JOHN N. HUGHES

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Professional Service Corporation

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July 30, 2021

Linda C. Bridwell
PSC Executive Director
Public Service Commission
211 Sower Blvd.
Frankfort, KY 40601

Re: Atmos Energy Corporation
Case No. 2021-00304

Dear Ms. Bridwell:

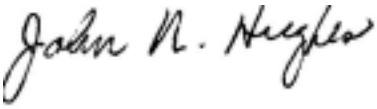
Atmos Energy Corporation submits its application to establish PRP Rider Rates for the twelve-month period commencing October 1, 2021. I certify that the electronic documents are true and correct copies of the original documents, which will be filed pursuant to the Commission's COVID-19 orders.

If you have any questions about this filing, please contact me.

Submitted By:

Mark R. Hutchinson
Wilson, Hutchinson & Littlepage
611 Frederica Street
Owensboro, KY 42301
(270) 926-5011
randy@whplawfirm.com

And



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Attorneys for Atmos Energy Corporation

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

APPLICATION OF ATMOS ENERGY CORPORATION
TO ESTABLISH PRP RIDER RATES FOR THE
TWELVE MONTH PERIOD BEGINNING
OCTOBER 1, 2021 CASE NO. 2021-00304

APPLICATION

Atmos Energy Corporation ("Company"), by counsel, applies to the Kentucky Public Service Commission ("Commission"), for approval to establish PRP Rider Rates for the 12-month period beginning October 1, 2021. In support of this Application, Company states as follows:

1. The Company is an operating public utility engaged in the business of supplying natural gas to the public in numerous cities, towns and communities in western and south central Kentucky. Correspondence and communications with respect to this Application should be directed to:

Brannon C. Taylor,
Atmos Energy Corporation,
810 Crescent Centre Dr. STE 600,
Franklin, TN 37067
(615) 771-8330 Ph
(615) 771-8301 fax
(brannon.taylor@atmosenergy.com)

Mark R. Hutchinson,
Wilson, Hutchinson & Littlepage,
611 Frederica Street,
Owensboro, Kentucky 42301
270 926 5011 Ph
(270) 926-9394 fax
(randy@whplawfirm.com)

And

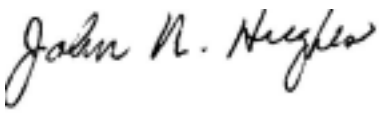
John N. Hughes
124 W. Todd St.
Frankfort, KY 40601
(502) 227 7270 Ph
(jnhughes@johnnhughespsc.com)

2. The Company is a corporation duly qualified under the laws of the Commonwealth of Kentucky to carry on its business in the Commonwealth. A certified copy of Company's restated Articles of Incorporation, as amended, together with all amendments thereto, is on file in the records of the Commission and the same are incorporated herein by reference. See Case No. 2018-00281. The Company was initially incorporated in Texas on February 6, 1981 and in Virginia on July 21, 1997. Applicant attests that it is a foreign corporation in good standing to operate in Kentucky. Atmos Energy does not operate under an assumed name in Kentucky.

3. The Company is filing this application in compliance with the Commission's Order in Case No. 2018-00281 and Case No. 2020-00229. This Application and the attached supporting exhibits contain the facts on which the relief being requested is based, a request for the relief sought and references to the particular provisions of law requiring or providing for the relief sought as specified in 807 KAR 5:001

WHEREFORE, the Company requests the Commission to approve the attached PRP Rider Rates for the 12-month period beginning October 1, 2021.

Respectfully submitted this 30st day of July, 2021.



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WILSON, HUTCHINSON & LITTLEPAGE
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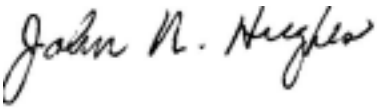
randy@whplawfirm.com

CERTIFICATE

In accordance with the requirements of 807 KAR 5:001, I certify that this electronic filing is a true and accurate copy of the documents to be filed in paper medium; that the electronic filing has been transmitted to the Commission on July 30, 2021; that an original of the filing will be delivered to the Commission pursuant to the requirements of the Commission's COVID-19 orders; and that no party has been excused from participation by electronic means.



John N. Hughes

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

APPLICATION OF ATMOS ENERGY CORPORATION TO ESTABLISH PRP RIDER RATES FOR THE TWELVE MONTH PERIOD BEGINNING OCTOBER 1, 2021	))))	CASE NO. 2021-00304

AFFIDAVIT

The Affiant, Brannon C. Taylor, being duly sworn, deposes and states that the statements contained in the attached Application are true and correct to the best of my knowledge and belief.

Brannon C. Taylor

STATE OF TENNESSEE
COUNTY OF DAVIDSON

SUBSCRIBED AND SWORN to before me by Brannon C. Taylor on this the 23rd day of July, 2021.

BO ROBERTSON
STATE OF TENNESSEE NOTARY PUBLIC
RUTHERFORD COUNTY

Notary Public

My Commission Expires: 11/17/24

My Commission Expires
November 17, 2024

BEFORE THE PUBLIC SERVICE COMMISSION

COMMONWEALTH OF KENTUCKY

IN THE MATTER OF:

APPLICATION OF ATMOS ENERGY	**)**	
CORPORATION TO ESTABLISH PRP	**)**	
RIDER RATES FOR THE TWELVE	**)**	**Case No. 2021-00304**
MONTH PERIOD BEGINNING	**)**	
OCTOBER 1, 2021	**)**	

TESTIMONY OF BRANNON C. TAYLOR

INDEX TO THE DIRECT TESTIMONY
OF BRANNON C TAYLOR, WITNESS FOR
ATMOS ENERGY CORPORATION

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME, POSITION AND BUSINESS ADDRESS.

A. My name is Brannon C. Taylor. I am Vice President - Rates and Regulatory Affairs for the Kentucky/Mid-States Division of Atmos Energy Corporation ("Atmos Energy" or the "Company"). My business address is 810 Crescent Centre Dr. Ste 600, Franklin, Tennessee, 37067.

Q. PLEASE BRIEFLY DESCRIBE YOUR CURRENT RESPONSIBILITIES, AND PROFESSIONAL AND EDUCATIONAL BACKGROUND.

A. I am responsible for all rate and regulatory matters in Kentucky, Tennessee, and Virginia. I graduated from Vanderbilt University in 2009 with a degree in Political Science. I also graduated from Emory University in 2012 with a law degree and am a licensed attorney. I have been with Atmos Energy Corporation since September 2012. I have served in a variety of positions of increasing responsibility in both the Corporate Rates and Regulatory Affairs group as well as the Kentucky/Mid-States Division prior to assuming my current responsibilities in 2020.

Q. HAVE YOU SUBMITTED TESTIMONY BEFORE THE KENTUCKY PUBLIC SERVICE COMMISSION ("COMMISSION")?

A. Yes, I submitted Direct Testimony in Case No 2021-00214.

Q. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY ON MATTERS BEFORE OTHER STATE REGULATORY COMMISSIONS?

A. Yes, I have filed testimony before the Tennessee Public Utility Commission.

II. PURPOSE AND SUMMARY OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. My direct testimony will address two areas referenced in the Final Order in Case No. 2020-00229 issued by the Commission in the Company's previous Pipeline Replacement Program ("PRP") Rider filing, as well as introduce the Company's other witness in this case. Specifically, I will address our compliance with changes to the revenue requirement calculation and compliance with evaluating the return on equity in this case[1]. I will sponsor the incorporation of the revenue requirement schedules to determine the PRP deficiency, incorporate the capital structure into the record in this case, and incorporate the addition of Aldyl-A projects. Finally, I will also address the relationship between the timing of this filing and the Company's pending general rate case.

[1] (1) Calculating the PRP rate base in a forecasted period in a manner consistent with 807 KAR 5:001, Section 16(6)(c) and reflect an overall rate of return established in the annual PRP rate application.

III. CHANGES IN THE PRP SINCE CASE NO. 2020-00229

Q. PLEASE BRIEFLY DISCUSS THE CHANGES TO THE REVENUE REQUIREMENT CALCULATION IN THIS CASE COMPARED TO THE COMPANY'S PRIOR PRP FILING.

A. The 2020-00229 Order stated, *inter alia*, that "Atmos's PRP rate base in any forecasted period will be calculated in a manner consistent with 807 KAR 5:001, Section 16(6)(c)" which the Order earlier states "requires utilities requesting a general rate adjustment based on a forecasted test year to calculate their rate bases using a 13-month average." The Company has calculated a 13-month average rate based for the forecasted period in this case in compliance with the order. The PRP plant additions and retirements are broken out by month as shown on Exhibit B-1.

Q. DID THE COMPANY MAKES ANY CHANGES TO ITS ACCUMULATED DEFERRED INCOME TAX ("ADIT") CALCULATION PURSUANT TO THE 2020-00229 ORDER?

A. Yes. The Company calculated ADIT in the same manner as approved by the Commission in 2020-00229. Specifically, the Company included in its rate base the ADIT that was generated from timing differences in the years ending September 2020 and 2021 as well as changes in ADIT during the forecasted period. These amounts are shown on Exhibit B-1 of the Company's filing.

Q. HAS THE COMPANY UPDATED THE RATE OF RETURN USED IN THE PRP CALCULATION IN THIS FILING IN ACCORDANCE WITH THE 20-20-00229 ORDER?

A. Yes. The Final Order from Case No 2020-00229 ordered the Company to amend its PRP tariff to reflect that the overall rate of return will be established in the annual PRP rate application, rather than defaulting to the return on equity ("ROE") ordered by the Commission in the Atmos Energy's prior general rate case. The Company has complied with this in its filing by engaging consultant Dylan D'Ascendis to provide testimony to support the ROE used in this case. Because of the proximity of the timing of this PRP filing and Atmos Energy's pending rate case, and other reasons as described in Mr. D'Ascendis's testimony, the proposed ROE is equal to the ROE proposed in the general rate case.

Q PLEASE DISCUSS THE RETURN ON EQUITY AMOUNT USED BY THE COMPANY IN THIS PRP FILING.

A. The Order in Case No. 2020-00229 stated "[g]iven the condensed timeline of these proceedings, the Commission strongly recommends that Atmos file adequate testimony to support its proposed rate of return, including a reasonable ROE." The testimony of Company Witness Dylan D'Ascendis sponsors the ROE calculations used by the Company. The overall rate of return is summarized in Table 1 below:

Table 1: Summary of Recommended Weighted Average Cost of Capital

Type of Capital	Ratios	Cost Rate	Weighted Cost Rate
Long-Term Debt	42.77%	4.00%	1.71%
Short-Term Debt	0.18%	25.17%	0.05%
Common Equity	57.05%	10.35%	5.90%
Total	100.00%		7.66%

Q. WHAT SUPPORT IS THE COMPANY PROVIDING FOR THE CAPITAL STRUCTURE REFLECTED IN TABLE 1 ABOVE?

A. The ratemaking capital structure and cost of long-term debt is sponsored by Company Witness Christian in Case No. 2021-00214. The Company incorporates by reference Mr. Christian's testimony in that filing to support its rate of return in this filing.

Q. HAVE THE TYPES OF MATERIALS FOR REPLACEMENT BEEN EXPANDED IN THIS FILING AS COMPARED TO THE 2020-00229 CASE?

A. Yes. In Case No. 2021-00214, Atmos Energy witness T. Ryan Austin[2] explains why it is in the public interest and consistent with the Commission's policy to include Aldyl-A replacement projects in the Company's PRP investment. The direct testimony of these witnesses in Case No. 2021-00214 is incorporated herein by reference. The Aldyl-A projects are listed in Exhibit K-3 of the Company's filing.

[2] *See* Case No. 2021-00214, *Direct Testimony of T. Ryan Austin*, at 23-33.

Q. PLEASE DESCRIBE ATMOS ENERGY'S EXPERIENCE WITH ALDYL-A IN ITS KENTUCKY SYSTEM.

A. As Ryan Austin explains in the above-referenced and fully incorporated testimony, over the past ten years, in Kentucky leaks on Aldyl-A within our system have averaged 35% higher per 100 miles of pipe than leaks on other types of PE pipe. When compared with leaks on coated steel, the rate is over 250% higher per 100 miles of pipe.

Atmos Energy's system in Cadiz, Kentucky is a good example of how we see the susceptibility to cracking of Aldyl-A. The Cadiz system was installed in the mid-1960s and is entirely Aldyl-A pipe. The system has had a history of leaks caused by the rocky bedding conditions impinging on the Aldyl-A pipe which has proven to lead to increased cracking. This area also has tracer wire on the pipe that has deteriorated with time which make it difficult to locate.

Q. WHY DID ATMOS ENERGY INCLUDE THE ALDYL-A PROJECTS IN THIS FILING WHEN THE PRP TARIFF REFLECTS ONLY BARE-STEEL PIPE REPLACEMENT?

A. As discussed in the testimony of T. Ryan Austin in Case No. 2021-00214, it is both reasonable and prudent for the Company to pursue the accelerated replacement of pipe comprised of materials with known and documented risks. Replacement of these pipes allows Atmos Energy to mitigate the risk of incidents that can result in death, injury, or significant property damage. It would be in the public interest to allow Atmos Energy to utilize the PRP to accelerate the replacement of this

infrastructure. As part of the PRP, the Commission has the opportunity to review the project details of the Company's Aldyl-A projects each year.

