NGDC 2020

2. Percent of Customers Indicating Satisfaction with Using NGDC's Automated Phone System 2020

3. Percent of Customers Indicating Satisfaction with NGDC Representative's Handling of the Contact 2020

4. Satisfaction with Call Center Representative's Courtesy and Knowledge

And the report shows that Columbia performed in the top, but not alone at that top, in:

1. Percent of Customers Satisfied with NGDC's Overall Quality of Service During Recent Contact 2020

These findings show that Columbia performs as is expected of a Natural Gas Distribution Company in Pennsylvania, but does not outperform, and certainly does not outperform to the level necessary, in ways that would warrant an adder to return on equity for "exemplary management."

Q. Mr. Kempic also provides information regarding collections in support of his claim, what are your findings after review of that information?

A. OCA Witness Colton goes into detail as well, but it is clear from the 2020 BCS Annual report that Columbia again performs at or above average in some metrics, and below average in others. Mainly, Columbia customers have average levels of arrears and those customers who are disconnected are less likely to be reconnected than customers of any other utility. Again, this provides no support to increase the Company's return on equity above what is required to ensure safe, reliable and adequate service.

Q. Do you believe that Columbia "Quality of Service Performance Report" for 2021 justifies an increase in compensation for "exemplary management"?

A. No. There are 3 sections discussed by Mr. Kempic and I will respond to each individually:

Call Center Performance

Columbia had a 12% decrease in their "Calls Answered within 30 seconds" metric from 86% in 2020 to 74% in 2021. Thus, while the Company clearly experienced an increase in calls, it is difficult to see how answering fewer of those calls within 30 seconds constitutes exemplary performance (OCA IX – 12)).

Mr. Kempic further testified that the Company has performed well with regard to hiring by expanding its geographic range of hiring, hiring contractors, working with community-based organizations to meet hiring needs, and increasing starting wages. Meeting hiring challenges, however, is a core management responsibility and the fact that Columbia met its responsibility while notable is not "exemplary management."

Meter Reading

Columbia performs as is expected of a Natural Gas Distribution Company and reads nearly all their meters, with slight increases in unread meters attributed to COVID-19 policies. Meeting the basic responsibilities of a gas utility does not entitle the Company to a management adder.

Customer Satisfaction

To go along with the Commission surveys, Columbia uses outside contractors to perform surveys to determine the effectiveness of satisfaction reported by its customers (Columbia St. 1, pp. 35-39).

Mr. Kempic cites Columbia's performance in the 2021 J.D. Power Residential Customer Satisfaction Survey (score of 766) and ranking among mid-sized Eastern gas utilities as support. (Columbia St. 1, pp 38-39). J.D. Power invites consumers to participate in "an important J.D. Power study in order to assist utilities in improving what they offer to you, the consumer." (Response to OCA-IX-10). Surveyed consumers are not told that the survey results may be used to increase rates. (Id.)

Q. Do the results of the J.D. Power survey justify an increase in compensation for exemplary management?

A. No. In the J.D. Power survey results among Natural Gas Distribution Companies (NGDCs), there are no other Pennsylvania NGDCs in the "East Region: Midsize Segment".[1] The range of scores is from 704 – 772, with an average of 748.[2] While Columbia's score is above the average, this does not indicate exemplary management. Columbia's overall performance had not improved in the year prior, as is shown in their just one point increase in score since the 2020 survey (Columbia St. 1, pp. 38-39). Columbia's last rate case covered this same period, and this 1 point increase is hardly reason enough to request a management adder for performance. Columbia provides acceptable service in some metrics, while in

[1] https://www.jdpower.com/sites/default/files/file/2022-02/2021167%20Gas%20Utility%20Residential.pdf
[2] Ibid.

other metrics, as seen in my testimony and testimony of other OCA Witnesses Garrett and Colton, Columbia has a number of areas in which their service is average or below. I do not believe that the J.D. Power survey in general or Columbia's results in particular support an increase to the return on equity to recognize exemplary management.

Q. Would you like to comment on any other survey information provides by Columbia?

Yes. The MSR Group survey referenced on pages 35-38 of Columbia St. 1 also provides no support for an adjustment, as it is merely proving that Columbia is providing the 90% customer satisfaction expected of them by their customers..

Q. Do you believe that community outreach and support should be considered when evaluating whether a company should receive an adder for management performance?

A. No. On principal this information should not be considered when evaluating the claim. The Company's outreach and charitable giving is unrelated to the Company's ROE, or at least it should be. Using the Company's outreach and charitable giving in support of an ROE adder is effectively an indirect reward to the Company, the NiSource Foundation, and shareholders.

Q. Please explain.

A. Columbia funds this giving through shareholders through the NiSource Charitable Foundation (Columbia Statement No. 1, p. 46). Charitable giving is not to be considered in cost of service so as to avoid ratepayers funding the corporate giving. However, by using it as support for a return on equity adder, Columbia seeks to effectively recoup from ratepayers a portion of that which they given charitably. While Columbia should be applauded for its voluntary good corporate citizenship in the communities that it serves, it should not be awarded an indirect return on this activity.

Conclusion:

Q. Please summarize your findings.

A. It is clear from the evidence that Columbia Gas is a utility that is providing adequate and reliable service. This service is in some ways above average, in some ways average, and in some ways below average. There is no indication that it is exemplary such that any adder is warranted let alone one that would cost ratepayers $5.89 million. None of the evidence provided by Mr. Kempic supports an increase in return on equity, and as such the Commission should deny the 25 basis-point adjustment.

Q. Does this conclude your testimony?

A. Yes. However, I reserve the right to modify or supplement my testimony if needed.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Re:	Pennsylvania Public Utility Commission	:	
		:	
	v.	:	Docket No. R-2022-3031211
		:	
	Columbia Gas of Pennsylvania, Inc.	:	

VERIFICATION

I, Noah D. Eastman, hereby state that the facts set forth in my Direct Testimony, OCA Statement 5, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: June 7, 2022
*330103

Signature: ______________________
Noah D. Eastman

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