For these and the other reasons described in Case No. 2021-00214, Atmos Energy reflected the investment in the Aldyl-A projects listed in Exhibit K-3 as PRP capital spending rather than non-PRP capital spending. The Aldyl-A projects are included in this case for two reasons. First, their inclusion makes this case consistent with the Company's pending rate case. Second, the Commission found in Case 2020-00229 that it was appropriate to make substantive changes to the terms of the PRP tariff in the context of the PRP annual filing should the public interest warrant such a change.[3] Atmos Energy believes that the evidence presented herein and incorporated by reference supports such a change to the tariff.

Q. WHAT HAPPENS IF THE COMMISSION BELIEVES IT IS CONSISTENT WITH THE PUBLIC INTEREST TO DEFER ITS DECISION REGARDING THE INCLUSION OF ALDYL-A PROJECTS FOR DETERMINATION IN CASE NO. 2021-00214?

A. During the course of this case, Atmos Energy can prepare a calculation of the PRP revenue requirement and rates that excludes those projects from the implementation of rates October 1. Alternatively, the Commission can allow the rates, as presently filed, to go into effect and be trued up in subsequent filings once the general rate case has been fully adjudicated.

[3] Case No. 2020-00229, *Electronic Application of Atmos Energy Corporation for PRP Rider Rates* (Ky. PSC September 30, 2020), Order at 8.

IV. COORDINATION OF PRP & CASE NO. 2021-00214

Q. WHY DID THE COMPANY FILE A PRP IF THERE IS A RATE CASE PENDING BEFORE THE COMMISSION?

A. The Company's tariff allows the Company to file annually on or around August 1st of each year to "reflect the anticipated impact on the Company's revenue requirements of net plant additions related to bare-steel pipe replacement as offset by operations and maintenance expense reductions during the upcoming fiscal year ending each September as well as a balancing adjustment to reconcile collections with actual investment for the program year from two years prior." The tariff also provides that "[s]uch adjustment to the Rider will become effective with meter readings on and after the first billing cycle of October."

This Commission approved this timing and methodology for annual PRP filings to reflect the policy reasons behind these safety-related alternative rate recovery mechanisms as expressed by the Pipeline and Hazardous Material Safety Administration ("PHMSA")[4], the Federal Energy Regulatory Commission ("FERC")[5], and the National Association of Regulatory Utility Commissioners ("NARUC")[6]. The general rate case process and statutory procedural schedule do

[4] See Direct Testimony of T. Ryan Austin in Case No. 2021-00214, p. 12, lines 10-20 ("In December of 2011, in connection with the introduction of a White Paper on State Pipeline Infrastructure Replacement Programs sponsored by the PHMSA, the PHMSA Administrator promoted the public's interest in infrastructure replacement programs in a letter to the President of the National Association of Regulatory Utility Commissioners ("NARUC"), stating: '[Pipeline infrastructure replacement] programs play a vital role in protecting the public by ensuring the prompt rehabilitation, repair, or replacement of high-risk gas distribution infrastructure.'").

[5] See Direct Testimony of T. Ryan Austin in Case No. 2021-00214, p. 12-13 ("On page 1 of its Policy Statement, FERC stated that its intent is to 'provide greater certainty regarding the ability of interstate natural gas pipelines to recover the costs of modernizing their facilities and infrastructure to enhance the efficient and safe operations of their systems.'").

[6] See Direct Testimony of T. Ryan Austin in Case No. 2021-00214, p. 14, lines 1-6 (In response to PHMSA's letter, NARUC issued a resolution on July 24, 2013 encouraging state commissions to 'consider adopting

not meet these same policy objectives. Therefore, it is in the public interest to use the alternative rate mechanism of the PRP to achieve the policy objectives for which it was designed.

Q. PLEASE EXPLAIN FURTHER WHY NON-ADHERENCE TO THE SCHEDULE OUTLINED IN THE PRP TARIFF UNDERMINES THE POLICY GOALS OF THE ANNUAL MECHANISM.

A. Delay beyond October 1 introduces additional regulatory lag. Forward-looking treatment, as generally described in the context of rate of return regulation, entails forecasting cost of service components and implementing rates such that the timing of the Company's revenues collected from customers aligns with the timing of its cost of service. In allowing such treatment, regulators ensure that the rates customers are paying more closely align with the utility's cost of service and the value of investment provided during the same time period. Any material delay would result in significant under-recovery of the Company's PRP investments. This under recovery could only be addressed two years from this PRP filing as contemplated by the Company's tariff as part of the balancing adjustment, and layer that additional amount on top of any new rates approved by the Commission in that future docket.

V. <u>CONCLUSION</u>

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, at this time.

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alternative rate recovery mechanisms as necessary to accelerate the modernization, replacement and expansion of the nation's natural gas pipeline systems.'").

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

APPLICATION OF ATMOS ENERGY CORPORATION TO ESTABLISH PRP RIDER RATES FOR THE TWELVE MONTH PERIOD BEGINNING OCTOBER 1, 2021	))))	CASE NO. 2021-00304

CERTIFICATE AND AFFIDAVIT

The Affiant, Brannon C. Taylor, being duly sworn, deposes and states that the prepared testimony attached hereto and made a part hereof, constitutes the prepared direct testimony of this affiant in Case No. 2021-00304 and that if asked the questions propounded therein, this affiant would make the answers set forth in the attached prepared direct pre-filed testimony.

Brannon C. Taylor

STATE OF TENNESSEE

COUNTY OF DAVIDSON

SUBSCRIBED AND SWORN to before me by Brannon C. Taylor on this the 23 day of July, 2021.

BO ROBERTSON
STATE OF TENNESSEE NOTARY PUBLIC
RUTHERFORD COUNTY

Notary Public

My Commission Expires: 11/17/24

My Commission Expires
November 17, 2024

BEFORE THE PUBLIC SERVICE COMMISSION

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MONTH PERIOD BEGINNING	**)**	
OCTOBER 1, 2021	**)**	

DIRECT TESTIMONY OF DYLAN W. D'ASCENDIS

RATE OF RETURN

TABLE OF CONTENTS

I. INTRODUCTION AND PURPOSE

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Dylan W. D'Ascendis. My business address is 3000 Atrium Way, Suite 241, Mount Laurel, NJ 08054.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am a Partner at ScottMadden, Inc.

Q. PLEASE SUMMARIZE YOUR PROFESSIONAL EXPERIENCE AND EDUCATIONAL BACKGROUND.

A. I have offered expert testimony on behalf of investor-owned utilities before over 25 state regulatory commissions in the United States, the Federal Energy Regulatory Commission, the Alberta Utility Commission, and one American Arbitration Association panel on issues including, but not limited to, common equity cost rate, rate of return, valuation, capital structure, class cost of service, and rate design.

On behalf of the American Gas Association ("AGA"), I calculate the AGA Gas Index, which serves as the benchmark against which the performance of the American Gas Index Fund ("AGIF") is measured on a monthly basis. The AGA Gas Index and AGIF are a market capitalization weighted index and mutual fund, respectively, comprised of the common stocks of the publicly traded corporate members of the AGA.

I am a member of the Society of Utility and Regulatory Financial Analysts ("SURFA"). In 2011, I was awarded the professional designation "Certified Rate of Return Analyst" by SURFA, which is based on education, experience, and the successful completion of a comprehensive written examination.

I am also a member of the National Association of Certified Valuation Analysts ("NACVA") and was awarded the professional designation "Certified Valuation Analyst" by the NACVA in 2015.

I am a graduate of the University of Pennsylvania, where I received a Bachelor of Arts degree in Economic History. I have also received a Master of Business Administration with high honors and concentrations in Finance and International Business from Rutgers University.

The details of my educational background and expert witness appearances are shown in Appendix A.

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

A. In Atmos Energy Corporation's ("Atmos Energy" or the "Company") last Pipeline Replacement Program ("PRP") filing (Case No. 2020-00229), the Commission's Order stated:

> Therefore, the Commission finds that Atmos should revise its tariff language to reflect that the overall rate of return will be established in the annual PRP rate application. Given the condensed processing timeline of these proceedings, the Commission strongly recommends that Atmos file adequate testimony to support its proposed rate of return, including a reasonable ROE.

I am the Company's direct witness in the currently pending general rate case, Case No. 2021-00214, in which I provide a recommendation regarding Atmos Energy's return on common equity ("ROE") for its natural gas distribution operations in Kentucky. The purpose of my testimony in this PRP filing is to adopt that same recommendation (*i.e.,* 10.35%) for use in setting rates pursuant to the Company's PRP tariff.

Q. HAVE YOU PREPARED EXHIBITS IN SUPPORT OF YOUR RECOMMENDATION?

A. Yes. I have prepared Exhibit No. DWD-1, consisting of my direct testimony in Case No. 2021-00214 as well as Schedules DWD-1 through DWD-8, which were prepared by me or under my direction. I have also prepared Exhibit No. DWD-2, which summarizes the revenue stabilization mechanisms and alternative rate plans of the proxy companies used to derive my ROE recommendation in Exhibit No. DWD-1 (the "Utility Proxy Group").

Q. DO YOU ADOPT AND AFFIRM AS TRUE AND CORRECT YOUR DIRECT TESTIMONY IN CASE NO. 2021-00214 AS IF FULLY RESTATED HEREIN?

A. Yes, I do.

Q. WHAT IS YOUR RECOMMENDED ROE FOR ATMOS ENERGY IN THAT DIRECT TESTIMONY?

A. I recommend that the Commission authorize Atmos Energy the opportunity to earn an ROE of 10.35% on its PRP investment. The ratemaking capital structure and cost of long-term debt is sponsored by Company Witness Christian in Case No. 2021-00214. The overall rate of return is summarized on page 1 of Schedule DWD-1 and in Table 1 below:

Table 1: Summary of Recommended Weighted Average Cost of Capital

Type of Capital	Ratios	Cost Rate	Weighted Cost Rate
Long-Term Debt	42.77%	4.00%	1.71%
Short-Term Debt	0.18%	25.17%	0.05%
Common Equity	57.05%	10.35%	5.90%
Total	100.00%		7.66%

Q. WHY HAVE YOU RELIED ON THE SAME ANALYSES PRESENTED IN CASE NO. 2021-00214 FOR YOUR RECOMMENDED ROE IN THIS PROCEEDING?

A. The analytical models which I used to develop my recommended ROE in Case No. 2021-00214 were based on data as of May 28, 2021. Because the analytical models are based on relatively recent data and there have not been significant shifts in capital market conditions since May 28, 2021, those analytical models continue to represent reasonable estimates of the ROE for the Company's PRP investments.

II. USE OF ROE FOR SETTING RATES IN PIPELINE REPLACEMENT PROGRAM

Q. DO YOU HAVE ANY ADDITIONAL OBSERVATIONS RELATED TO THE ROE IN THIS PRP FILING?

A. Yes, I do. Because revenue stabilization mechanisms such as the PRP are common among the proxy companies, the 10.35% recommended ROE presented in Exhibit No. DWD-1 is reasonable and appropriate for the Company's PRP investments without adjustment.

Q. DOES THE COMPANY'S UTILIZATION OF THE PRP AFFECT ITS RELATIVE RISK TO YOUR UTILITY PROXY GROUP?

A. No. As noted in Exhibit No. DWD-1 at page 6, the *Hope* and *Bluefield* "Comparable Earnings" standard requires the allowed ROE to be commensurate with the returns on investments of similar risk. The cost of capital is a comparative exercise, so if the mechanism is common throughout the companies on which one bases their analyses, the comparative risk is zero, because any effect of the perceived reduced risk of the mechanism(s) by investors would be reflected in the market data of the proxy group. To the extent the proxy companies have mechanisms in place to address revenue shortfalls and cost recovery, the PRP only serves to make it more comparable to its peers and have no impact on comparative risk.

To that point, Exhibit No. DWD-2 provides a summary of rate stabilization mechanisms currently in effect at each gas utility subsidiary of the proxy group companies. As Exhibit No. DWD-2 demonstrates, substantially all the proxy companies have recovery mechanisms and/or annual formula-based rate mechanisms in place.[1]

Q. ARE YOU AWARE OF ANY STUDIES THAT HAVE ADDRESSED THE RELATIONSHIP BETWEEN RATE STABILIZATION MECHANISMS, GENERALLY, AND ROE?

A. Yes. I, along with Richard A. Michelfelder of Rutgers University, and my colleague at ScottMadden, Pauline M. Ahern, examined the relationship between

[1] Only two of the 23 proxy group operating companies do not have a capital recovery mechanism.

PRP-like mechanisms and ROE among electric, gas, and water utilities. Using the generalized consumption asset pricing model, also known as the PRPM, we found PRP-like mechanisms to have no statistically significant effect on investor perceived risk, and hence, ROE.[2]

Also, in March 2014, The Brattle Group (Brattle) published a study addressing the effect of revenue decoupling structures on the cost of capital for electric utilities.[3] In its report, which extended a prior analysis focused on natural gas distribution utilities, Brattle pointed out that although decoupling structures may affect revenues, net income still can vary. Brattle further noted that the distinction between diversifiable and non-diversifiable risk is important to equity investors, and the relationship between decoupling and ROE should be examined in that context. Further to that point, Brattle noted that although reductions in total risk may be important to bondholders, only reductions in non-diversifiable business risk would justify a reduction to the ROE. In November 2016, the Brattle study was updated based on data through the fourth quarter of 2015.[4]

Brattle's empirical analysis examined the relationship between decoupling and the After-Tax WACC for a group of electric utilities that had implemented decoupling structures in various jurisdictions throughout the United States. As with

[2] Richard A. Michelfelder, Pauline M. Ahern, Dylan W. D'Ascendis, *The Impact of Decoupling on The Cost of Capital of Public Utilities*, Energy Policy 130 (2019), at 311-319.

[3] The Brattle Group, *The Impact of Revenue Decoupling on the Cost of Capital for Electric Utilities: An Empirical Investigation*, Prepared for the Energy Foundation, March 20, 2014.

[4] Michael J. Vilbert, Joseph B. Wharton, Shirley Zhang and James Hall, *Effect on the Cost of Capital of Innovative Ratemaking that Relaxes the Linkage between Revenue and kWh Sales – An Updated Empirical Investigation*, November 2016.

Brattle's 2014 study, the updated study found no statistically significant link between the cost of capital and revenue decoupling structures.[5]

Q. WHAT ARE YOUR CONCLUSIONS REGARDING THE EFFECT OF THE COMPANY'S PRP ON ROE?

A. The presence of Atmos Energy's PRP rider does not affect the Company's ROE. Atmos Energy's PRP rider does not affect the ROE because it is similar to riders present in the operating companies of the Utility Proxy Group used to derive the ROE. Since this is the case, the lower risk of having a PRP (if any) would already be subsumed in the market data for the Utility Proxy Group.

Furthermore, several studies show that rate stabilization mechanisms like the PRP do not materially affect the investor-required return for those companies. Given that, the Company's PRP rider does not lower the comparative risk of the Company relative to the Utility Proxy Group and therefore, the ROE should not be adjusted due to the Company's PRP rider.

III. CONCLUSION

Q. WHAT IS YOUR RECOMMENDED ROE FOR ATMOS ENERGY'S PRP INVESTMENTS?

A. Given the indicated ROE range applicable to the Utility Proxy Group of 9.44% to 12.42% and the Company-specific ROE range of 9.58% to 12.66%, I conclude that an appropriate ROE for the Company's PRP investments is 10.35%.

[5] *Ibid.*

Q. IN YOUR OPINION, IS YOUR PROPOSED ROE OF 10.35% FAIR AND REASONABLE TO ATMOS ENERGY AND ITS CUSTOMERS?

A. Yes, it is.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

APPLICATION OF ATMOS ENERGY CORPORATION TO ESTABLISH PRP RIDER RATES FOR THE TWELVE MONTH PERIOD BEGINNING OCTOBER 1, 2021	))))	CASE NO. 2021-00304

CERTIFICATE AND AFFIDAVIT

The Affiant, Dylan W. D'Ascendis, being duly sworn, deposes and states that the prepared testimony attached hereto and made a part hereof, constitutes the prepared direct testimony of this affiant in Case No. 2021-00304 and that if asked the questions propounded therein, this affiant would make the answers set forth in the attached prepared direct pre-filed testimony.

Dylan W. D'Ascendis

STATE OF NEW JERSEY

COUNTY OF BURLINGTON

SUBSCRIBED AND SWORN to before me by Dylan W. D'Ascendis on this the 23 day of July, 2021.

Margaret A Clancy
Notary Public of New Jersey
My Commission Expires 6/9/2024

Margaret A Clancy
Notary Public

My Commission Expires: 6/9/24

BEFORE THE PUBLIC SERVICE COMMISSION

COMMONWEALTH OF KENTUCKY

APPLICATION OF ATMOS ENERGY	**)**	
	)	
CORPORATION FOR AN ADJUSTMENT	**)**	**Case No. 2021-00214**
	)	
OF RATES AND TARIFF MODIFICATIONS	**)**	

DIRECT TESTIMONY OF DYLAN W. D'ASCENDIS

RATE OF RETURN

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I. INTRODUCTION AND PURPOSE

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Dylan W. D'Ascendis. My business address is 3000 Atrium Way, Suite 241, Mount Laurel, NJ 08054.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am a Partner at ScottMadden, Inc.

Q. PLEASE SUMMARIZE YOUR PROFESSIONAL EXPERIENCE AND EDUCATIONAL BACKGROUND.

A. I have offered expert testimony on behalf of investor-owned utilities before over 25 state regulatory commissions in the United States, the Federal Energy Regulatory Commission, the Alberta Utility Commission, and one American Arbitration Association panel on issues including, but not limited to, common equity cost rate, rate of return, valuation, capital structure, class cost of service, and rate design.

On behalf of the American Gas Association ("AGA"), I calculate the AGA Gas Index, which serves as the benchmark against which the performance of the American Gas Index Fund ("AGIF") is measured on a monthly basis. The AGA Gas Index and AGIF are a market capitalization weighted index and mutual fund, respectively, comprised of the common stocks of the publicly traded corporate members of the AGA.

I am a member of the Society of Utility and Regulatory Financial Analysts ("SURFA"). In 2011, I was awarded the professional designation "Certified Rate of Return Analyst" by SURFA, which is based on education, experience, and the successful completion of a comprehensive written examination.

I am also a member of the National Association of Certified Valuation Analysts ("NACVA") and was awarded the professional designation "Certified Valuation Analyst" by the NACVA in 2015.

I am a graduate of the University of Pennsylvania, where I received a Bachelor of Arts degree in Economic History. I have also received a Master of Business Administration with high honors and concentrations in Finance and International Business from Rutgers University.

The details of my educational background and expert witness appearances are shown in Appendix A.

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

A. The purpose of my testimony is to present evidence and provide a recommendation regarding Atmos Energy Corporation's ("Atmos Energy" or the "Company") return on common equity ("ROE") for its natural gas distribution operations in Kentucky.

Q. HAVE YOU PREPARED AN EXHIBIT IN SUPPORT OF YOUR RECOMMENDATION?

A. Yes. I have prepared Exhibit No. DWD-1, consisting of Schedules DWD-1 through DWD-8, which were prepared by me or under my direction.

Q. WHAT IS YOUR RECOMMENDED ROE FOR ATMOS ENERGY?

A. I recommend that the Commission authorize Atmos Energy the opportunity to earn an ROE of 10.35% on its rate base. The ratemaking capital structure and cost of long-term debt is sponsored by Company Witness Christian. The overall rate of return is summarized on page 1 of Schedule DWD-1 and in Table 1 below:

Table 1: Summary of Recommended Weighted Average Cost of Capital

Type of Capital	Ratios	Cost Rate	Weighted Cost Rate
Long-Term Debt	42.77%	4.00%	1.71%
Short-Term Debt	0.18%	25.17%	0.05%
Common Equity	57.05%	10.35%	5.90%
Total	100.00%		7.66%

II. SUMMARY OF TESTIMONY

Q. PLEASE SUMMARIZE YOUR RECOMMENDED COMMON EQUITY COST RATE.

A. My recommended common equity cost rate of 10.35% is summarized on page 2 of Schedule DWD-1. I have assessed the market-based common equity cost rates of companies of relatively similar, but not necessarily identical, risk to Atmos Energy. Using companies of relatively comparable risk as proxies is consistent with the principles of fair rate of return established in the *Hope*[1] and *Bluefield*[2] decisions. No proxy group can be identical in risk to any single company. Consequently, there must be an evaluation of relative risk between the company and the proxy group to determine if it is appropriate to adjust the proxy group's indicated rate of return.

My recommendation results from applying several cost of common equity models, specifically the Discounted Cash Flow ("DCF") model, the Risk Premium Model ("RPM"), and the Capital Asset Pricing Model ("CAPM"), to the market data of a proxy group of seven natural gas distribution utilities ("Utility Proxy Group") whose selection criteria will be discussed below. In addition, I applied the DCF model, RPM, and CAPM to a proxy group of 48 domestic, non-price regulated

[1] *Federal Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591 (1944).
[2] *Bluefield Water Works Improvement Co. v. Public Serv. Comm'n*, 262 U.S. 679 (1922).

companies comparable in total risk to the Utility Proxy Group ("Non-Price Regulated Proxy Group"). The results derived from each are as follows:

Table 2: Summary of Common Equity Cost Rates

Discounted Cash Flow Model	9.44%
Risk Premium Model	10.96%
Capital Asset Pricing Model	11.75%
Cost of Equity Models Applied to Comparable Risk, Non-Price Regulated Companies	12.42%
Indicated Range	9.44% - 12.42%
Size Adjustment	0.20%
Credit Risk Adjustment	-0.10%
Flotation Cost Adjustment	0.04%
Recommended Range	9.58% - 12.66%
Recommended Cost of Common Equity	10.35%

The indicated range of common equity cost rates applicable to the Utility Proxy Group is between 9.44% and 12.42% before any Company-specific adjustments. As ROE models are based on market data, the indicated results of the models would reflect current and expected capital markets, including the impacts of COVID-19. I then adjusted the indicated range by 0.20% and negative 0.10% to reflect the Company's smaller relative size and lower credit risk, as compared to the Utility Proxy Group companies, and by 0.04% for flotation costs.[3] These adjustments resulted in a Company-specific indicated range of common equity cost rates between 9.58% and 12.66%.

The wide range of model results may reflect increased uncertainty related to the COVID-19 pandemic and unknown timeframe for when economic conditions

[3] *See* Section VII for a detailed discussion of my cost of common equity adjustments.

will normalize as vaccinations ramp up and the public health crises subsides. Because of this uncertainty, I recommend an ROE for the Company toward the lower end of my Company-specific range, specifically 10.35%.

Q. HOW IS THE REMAINDER OF YOUR DIRECT TESTIMONY ORGANIZED?

A. The remainder of my Direct Testimony is organized as follows:

- Section III – Provides a summary of financial theory and regulatory principles pertinent to the development of the cost of common equity;
- Section IV – Explains my selection of the Utility Proxy Group used to develop my Cost of Common Equity analytical results;
- Section V – Describes the analyses on which my Cost of Common Equity recommendation is based;
- Section VI – Summarizes my common equity cost rate before adjustments to reflect Company-specific factors;
- Section VII – Explains my adjustments to my common equity cost rate to reflect Company-specific factors; and
- Section VIII – Presents my conclusions.

III. GENERAL PRINCIPLES

Q. WHAT GENERAL PRINCIPLES HAVE YOU CONSIDERED IN ARRIVING AT YOUR RECOMMENDED COMMON EQUITY COST RATE OF 10.35%?

A. In unregulated industries, marketplace competition is the principal determinant of the price of products or services. For regulated public utilities, regulation must act

as a substitute for marketplace competition. Assuring that the utility can fulfill its obligations to the public, while providing safe and reliable service at all times, requires a level of earnings sufficient to maintain the integrity of presently invested capital. Sufficient earnings also permit the attraction of needed new capital at a reasonable cost, for which the utility must compete with other firms of comparable risk, consistent with the fair rate of return standards established by the U.S. Supreme Court in the previously cited *Hope* and *Bluefield* cases.

The U.S. Supreme Court affirmed the fair rate of return standards in *Hope*, when it stated:

> The rate-making process under the Act, *i.e.,* the fixing of 'just and reasonable' rates, involves a balancing of the investor and the consumer interests. Thus we stated in the Natural Gas Pipeline Co. case that 'regulation does not insure that the business shall produce net revenues.' 315 U.S. at page 590, 62 S.Ct. at page 745. But such considerations aside, the investor interest has a legitimate concern with the financial integrity of the company whose rates are being regulated. From the investor or company point of view it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock. Cf. Chicago & Grand Trunk R. Co. v. Wellman, 143 U.S. 339, 345, 346 12 S.Ct. 400,402. 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.[4]

Consistent with the findings in *Hope*, the Commission's decision in this proceeding should provide the Company with the opportunity to earn a return that is: (1) adequate to attract capital at reasonable cost and terms; (2) sufficient to

[4] *Hope*, 320 U.S. 591 (1944), at 603.

ensure their financial integrity; and (3) commensurate with returns on investments in enterprises having corresponding risks.

Also, the required return for a regulated public utility is established on a stand-alone basis, i.e., for the utility operating company at issue in a rate case. When funding is provided by a corporate entity to an operating division or business unit within the entity, the allowed return still must be sufficient to provide an incentive to allocate equity capital to the business unit rather than other internal or external investment opportunities. That is, the regulated operating division must compete for capital with all the operating divisions within the corporate entity, and with other, similarly situated companies. In that regard, investors value corporate entities on a sum-of-the-parts basis and expect each division within the parent company to provide an appropriate risk-adjusted return.

It therefore is important that the authorized ROE reflects the risks and prospects of the utility's operations and supports the utility's financial integrity from a stand-alone perspective as measured by their combined business and financial risks. Consequently, the ROE authorized in this proceeding should be sufficient to support the operational (*i.e.,* business risk) and financing (*i.e.,* financial risk) of the Company's Kentucky utility operations on a stand-alone basis.

Q. WITHIN THAT BROAD FRAMEWORK, HOW IS THE COST OF CAPITAL ESTIMATED IN REGULATORY PROCEEDINGS?

A. Regulated utilities primarily use common stock and long-term debt to finance their permanent property, plant, and equipment (*i.e*., rate base). The fair rate of return for a regulated utility is based on its weighted average cost of capital, in which, as

noted earlier, the costs of the individual sources of capital are weighted by their respective book values.

The cost of capital is the return investors require to make an investment in a firm. Investors will provide funds to a firm only if the return that they *expect* is equal to, or greater than, the return that they *require* to accept the risk of providing funds to the firm.

The cost of capital (that is, the combination of the costs of debt and equity) is based on the economic principle of "opportunity costs." Investing in any asset (whether debt or equity securities) represents a forgone opportunity to invest in alternative assets. For any investment to be sensible, its expected return must be at least equal to the return expected on alternative, comparable risk investment opportunities. Because investments with like risks should offer similar returns, the opportunity cost of an investment should equal the return available on an investment of comparable risk.

Whereas the cost of debt is contractually defined and can be directly observed as the interest rate or yield on debt securities, the cost of common equity must be estimated based on market data and various financial models. Because the cost of common equity is premised on opportunity costs, the models used to determine it are typically applied to a group of "comparable" or "proxy" companies.

In the end, the estimated cost of capital should reflect the return that investors require in light of the subject company's business and financial risks, and the returns available on comparable investments.

Q. IS THE AUTHORIZED RETURN SET IN REGULATORY PROCEEDINGS GUARANTEED?

A. No, it is not. Consistent with the *Hope* and *Bluefield* standards, the rate-setting process should provide the utility a reasonable opportunity to recover its return of, and return on, its prudently incurred investments, but it does not guarantee that return. While a utility may have control over some factors that affect the ability to earn its authorized return (*e.g.*, management performance, operating and maintenance expenses, etc.), there are several factors beyond a utility's control that affect its ability to earn its authorized return. Those may include factors such as weather, the economy, and the prevalence and magnitude of regulatory lag.

A. Business Risk

Q. PLEASE DEFINE BUSINESS RISK AND EXPLAIN WHY IT IS IMPORTANT FOR DETERMINING A FAIR RATE OF RETURN.

A. The investor-required return on common equity reflects investors' assessment of the total investment risk of the subject firm. Total investment risk is often discussed in the context of business and financial risk.

Business risk reflects the uncertainty associated with owning a company's common stock without the company's use of debt and/or preferred stock financing. One way of considering the distinction between business and financial risk is to view the former as the uncertainty of the expected earned return on common equity, assuming the firm is financed with no debt.

Examples of business risks generally faced by utilities include, but are not limited to, the regulatory environment, mandatory environmental compliance requirements, customer mix and concentration of customers, service territory

economic growth, market demand, risks and uncertainties of supply, operations, capital intensity, size, the degree of operating leverage, and the like, all of which have a direct bearing on earnings. Although analysts, including rating agencies, may categorize business risks individually, as a practical matter, such risks are interrelated and not wholly distinct from one another. Therefore, it is difficult to specifically and numerically quantify the effect of any individual risk on investors' required return, *i.e.*, the cost of capital. For determining an appropriate return on common equity, the relevant issue is where investors see the subject company as falling within a spectrum of risk. To the extent investors view a company as being exposed to high risk, the required return will increase, and vice versa.

For regulated utilities, business risks are both long-term and near-term in nature. Whereas near-term business risks are reflected in year-to-year variability in earnings and cash flow brought about by economic or regulatory factors, long-term business risks reflect the prospect of an impaired ability of investors to obtain both a fair rate of return on, and return of, their capital. Moreover, because utilities accept the obligation to provide safe, adequate and reliable service at all times (in exchange for a reasonable opportunity to earn a fair return on their investment), they generally do not have the option to delay, defer, or reject capital investments. Because those investments are capital-intensive, utilities generally do not have the option to avoid raising external funds during periods of capital market distress, if necessary.

Because utilities invest in long-lived assets, long-term business risks are of paramount concern to equity investors. That is, the risk of not recovering the return

on their investment extends far into the future. The timing and nature of events that may lead to losses, however, also are uncertain and, consequently, those risks and their implications for the required return on equity tend to be difficult to quantify. Regulatory commissions (like investors who commit their capital) must review a variety of quantitative and qualitative data and apply their reasoned judgment to determine how long-term risks weigh in their assessment of the market-required return on common equity.

B. Financial Risk

Q. PLEASE DEFINE FINANCIAL RISK AND EXPLAIN WHY IT IS IMPORTANT IN DETERMINING A FAIR RATE OF RETURN.

A. Financial risk is the additional risk created by the introduction of debt and preferred stock into the capital structure. The higher the proportion of debt and preferred stock in the capital structure, the higher the financial risk to common equity owners (*i.e.,* failure to receive dividends due to default or other covenants). Therefore, consistent with the basic financial principle of risk and return, common equity investors demand higher returns as compensation for bearing higher financial risk.

Q. CAN BOND AND CREDIT RATINGS BE A PROXY FOR A FIRM'S COMBINED BUSINESS AND FINANCIAL RISKS TO EQUITY OWNERS (*I.E.*, INVESTMENT RISK)?

A. Yes, similar bond ratings/issuer credit ratings reflect, and are representative of, similar combined business and financial risks (*i.e.*, total risk) faced by bond investors.[5] Although specific business or financial risks may differ between

[5] Risk distinctions within S&P's bond rating categories are recognized by a plus or minus, e.g., within the A category, an S&P rating can by at A+, A, or A-. Similarly, risk distinction for

companies, the same bond/credit rating indicates that the combined risks are roughly similar from a debtholder perspective. The caveat is that these debtholder risk measures do not translate directly to risks for common equity.

Q. DO RATING AGENCIES ACCOUNT FOR COMPANY SIZE IN THEIR BOND RATINGS?

A. No. Neither Standard & Poor's ("S&P") nor Moody's have minimum company size requirements for any given rating level. This means, all else equal, a relative size analysis must be conducted for equity investments in companies with similar bond ratings.

IV. ATMOS ENERGY'S KENTUCKY OPERATIONS AND THE UTILITY PROXY GROUP

Q. ARE YOU FAMILIAR WITH ATMOS ENERGY'S OPERATIONS?

A. Yes. Atmos Energy's Kentucky operations serve approximately 183,000 customers.[6] Atmos Energy's Kentucky gas operations are not publicly-traded as they comprise an operating division of Atmos Energy Corporation ("ATO" or the "Company"), which operates in eight states[7] and serves approximately 3.3 million gas[8] and is publicly-traded under symbol ATO.

Q. PLEASE EXPLAIN HOW YOU CHOSE THE COMPANIES IN THE UTILITY PROXY GROUP.

A. The companies selected for the Utility Proxy Group met the following criteria:

Moody's ratings are distinguished by numerical rating gradations, e.g., within the A category, a Moody's rating can be A1, A2 and A3.

6 Atmos Energy Corporation, 2020 SEC Form 10-K, at 4.

7 *Ibid.,* In addition to Kentucky, ATO also serves customers in Texas, Louisiana, Mississippi, Virginia, Colorado, Kansas, and Tennessee.

8 *Ibid.*

(i) They were included in the Natural Gas Utility Group of *Value Line's Standard Edition* (*Value Line*) (May 28, 2021);

(ii) They have 60% or greater of fiscal year 2020 total operating income derived from, and 60% or greater of fiscal year 2020 total assets attributable to, regulated gas distribution operations;

(iii) At the time of preparation of this testimony, they had not publicly announced that they were involved in any major merger or acquisition activity (*i.e.*, one publicly-traded utility merging with or acquiring another);

(iv) They have not cut or omitted their common dividends during the five years ended 2020 or through the time of preparation of this testimony;

(v) They have *Value Line* and Bloomberg Professional Services ("Bloomberg") adjusted betas;

(vi) They have positive *Value Line* five-year dividends per share ("DPS") growth rate projections; and

(vii) They have *Value Line*, Zacks, Yahoo! Finance, or Bloomberg consensus five-year earnings per share ("EPS") growth rate projections.

The following seven companies met these criteria: Atmos Energy Corporation, New Jersey Resources Corp., Northwest Natural Holding Company, One Gas, Inc., South Jersey Industries, Inc., Southwest Gas Holdings, Inc., and Spire, Inc.

Q. WHY IS IT NECESSARY TO DEVELOP A PROXY GROUP WHEN ESTIMATING THE ROE FOR THE COMPANY?

A. Because the Company is not publicly traded and does not have publicly traded equity securities, it is necessary to develop groups of publicly traded, comparable companies to serve as "proxies" for the Company. In addition to the analytical necessity of doing so, the use of proxy companies is consistent with the *Hope* and *Bluefield* comparable risk standards, as discussed above. I have selected two proxy

groups that, in my view, are fundamentally risk-comparable to the Company: a Utility Proxy Group and a Non-Price Regulated Proxy Group, which is comparable in total risk to the Utility Proxy Group.[9]

Even when proxy groups are carefully selected, it is common for analytical results to vary from company to company. Despite the care taken to ensure comparability, because no two companies are identical, market expectations regarding future risks and prospects will vary within the proxy group. It therefore is common for analytical results to reflect a seemingly wide range, even for a group of similarly situated companies. At issue is how to estimate the ROE from within that range. That determination will be best informed by employing a variety of sound analyses that necessarily must consider the sort of quantitative and qualitative information discussed throughout my Direct Testimony. Additionally, a relative risk analysis between the Company and the Utility Proxy Group must be made to determine whether or not explicit Company-specific adjustments need to be made to the Utility Proxy Group indicated results.

V. COMMON EQUITY COST RATE MODELS

Q. IS IT IMPORTANT THAT COST OF COMMON EQUITY MODELS BE MARKET BASED?

A. Yes. A public utility must compete for equity in capital markets along with all other companies of comparable risk, which includes non-utilities. The cost of common equity is thus determined based on equity market expectations for the returns of those comparable risk companies. If an individual investor is choosing to invest

[9] The development of the Non-Price Regulated Proxy Group is explained in more detail in Section V.

their capital among companies of comparable risk, they will choose a company providing a higher return over a company providing a lower return.

Q. ARE YOUR COST OF COMMON EQUITY MODELS MARKET BASED?

A. Yes. The DCF model uses market prices in developing the model's dividend yield component. The RPM uses bond ratings and expected bond yields that reflect the market's assessment of bond/credit risk. In addition, beta coefficients (β), which reflect the market/systematic risk component of equity risk premium, are derived from regression analyses of market prices. The Predictive Risk Premium Model ("PRPM") uses monthly market returns in addition to expectations of the risk-free rate. The CAPM is market based for many of the same reasons that the RPM is market based (*i.e.*, the use of expected bond yields and betas). Selection criteria for comparable risk non-price regulated companies are based on regression analyses of market prices and reflect the market's assessment of total risk.

Q. WHAT ANALYTICAL APPROACHES DID YOU USE TO DETERMINE THE COMPANY'S ROE?

A. As discussed earlier, I have relied on the DCF model, the RPM, and the CAPM, which I apply to the Utility Proxy Group described above. I also applied these same models to a Non-Price Regulated Proxy Group described later in this section.

I rely on these models because reasonable investors use a variety of tools and do not rely exclusively on a single source of information or single model. Moreover, the models on which I rely focus on different aspects of return requirements, and provide different insights to investors' views of risk and return. The DCF model, for example, estimates the investor-required return assuming a

constant expected dividend yield and growth rate in perpetuity, while Risk Premium-based methods (*i.e.,* the RPM and CAPM approaches) provide the ability to reflect investors' views of risk, future market returns, and the relationship between interest rates and the cost of common equity. Just as the use of market data for the Utility Proxy Group adds the reliability necessary to inform expert judgment in arriving at a recommended common equity cost rate, the use of multiple generally accepted common equity cost rate models also adds reliability and accuracy when arriving at a recommended common equity cost rate.

A. Discounted Cash Flow Model

Q. WHAT IS THE THEORETICAL BASIS OF THE DCF MODEL?

A. The theory underlying the DCF model is that the present value of an expected future stream of net cash flows during the investment holding period can be determined by discounting those cash flows at the cost of capital, or the investors' capitalization rate. DCF theory indicates that an investor buys a stock for an expected total return rate, which is derived from the cash flows received from dividends and market price appreciation. Mathematically, the dividend yield on market price plus a growth rate equals the capitalization rate; *i.e.*, the total common equity return rate expected by investors as shown below:

$$K_e = (D_0 (1+g))/P + g$$

where:

K_e = the required Return on Common Equity;
D_0 = the annualized Dividend Per Share;
P = the current stock price; and
g = the growth rate.

Q. WHICH VERSION OF THE DCF MODEL DID YOU USE?

A. I used the single-stage constant growth DCF model in my analyses.

Q. PLEASE DESCRIBE THE DIVIDEND YIELD YOU USED IN APPLYING THE CONSTANT GROWTH DCF MODEL.

A. The unadjusted dividend yields are based on the proxy companies' dividends as of May 28, 2021, divided by the average closing market price for the 60 trading days ended May 28, 2021.[10]

Q. PLEASE EXPLAIN YOUR ADJUSTMENT TO THE DIVIDEND YIELD.

A. Because dividends are paid periodically (*e.g.* quarterly), as opposed to continuously (daily), an adjustment must be made to the dividend yield. This is often referred to as the discrete, or the Gordon Periodic, version of the DCF model.

DCF theory calls for using the full growth rate, or D_1, in calculating the model's dividend yield component. Since the companies in the Utility Proxy Group increase their quarterly dividends at various times during the year, a reasonable assumption is to reflect one-half the annual dividend growth rate in the dividend yield component, or $D_{1/2}$. Because the dividend should be representative of the next 12-month period, this adjustment is a conservative approach that does not overstate the dividend yield. Therefore, the actual average dividend yields in Column 1, page 1 of Schedule DWD-2 have been adjusted upward to reflect one-half the average projected growth rate shown in Column 6.

[10] *See*, column 1, page 1 of Schedule DWD-2.

Q. PLEASE EXPLAIN THE BASIS FOR THE GROWTH RATES YOU APPLY TO THE UTILITY PROXY GROUP IN YOUR CONSTANT GROWTH DCF MODEL.

A. Investors are likely to rely on widely available financial information services, such as *Value Line*, Zacks, Yahoo! Finance, and Bloomberg. Investors realize that analysts have significant insight into the dynamics of the industries and individual companies they analyze, as well as companies' ability to effectively manage the effects of changing laws and regulations, and ever-changing economic and market conditions. For these reasons, I used analysts' five-year forecasts of EPS growth in my DCF analysis.

Over the long run, there can be no growth in DPS without growth in EPS. Security analysts' earnings expectations have a more significant influence on market prices than dividend expectations. Thus, using earnings growth rates in a DCF analysis provides a better match between investors' market price appreciation expectations and the growth rate component of the DCF.

Q. PLEASE SUMMARIZE THE CONSTANT GROWTH DCF MODEL RESULTS.

A. As shown on page 1 of Schedule DWD-2, for the Utility Proxy Group, the mean result of applying the single-stage DCF model is 9.57%, the median result is 9.30%, and the average of the two is 9.44%. In arriving at a conclusion for the constant growth DCF-indicated common equity cost rate for the Utility Proxy Group, I relied on an average of the mean and the median results of the DCF. This approach

considers all the proxy utilities' results, while mitigating the high and low outliers of those individual results.

B. The Risk Premium Model

Q. PLEASE DESCRIBE THE THEORETICAL BASIS OF THE RPM.

A. The RPM is based on the fundamental financial principle of risk and return; namely, that investors require greater returns for bearing greater risk. The RPM recognizes that common equity capital has greater investment risk than debt capital, as common equity shareholders are behind debt holders in any claim on a company's assets and earnings. As a result, investors require higher returns from common stocks than from bonds to compensate them for bearing the additional risk.

While it is possible to directly observe bond returns and yields, investors' required common equity returns cannot be directly determined or observed. According to RPM theory, one can estimate a common equity risk premium over bonds (either historically or prospectively) and use that premium to derive a cost rate of common equity. The cost of common equity equals the expected cost rate for long-term debt capital, plus a risk premium over that cost rate, to compensate common shareholders for the added risk of being unsecured and last-in-line for any claim on the corporation's assets and earnings upon liquidation.

Q. PLEASE EXPLAIN HOW YOU DERIVED YOUR INDICATED COST OF COMMON EQUITY BASED ON THE RPM.

A. To derive my indicated cost of common equity under the RPM, I used two risk premium methods. The first method was the PRPM and the second method was a risk premium model using a total market approach. The PRPM estimates the risk-

return relationship directly, while the total market approach indirectly derives a risk premium by using known metrics as a proxy for risk.

1. The Predictive Risk Premium Model

Q. PLEASE EXPLAIN THE PRPM.

A. The PRPM, published in the *Journal of Regulatory Economics,*[11] was developed from the work of Robert F. Engle, who shared the Nobel Prize in Economics in 2003 "for methods of analyzing economic time series with time-varying volatility ("ARCH")".[12] Engle found that volatility changes over time and is related from one period to the next, especially in financial markets. Engle discovered that volatility of prices and returns cluster over time and is therefore highly predictable and can be used to predict future levels of risk and risk premiums.

The PRPM estimates the risk-return relationship directly, as the predicted equity risk premium is generated by predicting volatility or risk. The PRPM is not based on an estimate of investor behavior, but rather on an evaluation of the results of that behavior (*i.e.*, the variance of historical equity risk premiums).

The inputs to the model are the historical returns on the common shares of each Utility Proxy Group company minus the historical monthly yield on long-term U.S. Treasury securities through May 2021. Using a generalized form of ARCH, known as GARCH, I calculated each Utility Proxy Group company's projected equity risk premium using Eviews© statistical software. When the GARCH model is applied to the historical return data, it produces a predicted GARCH variance

[11] Autoregressive conditional heteroscedasticity. See "A New Approach for Estimating the Equity Risk Premium for Public Utilities", Pauline M. Ahern, Frank J. Hanley and Richard A. Michelfelder, Ph.D. The Journal of Regulatory Economics (December 2011), 40:261-278.

[12] www.nobelprize.org.

series[13] and a GARCH coefficient[14]. Multiplying the predicted monthly variance by the GARCH coefficient and then annualizing it[15] produces the predicted annual equity risk premium. I then added the forecasted 30-year U.S. Treasury bond yield of 2.88%[16] to each company's PRPM-derived equity risk premium to arrive at an indicated cost of common equity. The 30-year U.S. Treasury bond yield is a consensus forecast derived from Blue Chip Financial Forecasts (*Blue Chip)*.[17] The mean PRPM indicated common equity cost rate for the Utility Proxy Group is 11.67%, the median is 11.19%, and the average of the two is 11.43%. Consistent with my reliance on the average of the median and mean results of the DCF models, I relied on the average of the mean and median results of the Utility Proxy Group PRPM to calculate a cost of common equity rate of 11.43%.

Q. PLEASE DESCRIBE YOUR SELECTION OF A RISK-FREE RATE OF RETURN.

A. As shown in Schedules DWD-3 and 4, the risk-free rate adopted for applications of the RPM and CAPM is 2.88%. This risk-free rate is based on the average of the *Blue Chip* consensus forecast of the expected yields on 30-year U.S. Treasury bonds for the six quarters ending with the third calendar quarter of 2022, and long-term projections for the years 2023 to 2027 and 2028 to 2032.

[13] Illustrated on Columns 1 and 2, page 2 of Schedule DWD-3.
[14] Illustrated on Column 4, page 2 of Schedule DWD-3.
[15] Annualized Return = (1 + Monthly Return) ^12 - 1
[16] See Column 6, page 2 of Schedule DWD-3.
[17] *Blue Chip Financial Forecasts*, June 1, 2021, at page 2 and 14.

Q. WHY DO YOU USE THE PROJECTED 30-YEAR TREASURY YIELD IN YOUR ANALYSES?

A. The yield on long-term U.S. Treasury bonds is almost risk-free and its term is consistent with the long-term cost of capital to public utilities measured by the yields on Moody's A2-rated public utility bonds; the long-term investment horizon inherent in utilities' common stocks; and the long-term life of the jurisdictional rate base to which the allowed fair rate of return (*i.e.*, cost of capital) will be applied. In contrast, short-term U.S. Treasury yields are more volatile and largely a function of Federal Reserve monetary policy.

2. The Total Market Risk Premium Approach

Q. PLEASE EXPLAIN THE TOTAL MARKET APPROACH RPM.

A. The total market approach RPM adds a prospective public utility bond yield to an average of: 1) an equity risk premium that is derived from a beta-adjusted total market equity risk premium, 2) an equity risk premium based on the S&P Utilities Index, and 3) an equity risk premium based on authorized ROEs for gas distribution utilities.

Q. PLEASE EXPLAIN THE BASIS OF THE EXPECTED BOND YIELD OF 3.99% APPLICABLE TO THE UTILITY PROXY GROUP.

A. The first step in the total market approach RPM analysis is to determine the expected bond yield. Because both ratemaking and the cost of capital, including common equity cost rate, are prospective in nature, a prospective yield on similarly-rated long-term debt is essential. I relied on a consensus forecast of about 50 economists of the expected yield on Aaa-rated corporate bonds for the six calendar quarters ending with the third calendar quarter of 2022, and *Blue Chip's* long-term

projections for 2023 to 2027, and 2028 to 2032. As shown on line 1, page 3 of Schedule DWD-3, the average expected yield on Moody's Aaa-rated corporate bonds is 3.56%. To derive an expected yield on Moody's A2-rated public utility bonds, I made an upward adjustment of 0.39%, which represents a recent spread between Aaa-rated corporate bonds and A2-rated public utility bonds, in order to adjust the expected Aaa-rated corporate bond yield to an equivalent A2-rated public utility bond yield.[18] Adding that recent 0.39% spread to the expected Aaa-rated corporate bond yield of 3.56% results in an expected A2-rated public utility bond yield of 3.95%.

I then reviewed the average credit rating for the Utility Proxy Group from Moody's to determine if an adjustment to the estimated A2-rated public utility bond was necessary. Since the Utility Proxy Group's average Moody's long-term issuer rating is A2/A3, another adjustment to the expected A2-rated public utility bond is needed to reflect the difference in bond ratings. An upward adjustment of 0.04%, which represents one-sixth of a recent spread between A2-rated and Baa2-rated public utility bond yields, is necessary to make the A2 prospective bond yield applicable to an A2/A3-rated public utility bond.[19] Adding the 0.04% to the 3.96% prospective A2-rated public utility bond yield results in a 3.99% expected bond yield applicable to the Utility Proxy Group.

[18] As shown on line 2 and explained in note 2, page 3 of Schedule DWD-3.

[19] As shown on line 4 and explained in note 3, page 3 of Schedule DWD-3. Moody's does not provide public utility bond yields for A2/A3-rated bonds. As such, it was necessary to estimate the difference between A2-rated and A2/A3-rated public utility bonds. Because there are three steps between Baa2 and A2 (Baa2 to Baa1, Baa1 to A3, and A3 to A2) I assumed an adjustment of one-sixth of the difference between the A2-rated and Baa2-rated public utility bond yield was appropriate.

Table 3: Summary of the Calculation of the Utility Proxy Group Projected Bond Yield[20]

Prospective Yield on Moody's Aaa-Rated Corporate Bonds (*Blue Chip)*	3.56%
Adjustment to Reflect Yield Spread Between Moody's Aaa-Rated Corporate Bonds and Moody's A2-Rated Utility Bonds	0.39%
Adjustment to Reflect the Utility Proxy Group's Average Moody's Bond Rating of A2/A3	0.04%
Prospective Bond Yield Applicable to the Utility Proxy Group	3.99%

To develop the indicated ROE using the total market approach RPM, this prospective bond yield is then added to the average of the three different equity risk premiums described below.

a. The Beta-Derived Risk Premium

Q. PLEASE EXPLAIN HOW THE BETA-DERIVED EQUITY RISK PREMIUM IS DETERMINED.

A. The components of the beta-derived risk premium model are: 1) an expected market equity risk premium over corporate bonds, and 2) the beta coefficient. The derivation of the beta-derived equity risk premium that I applied to the Utility Proxy Group is shown on lines 1 through 9, page 8 of Schedule DWD-3. The total beta-derived equity risk premium I applied is based on an average of three historical market data-based equity risk premiums, two *Value Line*-based equity risk premiums, and a Bloomberg-based equity risk premium. Each of these is described below.

[20] As shown on page 3 of Schedule DWD-3.

Q. HOW DID YOU DERIVE A MARKET EQUITY RISK PREMIUM BASED ON LONG-TERM HISTORICAL DATA?

A. To derive a historical market equity risk premium, I used the most recent holding period returns for the large company common stocks from the Stocks, Bonds, Bills, and Inflation (SBBI) Yearbook 2021 (SBBI - 2021)[21] less the average historical yield on Moody's Aaa/Aa-rated corporate bonds for the period 1928 to 2020. Using holding period returns over a very long time is appropriate because it is consistent with the long-term investment horizon presumed by investing in a going concern, *i.e.*, a company expected to operate in perpetuity.

SBBI's long-term arithmetic mean monthly total return rate on large company common stocks was 11.94%, and the long-term arithmetic mean monthly yield on Moody's Aaa/Aa-rated corporate bonds was 6.02%.[22] As shown on line 1, page 8 of Schedule DWD-3, subtracting the mean monthly bond yield from the total return on large company stocks results in a long-term historical equity risk premium of 5.92%.

I used the arithmetic mean monthly total return rates for the large company stocks and yields (income returns) for the Moody's Aaa/Aa corporate bonds, because they are appropriate for the purpose of estimating the cost of capital as noted in SBBI - 2021.[23] Using the arithmetic mean return rates and yields is appropriate because historical total returns and equity risk premiums provide insight into the variance and standard deviation of returns needed by investors in

[21] SBBI Appendix A Tables: Morningstar Stocks, Bonds, Bills, & Inflation 1926-2020.
[22] As explained in note 1, page 9 of Schedule DWD-3.
[23] SBBI - 2021, at 10-22 and 10-23.

estimating future risk when making a current investment. If investors relied on the geometric mean of historical equity risk premiums, they would have no insight into the potential variance of future returns, because the geometric mean relates the change over many periods to a constant rate of change, thereby obviating the year-to-year fluctuations, or variance, which is critical to risk analysis.

Q. PLEASE EXPLAIN THE DERIVATION OF THE REGRESSION-BASED MARKET EQUITY RISK PREMIUM.

A. To derive the regression-based market equity risk premium of 8.69% shown on line 2, page 8 of Schedule DWD-3, I used the same monthly annualized total returns on large company common stocks relative to the monthly annualized yields on Moody's Aaa/Aa-rated corporate bonds as mentioned above. I modeled the relationship between interest rates and the market equity risk premium using the observed monthly market equity risk premium as the dependent variable, and the monthly yield on Moody's Aaa/Aa-rated corporate bonds as the independent variable. I then used a linear Ordinary Least Squares ("OLS") regression, in which the market equity risk premium is expressed as a function of the Moody's Aaa/Aa-rated corporate bonds yield:

$$RP = \alpha + \beta\ (R_{Aaa/Aa})$$

Q. PLEASE EXPLAIN THE DERIVATION OF THE PRPM EQUITY RISK PREMIUM.

A. I used the same PRPM approach described above to the PRPM equity risk premium. The inputs to the model are the historical monthly returns on large company common stocks minus the monthly yields on Moody's Aaa/Aa-rated corporate

bonds during the period from January 1928 through May 2021.[24] Using the previously discussed generalized form of ARCH, known as GARCH, the projected equity risk premium is determined using Eviews© statistical software. The resulting PRPM predicted a market equity risk premium of 9.02%.[25]

Q. PLEASE EXPLAIN THE DERIVATION OF A PROJECTED EQUITY RISK PREMIUM BASED ON *VALUE LINE* DATA FOR YOUR RPM ANALYSIS.

A. As noted above, because both ratemaking and the cost of capital are prospective, a prospective market equity risk premium is needed. The derivation of the forecasted or prospective market equity risk premium can be found in note 4, page 9 of Schedule DWD-3. Consistent with my calculation of the dividend yield component in my DCF analysis, this prospective market equity risk premium is derived from an average of the three- to five-year median market price appreciation potential by *Value Line* for the 13 weeks ended May 28, 2021, plus an average of the median estimated dividend yield for the common stocks of the 1,700 firms covered in *Value Line*'s *Standard Edition*.[26]

The average median expected price appreciation is 28%, which translates to a 6.37% annual appreciation, and, when added to the average of *Value Line's* median expected dividend yields of 1.79%, equates to a forecasted annual total return rate on the market of 8.16%. The forecasted Moody's Aaa-rated corporate bond yield of 3.56% is deducted from the total market return of 8.16%, resulting in an equity risk premium of 4.60%, as shown on line 4, page 8 of Schedule DWD-3.

[24] Data from January 1928 to December 2020 is from SBBI - 2021. Data from January 2021 to May 2021 is from Bloomberg.
[25] Shown on line 3, page 8 of Schedule DWD-3.
[26] As explained in detail in note 1, page 2 of Schedule DWD-4.

Q. PLEASE EXPLAIN THE DERIVATION OF AN EQUITY RISK PREMIUM BASED ON THE S&P 500 COMPANIES.

A. Using data from *Value Line*, I calculated an expected total return on the S&P 500 companies using expected dividend yields and long-term growth estimates as a proxy for capital appreciation. The expected total return for the S&P 500 is 14.32%. Subtracting the prospective yield on Moody's Aaa-rated corporate bonds of 3.56% results in an 10.76% projected equity risk premium.

Q. PLEASE EXPLAIN THE DERIVATION OF AN EQUITY RISK PREMIUM BASED ON BLOOMBERG DATA.

A. Using data from Bloomberg, I calculated an expected total return on the S&P 500 using expected dividend yields and long-term growth estimates as a proxy for capital appreciation, identical to the method described above. The expected total return for the S&P 500 is 16.34%. Subtracting the prospective yield on Moody's Aaa-rated corporate bonds of 3.56% results in a 12.78% projected equity risk premium.

Q. WHAT IS YOUR CONCLUSION OF A BETA-DERIVED EQUITY RISK PREMIUM FOR USE IN YOUR RPM ANALYSIS?

A. I gave equal weight to all six equity risk premiums based on each source - historical, *Value Line*, and Bloomberg - in arriving at a 8.63% equity risk premium.

Table 4: Summary of the Calculation of the Equity Risk Premium Using Total Market Returns[27]

Historical Spread Between Total Returns of Large Stocks and Aaa and Aa2-Rated Corporate Bond Yields (1928 – 2020)	5.92%
Regression Analysis on Historical Data	8.69%
PRPM Analysis on Historical Data	9.02%
Prospective Equity Risk Premium using Total Market Returns from *Value Line* Summary & Index less Projected Aaa Corporate Bond Yields	4.60%
Prospective Equity Risk Premium using Measures of Capital Appreciation and Income Returns from *Value Line* for the S&P 500 less Projected Aaa Corporate Bond Yields	10.76%
Prospective Equity Risk Premium using Measures of Capital Appreciation and Income Returns from Bloomberg Professional Services for the S&P 500 less Projected Aaa Corporate Bond Yields	12.78%
Average	8.63%

After calculating the average market equity risk premium of 8.63%, I adjusted it by the beta coefficient to account for the risk of the Utility Proxy Group. As discussed below, the beta coefficient is a meaningful measure of prospective relative risk to the market as a whole, and is a logical way to allocate a company's, or proxy group's, share of the market's total equity risk premium relative to corporate bond yields. As shown on page 1 of Schedule DWD-4, the average of the mean and median beta coefficient for the Utility Proxy Group is 0.93. Multiplying the 0.93 average by the market equity risk premium of 8.63% results in a beta-adjusted equity risk premium for the Utility Proxy Group of 8.03%.

[27] As shown on page 8 of Schedule DWD-3.

b. The S&P Utility Index Derived Risk Premium

Q. HOW DID YOU DERIVE THE EQUITY RISK PREMIUM BASED ON THE S&P UTILITY INDEX AND MOODY'S A-RATED PUBLIC UTILITY BONDS?

A. I estimated three equity risk premiums based on S&P Utility Index holding period returns, and two equity risk premiums based on the expected returns of the S&P Utilities Index, using *Value Line* and Bloomberg data, respectively. Turning first to the S&P Utility Index holding period returns, I derived a long-term monthly arithmetic mean equity risk premium between the S&P Utility Index total returns of 10.65%, and monthly Moody's A-rated public utility bond yields of 6.49% from 1928 to 2020, to arrive at an equity risk premium of 4.16%.[28] I then used the same historical data to derive an equity risk premium of 6.37% based on a regression of the monthly equity risk premiums. The final S&P Utility Index holding period equity risk premium involved applying the PRPM using the historical monthly equity risk premiums from January 1928 to May 2021 to arrive at a PRPM-derived equity risk premium of 5.41% for the S&P Utility Index.

I then derived expected total returns on the S&P Utilities Index of 11.40% and 9.77% using data from *Value Line* and Bloomberg, respectively, and subtracted the prospective Moody's A2-rated public utility bond yield of 3.95%[29], which resulted in equity risk premiums of 7.45% and 5.82%, respectively. As with the market equity risk premiums, I averaged each risk premium based on each source

[28] As shown on line 1, page 12 of Schedule DWD-3.
[29] Derived on line 3, page 3 of Schedule DWD-3.

(*i.e.*, historical, *Value Line*, and Bloomberg) to arrive at my utility-specific equity risk premium of 5.84%.

Table 5: Summary of the Calculation of the Equity Risk Premium Using S&P Utility Index Holding Returns[30]

Historical Spread Between Total Returns of the S&P Utilities Index and A2-Rated Utility Bond Yields (1928 – 2020)	4.16%
Regression Analysis on Historical Data	6.37%
PRPM Analysis on Historical Data	5.41%
Prospective Equity Risk Premium using Measures of Capital Appreciation and Income Returns from *Value Line* for the S&P Utilities Index less Projected A2 Utility Bond Yields	7.45%
Prospective Equity Risk Premium using Measures of Capital Appreciation and Income Returns from Bloomberg Professional Services for the S&P Utilities Index less Projected A2 Utility Bond Yields	5.82%
Average	5.84%

c. Authorized Return-Derived Equity Risk Premium

Q. HOW DID YOU DERIVE AN EQUITY RISK PREMIUM OF 5.64% BASED ON AUTHORIZED ROES FOR GAS DISTRIBUTION UTILITIES?

A. The equity risk premium of 5.64% shown on line 3, page 7 of Schedule DWD-3 is the result of a regression analysis based on regulatory awarded ROEs related to the yields on Moody's A-rated public utility bonds. That analysis is shown on page 13 of Schedule DWD-3 which contains the graphical results of a regression analysis of 800 rate cases for gas distribution utilities which were fully litigated during the period from January 1, 1980 through May 28, 2021. It shows the implicit equity risk premium relative to the yields on A-rated public utility bonds immediately prior to the issuance of each regulatory decision. It is readily discernible that there is an inverse relationship between the yield on A-rated public utility bonds and equity risk premiums. In other words, as interest rates decline, the equity risk premium

[30] As shown on page 12 of Schedule DWD-3.

rises and vice versa, a result consistent with financial literature on the subject.[31] I used the regression results to estimate the equity risk premium applicable to the projected yield on Moody's A2-rated public utility bonds of 3.95%. Given the expected A-rated utility bond yield of 3.95%, it can be calculated that the indicated equity risk premium applicable to that bond yield is 5.64%, which is shown on line 3, page 7 of Schedule DWD-3.

Q. WHAT IS YOUR CONCLUSION OF AN EQUITY RISK PREMIUM FOR USE IN YOUR TOTAL MARKET APPROACH RPM ANALYSIS?

A. The equity risk premium I apply to the Utility Proxy Group is 6.50%, which is the average of the beta-adjusted equity risk premium for the Utility Proxy Group, the S&P Utilities Index, and the authorized return utility equity risk premiums of 8.03%, 5.84%, and 5.64%, respectively.[32]

Q. WHAT IS THE INDICATED RPM COMMON EQUITY COST RATE BASED ON THE TOTAL MARKET APPROACH?

A. As shown on line 7, page 3 of Schedule DWD-3, I calculated a common equity cost rate of 10.49% for the Utility Proxy Group based on the total market approach RPM.

Table 6: Summary of the Total Market Return Risk Premium Model[33]

Prospective Moody's A2/A3-Rated Utility Bond Applicable to the Utility Proxy Group	3.99%
Prospective Equity Risk Premium	6.50%
Indicated Cost of Common Equity	10.49%

[31] *See*, *e.g.*, Robert S. Harris and Felicia C. Marston, *The Market Risk Premium: Expectational Estimates Using Analysts' Forecasts*, Journal of Applied Finance, Vol. 11, No. 1, 2001, at pages 11 to 12; Eugene F. Brigham, Dilip K. Shome, and Steve R. Vinson, *The Risk Premium Approach to Measuring a Utility's Cost of Equity*, Financial Management, Spring 1985, at pages 33 to 45.

[32] As shown on page 7 of Schedule DWD-3.

[33] As shown on page 3 of Schedule DWD-3.

Q. WHAT ARE THE RESULTS OF YOUR APPLICATION OF THE PRPM AND THE TOTAL MARKET APPROACH RPM?

A. As shown on page 1 of Schedule DWD-3, the indicated RPM-derived common equity cost rate is 10.96%, which gives equal weight to the PRPM (11.43%) and the adjusted-market approach results (10.49%).

C. The Capital Asset Pricing Model

Q. PLEASE EXPLAIN THE THEORETICAL BASIS OF THE CAPM.

A. CAPM theory defines risk as the co-variability of a security's returns with the market's returns as measured by the beta coefficient (β). A beta coefficient less than 1.0 indicates lower variability than the market as a whole, while a beta coefficient greater than 1.0 indicates greater variability than the market.

The CAPM assumes that all non-market or unsystematic risk can be eliminated through diversification. The risk that cannot be eliminated through diversification is called market, or systematic, risk. In addition, the CAPM presumes that investors only require compensation for systematic risk, which is the result of macroeconomic and other events that affect the returns on all assets. The model is applied by adding a risk-free rate of return to a market risk premium, which is adjusted proportionately to reflect the systematic risk of the individual security relative to the total market as measured by the beta coefficient. The traditional CAPM model is expressed as:

$$R_s = R_f + \beta (R_m - R_f)$$

Where: R_s = Return rate on the common stock

R_f = Risk-free rate of return

R_m = Return rate on the market as a whole

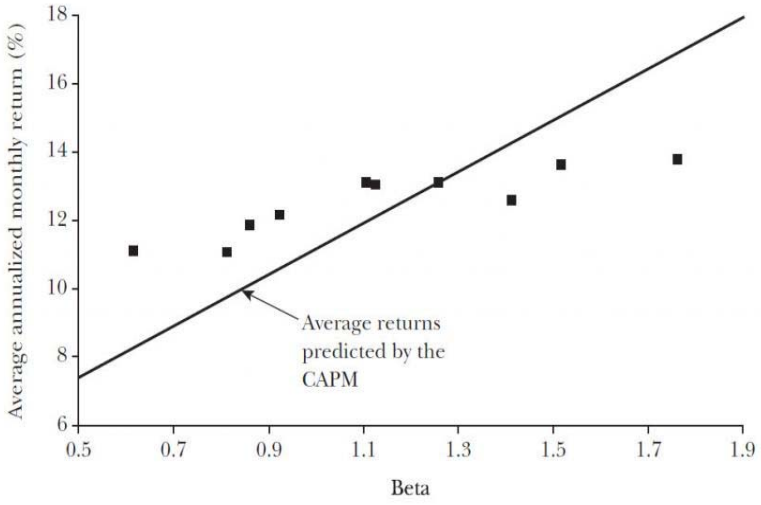
β = Adjusted beta coefficient (volatility of the security relative to the market as a whole)

Numerous tests of the CAPM have measured the extent to which security returns and beta coefficients are related as predicted by the CAPM, confirming its validity. The empirical CAPM ("ECAPM") reflects the reality that while the results of these tests support the notion that the beta coefficient is related to security returns, the empirical Security Market Line ("SML") described by the CAPM formula is not as steeply sloped as the predicted SML.[34]

The ECAPM reflects this empirical reality. Fama and French clearly state regarding Figure 2, below, that "[t]he returns on the low beta portfolios are too high, and the returns on the high beta portfolios are too low."[35]

Figure 2 http://pubs.aeaweb.org/doi/pdfplus/10.1257/0895330042162430

Average Annualized Monthly Return versus Beta for Value Weight Portfolios Formed on Prior Beta, 1928–2003



[34] Roger A. Morin, New Regulatory Finance (Public Utility Reports, Inc., 2006), at 175. (Morin)

[35] Eugene F. Fama and Kenneth R. French, "The Capital Asset Pricing Model: Theory and Evidence", *Journal of Economic Perspectives*, Vol. 18, No. 3, Summer 2004 at 33 (Fama & French).

In addition, Morin observes that while the results of these tests support the notion that beta is related to security returns, the empirical SML described by the CAPM formula is not as steeply sloped as the predicted SML. Morin states:

> With few exceptions, the empirical studies agree that … low-beta securities earn returns somewhat higher than the CAPM would predict, and high-beta securities earn less than predicted.[36]
>
> * * *
>
> Therefore, the empirical evidence suggests that the expected return on a security is related to its risk by the following approximation:
>
> $$K = R_F + x\,\beta(R_M - R_F) + (1-x)\,\beta(R_M - R_F)$$
>
> where x is a fraction to be determined empirically. The value of x that best explains the observed relationship [is] Return = 0.0829 + 0.0520 β is between 0.25 and 0.30. If x = 0.25, the equation becomes:
>
> $$K = R_F + 0.25(R_M - R_F) + 0.75\,\beta(R_M - R_F)$$[37]

Fama and French provide similar support for the ECAPM when they state:

> The early tests firmly reject the Sharpe-Lintner version of the CAPM. There is a positive relation between beta and average return, but it is too 'flat.'… The regressions consistently find that the intercept is greater than the average risk-free rate… and the coefficient on beta is less than the average excess market return… This is true in the early tests… as well as in more recent cross-section regressions tests, like Fama and French (1992).[38]

Finally, Fama and French further note:

> Confirming earlier evidence, the relation between beta and average return for the ten portfolios is much flatter than the Sharpe-Linter CAPM predicts. The returns on low beta portfolios are too high, and the returns on the high beta portfolios are too low. For example, the predicted return on the portfolio with the lowest beta is 8.3 percent per year; the actual return as 11.1 percent. The predicted return on the portfolio with the t beta is 16.8 percent per year; the actual is 13.7 percent.[39]

[36] Morin, at 175.
[37] Morin, at 190.
[38] Fama & French, at 32.
[39] *Ibid.,* at 33.

Clearly, the justification from Morin, Fama, and French, along with their reviews of other academic research on the CAPM, validate the use of the ECAPM. In view of theory and practical research, I have applied both the traditional CAPM and the ECAPM to the companies in the Utility Proxy Group and averaged the results.

Q. WHAT BETA COEFFICIENTS DID YOU USE IN YOUR CAPM ANALYSIS?

A. For the beta coefficients in my CAPM analysis, I considered two sources: *Value Line* and Bloomberg Professional Services. While both of those services adjust their calculated (or "raw") beta coefficients to reflect the tendency of the beta coefficient to regress to the market mean of 1.00, *Value Line* calculates the beta coefficient over a five-year period, while Bloomberg calculates it over a two-year period.

Q. PLEASE DESCRIBE YOUR SELECTION OF A RISK-FREE RATE OF RETURN.

A. As discussed previously, the risk-free rate adopted for both applications of the CAPM is 2.88%. This risk-free rate is based on the average of the *Blue Chip* consensus forecast of the expected yields on 30-year U.S. Treasury bonds for the six quarters ending with the third calendar quarter of 2022, and long-term projections for the years 2023 to 2027 and 2028 to 2032.

Q. PLEASE EXPLAIN THE ESTIMATION OF THE EXPECTED RISK PREMIUM FOR THE MARKET USED IN YOUR CAPM ANALYSES.

A. The basis of the market risk premium is explained in detail in note 1 on Schedule DWD-4. As discussed above, the market risk premium is derived from an average of three historical data-based market risk premiums, two *Value Line* data-based market risk premiums, and one Bloomberg data-based market risk premium.

The long-term income return on U.S. Government securities of 5.05% was deducted from the SBBI - 2021 monthly historical total market return of 12.20%, which results in an historical market equity risk premium of 7.15%.[40] I applied a linear OLS regression to the monthly annualized historical returns on the S&P 500 relative to historical yields on long-term U.S. Government securities from SBBI - 2021. That regression analysis yielded a market equity risk premium of 9.39%. The PRPM market equity risk premium is 10.04% and is derived using the PRPM relative to the yields on long-term U.S. Treasury securities from January 1926 through May 2021.

The *Value Line*-derived forecasted total market equity risk premium is derived by deducting the forecasted risk-free rate of 2.88%, discussed above, from the *Value Line* projected total annual market return of 8.16%, resulting in a forecasted total market equity risk premium of 5.28%. The S&P 500 projected market equity risk premium using *Value Line* data is derived by subtracting the projected risk-free rate of 2.88% from the projected total return of the S&P 500 of 14.32%. The resulting market equity risk premium is 11.44%.

[40] SBBI - 2021, at Appendix A-1 (1) through A-1 (3) and Appendix A-7 (19) through A-7 (21).

The S&P 500 projected market equity risk premium using Bloomberg data is derived by subtracting the projected risk-free rate of 2.88% from the projected total return of the S&P 500 of 16.34%. The resulting market equity risk premium is 13.46%. These six measures, when averaged, result in an average total market equity risk premium of 9.46%.

Table 7: Summary of the Calculation of the Market Risk Premium for Use in the CAPM[41]

Historical Spread Between Total Returns of Large Stocks and Long-Term Government Bond Yields (1926 – 2020)	7.15%
Regression Analysis on Historical Data	9.39%
PRPM Analysis on Historical Data	10.04%
Prospective Equity Risk Premium using Total Market Returns from *Value Line* Summary & Index less Projected 30-Year Treasury Bond Yields	5.28%
Prospective Equity Risk Premium using Measures of Capital Appreciation and Income Returns from *Value Line* for the S&P 500 less Projected 30-Year Treasury Bond Yields	11.44%
Prospective Equity Risk Premium using Measures of Capital Appreciation and Income Returns from Bloomberg Professional Services for the S&P 500 less Projected 30-Year Treasury Bond Yields	13.46%
Average	9.46%

Q. WHAT ARE THE RESULTS OF YOUR APPLICATION OF THE TRADITIONAL AND EMPIRICAL CAPM TO THE UTILITY PROXY GROUP?

A. As shown on page 1 of Schedule DWD-4, the mean result of my CAPM/ECAPM analyses is 11.81%, the median is 11.68%, and the average of the two is 11.75%. Consistent with my reliance on the average of mean and median DCF results discussed above, the indicated common equity cost rate using the CAPM/ECAPM is 11.75%.

[41] As shown on page 2 of Schedule DWD-4.

D. Common Equity Cost Rates for a Proxy Group of Domestic, Non-Price Regulated Companies Based on the DCF, RPM, and CAPM

Q. WHY DO YOU ALSO CONSIDER A PROXY GROUP OF DOMESTIC, NON-PRICE REGULATED COMPANIES?

A. In the *Hope* and *Bluefield* cases, the U.S. Supreme Court did not specify that comparable risk companies had to be utilities. Since the purpose of rate regulation is to be a substitute for marketplace competition, non-price regulated firms operating in the competitive marketplace make an excellent proxy group if they are comparable in total risk to the Utility Proxy Group being used to estimate the cost of common equity. The selection of such domestic, non-price regulated competitive firms theoretically and empirically results in a proxy group which is comparable in total risk to the Utility Proxy Group, since all of these companies compete for capital in the exact same markets.

Q. HOW DID YOU SELECT NON-PRICE REGULATED COMPANIES THAT ARE COMPARABLE IN TOTAL RISK TO THE UTILITY PROXY GROUP?

A. In order to select a proxy group of domestic, non-price regulated companies similar in total risk to the Utility Proxy Group, I relied on the beta coefficients and related statistics derived from *Value Line* regression analyses of weekly market prices over the most recent 260 weeks (*i.e.*, five years). These selection criteria resulted in a proxy group of 48 domestic, non-price regulated firms comparable in total risk to the Utility Proxy Group. Total risk is the sum of non-diversifiable market risk and diversifiable company-specific risks. The criteria used in selecting the domestic, non-price regulated firms was:

(i) They must be covered by *Value Line Investment Survey* (Standard Edition);

(ii) They must be domestic, non-price regulated companies, *i.e.*, not utilities;

(iii) Their beta coefficients must lie within plus or minus two standard deviations of the average unadjusted beta coefficients of the Utility Proxy Group; and

(iv) The residual standard errors of the *Value Line* regressions which gave rise to the unadjusted beta coefficients must lie within plus or minus two standard deviations of the average residual standard error of the Utility Proxy Group.

Beta coefficients measure market, or systematic, risk, which is not diversifiable. The residual standard errors of the regressions measure each firm's company-specific, diversifiable risk. Companies that have similar beta coefficients and similar residual standard errors resulting from the same regression analyses have similar total investment risk.

Q. HAVE YOU PREPARED AN SCHEDULE WHICH SHOWS THE DATA FROM WHICH YOU SELECTED THE 48 DOMESTIC, NON-PRICE REGULATED COMPANIES THAT ARE COMPARABLE IN TOTAL RISK TO THE UTILITY PROXY GROUP?

A. Yes, the basis of my selection and both proxy groups' regression statistics are shown in Schedule DWD-5.

Q. DID YOU CALCULATE COMMON EQUITY COST RATES USING THE DCF MODEL, RPM, AND CAPM FOR THE NON-PRICE REGULATED PROXY GROUP?

A. Yes. Because the DCF model, RPM, and CAPM have been applied in an identical manner as described above, I will not repeat the details of the rationale and

application of each model. One exception is in the application of the RPM, where I did not use public utility-specific equity risk premiums, nor did I apply the PRPM to the individual non-price regulated companies.

Page 2 of Schedule DWD-6 derives the constant growth DCF model common equity cost rate. As shown, the indicated common equity cost rate, using the constant growth DCF for the Non-Price Regulated Proxy Group comparable in total risk to the Utility Proxy Group, is 12.83%.

Pages 3 through 5 of Schedule DWD-6 contain the data and calculations that support the 12.49% RPM common equity cost rate. As shown on line 1, page 3 of Schedule DWD-6, the consensus prospective yield on Moody's Baa-rated corporate bonds for the six quarters ending in the third quarter of 2022, and for the years 2023 to 2027 and 2028 to 2032, is 4.46%.[42]

When the beta-adjusted risk premium of 8.03%[43] relative to the Non-Price Regulated Proxy Group is added to the prospective Baa2-rated corporate bond yield of 4.46%, the indicated RPM common equity cost rate is 12.49%.

Page 6 of Schedule DWD-6 contains the inputs and calculations that support my indicated CAPM/ECAPM common equity cost rate of 11.69%.

Q. HOW IS THE COST RATE OF COMMON EQUITY BASED ON THE NON-PRICE REGULATED PROXY GROUP COMPARABLE IN TOTAL RISK TO THE UTILITY PROXY GROUP?

A. As shown on page 1 of Schedule DWD-6, the results of the common equity models applied to the Non-Price Regulated Proxy Group -- which group is comparable in

[42] *Blue Chip Financial Forecasts*, June 1, 2021, at page 2 and 14.
[43] Derived on page 5 of Schedule DWD-6.

total risk to the Utility Proxy Group -- are as follows: 12.83% (DCF), 12.49% (RPM), and 11.69% (CAPM). The average of the mean and median of these models is 12.42%, which I used as the indicated common equity cost rates for the Non-Price Regulated Proxy Group.

VI. CONCLUSION OF COMMON EQUITY COST RATE BEFORE ADJUSTMENTS

Q. WHAT ARE THE INDICATED COMMON EQUITY COST RATES BEFORE ADJUSTMENTS?

A. By applying multiple cost of common equity models to the Utility Proxy Group and the Non-Price Regulated Proxy Group, the indicated range of common equity cost rates before any relative risk adjustment is between 9.44% and 12.42%. The spread between the high and low values in the range (298 basis points) indicates that there is still a fair amount of uncertainty around the recovery from the COVID-19 pandemic. I used multiple cost of common equity models as primary tools in arriving at my recommended common equity cost rate, because no single model is so inherently precise that it can be relied on to the exclusion of other theoretically sound models. Using multiple models adds reliability to the estimated common equity cost rate, with the prudence of using multiple cost of common equity models supported in both the financial literature and regulatory precedent.

VII. ADJUSTMENTS TO THE COMMON EQUITY COST RATE

A. Size Adjustment

Q. DOES ATMOS ENERGY'S SMALLER SIZE RELATIVE TO THE UTILITY PROXY GROUP COMPANIES INCREASE ITS BUSINESS RISK?

A. Yes. Atmos Energy's smaller size relative to the Utility Proxy Group companies indicates greater relative business risk for the Company because, all else being equal, size has a material bearing on risk.

Size affects business risk because smaller companies generally are less able to cope with significant events that affect sales, revenues and earnings. For example, smaller companies face more risk exposure to business cycles and economic conditions, both nationally and locally. Additionally, the loss of revenues from a few larger customers would have a greater effect on a small company than on a bigger company with a larger, more diverse, customer base.

As further evidence that smaller firms are riskier, investors generally demand greater returns from smaller firms to compensate for less marketability and liquidity of their securities. Duff & Phelps 2020 Valuation Handbook Guide to Cost of Capital - Market Results through 2019 (D&P - 2020) discusses the nature of the small-size phenomenon, providing an indication of the magnitude of the size premium based on several measures of size. In discussing "Size as a Predictor of Equity Premiums," D&P - 2020 states:

> The size effect is based on the empirical observation that companies of smaller size are associated with greater risk and, therefore, have greater cost of capital [sic]. The "size" of a company is one of the most important risk elements to consider when developing cost of equity capital estimates for use in valuing a business simply because

> size has been shown to be a *predictor* of equity returns. In other words, there is a significant (negative) relationship between size and historical equity returns - as size *decreases*, returns tend to *increase*, and vice versa. (footnote omitted) (emphasis in original)[44]

Furthermore, in "The Capital Asset Pricing Model: Theory and Evidence," Fama and French note size is indeed a risk factor which must be reflected when estimating the cost of common equity. On page 14, they note:

> . . . the higher average returns on small stocks and high book-to-market stocks reflect unidentified state variables that produce undiversifiable risks (covariances) in returns not captured in the market return and are priced separately from market betas.[45]

Based on this evidence, Fama and French proposed their three-factor model which includes a size variable in recognition of the effect size has on the cost of common equity.

Also, it is a basic financial principle that the use of funds invested, and not the source of funds, is what gives rise to the risk of any investment.[46] Eugene Brigham, a well-known authority, states:

> A number of researchers have observed that portfolios of small-firms (sic) have earned consistently higher average returns than those of large-firm stocks; this is called the "small-firm effect." On the surface, it would seem to be advantageous to the small firms to provide average returns in a stock market that are higher than those of larger firms. In reality, it is bad news for the small firm; **what the small-firm effect means is that the capital market demands higher returns on stocks of small firms than on otherwise similar stocks of the large firms**. (emphasis added)[47]

[44] Duff & Phelps Valuation Handbook – U.S. Guide to Cost of Capital, Wiley 2020, at 4-1.

[45] Eugene F. Fama and Kenneth R. French, "The Capital Asset Pricing Model: Theory and Evidence," *Journal of Economic Perspectives*, Volume 18, Number 3, Summer 2004, at 25-43.

[46] Brealey, Richard A. and Myers, Stewart C., Principles of Corporate Finance (McGraw-Hill Book Company, 1996), at 204-205, 229.

[47] Brigham, Eugene F., Fundamentals of Financial Management, Fifth Edition (The Dryden Press, 1989), at 623.

Consistent with the financial principle of risk and return discussed above, increased relative risk due to small size must be considered in the allowed rate of return on common equity. Therefore, the Commission's authorization of a cost rate of common equity in this proceeding must appropriately reflect the unique risks of Atmos Energy, including its small size, which is justified and supported above by evidence in the financial literature.

Q. IS THERE A WAY TO QUANTIFY A RELATIVE RISK ADJUSTMENT DUE TO ATMOS ENERGY'S SMALL SIZE RELATIVE TO THE UTILITY PROXY GROUP?

A. Yes. Atmos Energy has greater relative risk than the average utility in the Utility Proxy Group because of its smaller size compared with the utilities in that group, as measured by an estimated market capitalization of common equity for Atmos Energy.

Table 8: Size as Measured by Market Capitalization for Atmos Energy and the Utility Proxy Group

	Market Capitalization* ($ Millions)	Times Greater than The Company
Atmos Energy	$597.101	
Utility Proxy Group	$4,615.314	7.7x

*From page 1 of Schedule DWD-7.

Atmos Energy's estimated market capitalization was $597.101 million as of May 28, 2021,[48] compared with the market capitalization of the average company

[48] $597.101 (company-provided forecasted rate base at Twelve Months Ended December 31, 2022) * requested equity ratio of 57.05% * 175.6% (market-to-book ratio of the Utility Proxy Group) as demonstrated on page 2 of Schedule DWD-7.

in the Utility Proxy Group of $4.6 billion as of May 28, 2021. The average company in the Utility Proxy Group has a market capitalization 7.7 times the size of Atmos Energy's estimated market capitalization.

As a result, it is necessary to upwardly adjust the range of indicated common equity cost rates between 9.44% to 12.42% to reflect Atmos Energy's greater risk due to their smaller relative size. The determination is based on the size premiums for portfolios of New York Stock Exchange, American Stock Exchange, and NASDAQ listed companies ranked by deciles for the 1926 to 2020 period. The average size premium for the Utility Proxy Group with a market capitalization of $4.6 billion falls in the 4th decile, while the Company's estimated market capitalization of $597.101 million places it in the 8th decile. The size premium spread between the 4th decile and the 8th decile is 0.71%. Even though a 0.71% upward size adjustment is indicated, I applied a size premium of 0.20% to the Company's range of indicated common equity cost rates.

Q. SINCE ATMOS ENERGY IS A DIVISION OF ATO, WHY IS THE SIZE OF THE TOTAL COMPANY NOT MORE APPROPRIATE TO USE WHEN DETERMINING THE SIZE ADJUSTMENT?

A. As discussed previously, rates are set using the stand-alone principle, which maintains that the utility operations of a diversified firm should be regulated as though they were independent (*i.e.,* without subsidies to or from affiliated companies). Because of this, the return derived in this proceeding will not apply to ATO as a whole, but only Atmos Energy's Kentucky gas distribution operations. ATO is the sum of its constituent parts, including those constituent parts' ROEs.

Potential investors in the Company are aware that it is a combination of operations in each state, and that each state's operations experience the operating risks specific to their jurisdiction. The market's expectation of ATO's return is commensurate with the realities of its composite operations in each of the states in which it operates.

B. Credit Risk Adjustment

Q. PLEASE DISCUSS YOUR PROPOSED CREDIT RISK ADJUSTMENT.

ATO's long-term issuer ratings are A1 and A from Moody's Investors Services and S&P, respectively, which are less risky than the average long-term issuer ratings for the Utility Proxy Group of A2/A3 and A-, respectively.[49] Hence, a downward credit risk adjustment is necessary to reflect the less risky credit rating, *i.e.,* A1, of Atmos Energy relative to the A2/A3 average Moody's bond rating of the Utility Proxy Group.[50]

An indication of the magnitude of the necessary downward adjustment to reflect the lower credit risk inherent in an A1 bond rating is one-third of a recent three-month average spread between Moody's A- and Aa-rated public utility bond yields and one-sixth of a recent spread between A- and Baa-rated public utility bonds, shown on page 4 of Schedule DWD-3, or 0.10%.[51]

[49] Source of Information: S&P Global Market Intelligence.
[50] As shown on page 5 of Schedule DWD-3.
[51] 1/3 * 0.17% = 0.06% + 1/6 * 0.26% = 0.04%. 0.06% + 0.04% = 0.10%.

C. Flotation Cost Adjustment

Q. WHAT ARE FLOTATION COSTS?

A. Flotation costs are those costs associated with the sale of new issuances of common stock. They include market pressure and the mandatory unavoidable costs of issuance (*e.g.*, underwriting fees and out-of-pocket costs for printing, legal, registration, etc.). For every dollar raised through debt or equity offerings, the Company receives less than one full dollar in financing.

Q. WHY IS IT IMPORTANT TO RECOGNIZE FLOTATION COSTS IN THE ALLOWED COMMON EQUITY COST RATE?

A. It is important because there is no other mechanism in the ratemaking paradigm through which such costs can be recognized and recovered. Because these costs are real, necessary, and legitimate, recovery of these costs should be permitted. As noted by Morin:

> The costs of issuing these securities are just as real as operating and maintenance expenses or costs incurred to build utility plants, and fair regulatory treatment must permit recovery of these costs….
>
> The simple fact of the matter is that common equity capital is not free….[Flotation costs] must be recovered through a rate of return adjustment.[52]

Q. SHOULD FLOTATION COSTS BE RECOGNIZED ONLY IF THERE WAS AN ISSUANCE DURING THE TEST YEAR OR THERE IS AN IMMINENT POST-TEST YEAR ISSUANCE OF ADDITIONAL COMMON STOCK?

A. No. As noted above, there is no mechanism to recapture such costs in the ratemaking paradigm other than an adjustment to the allowed common equity cost

[52] Morin, at p. 321.

rate. Flotation costs are charged to capital accounts and are not expensed on a utility's income statement. As such, flotation costs are analogous to capital investments, albeit negative, reflected on the balance sheet. Recovery of capital investments relates to the expected useful lives of the investment. Since common equity has a very long and indefinite life (assumed to be infinity in the standard regulatory DCF model), flotation costs should be recovered through an adjustment to common equity cost rate, even when there has not been an issuance during the test year, or in the absence of an expected imminent issuance of additional shares of common stock.

Historical flotation costs are a permanent loss of investment to the utility and should be accounted for. When any company, including a utility, issues common stock, flotation costs are incurred for legal, accounting, printing fees and the like. For each dollar of issuing market price, a small percentage is expensed and is permanently unavailable for investment in utility rate base. Since these expenses are charged to capital accounts and not expensed on the income statement, the only way to restore the full value of that dollar of issuing price with an assumed investor required return of 10% is for the net investment, $0.95, to earn more than 10% to net back to the investor a fair return on that dollar. In other words, if a company issues stock at $1.00 with 5% in flotation costs, it will net $0.95 in investment. Assuming the investor in that stock requires a 10% return on his or her

invested $1.00 (*i.e.*, a return of $0.10), the company needs to earn approximately 10.5% on its invested $0.95 to receive a $0.10 return.

Q. DO THE COMMON EQUITY COST RATE MODELS YOU HAVE USED ALREADY REFLECT INVESTORS' ANTICIPATION OF FLOTATION COSTS?

A. No. All of these models assume no transaction costs. The literature is quite clear that these costs are not reflected in the market prices paid for common stocks. For example, Brigham and Daves confirm this and provide the methodology utilized to calculate the flotation adjustment.[53] In addition, Morin confirms the need for such an adjustment even when no new equity issuance is imminent.[54] Consequently, it is proper to include a flotation cost adjustment when using cost of common equity models to estimate the common equity cost rate.

Q. HOW DID YOU CALCULATE THE FLOTATION COST ALLOWANCE?

A. I modified the DCF calculation to provide a dividend yield that would reimburse investors for issuance costs in accordance with the method cited in literature by Brigham and Daves, as well as by Morin. The flotation cost adjustment recognizes the actual costs of issuing equity that were incurred by ATO in its last four equity issuances. Based on the issuance costs shown on page 1 of Schedule DWD-8, an adjustment of 0.04% is required to reflect the flotation costs applicable to the Utility Proxy Group.

[53] Eugene F. Brigham and Phillip R. Daves, Intermediate Financial Management, 9th Edition, Thomson/Southwestern, at p. 342.

[54] Morin, at pp. 327-30.

VIII. CONCLUSION

Q. WHAT IS YOUR RECOMMENDED ROE FOR ATMOS ENERGY?

A. Given the indicated ROE range applicable to the Utility Proxy Group of 9.44% to 12.42% and the Company-specific ROE range of 9.58% to 12.42%, I conclude that an appropriate ROE for the Company is 10.35%.

Q. IN YOUR OPINION, IS YOUR PROPOSED ROE OF 10.35% FAIR AND REASONABLE TO ATMOS ENERGY AND ITS CUSTOMERS?

A. Yes, it is.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF RATE APPLICATION OF ATMOS ENERGY CORPORATION	)))	Case No. 2021-00214

CERTIFICATE AND AFFIDAVIT

The Affiant, Dylan W. D'Ascendis, being duly sworn, deposes and states that the prepared testimony attached hereto and made a part hereof, constitutes the prepared direct testimony of this affiant in Case No. 2021-00214, in the Matter of the Rate Application of Atmos Energy Corporation, and that if asked the questions propounded therein, this affiant would make the answers set forth in the attached prepared direct pre-filed testimony.

Dylan W. D'Ascendis

STATE OF NEW JERSEY

COUNTY OF BURLINGTON

SUBSCRIBED AND SWORN to before me by Dylan W. D'Ascendis on this the 14th day of June, 2021.

Margaret A Clancy
Notary Public of New Jersey
My Commission Expires 6/9/2024

Margaret A Clancy
Notary Public

My Commission Expires: 6/9/2024

scottmadden
MANAGEMENT CONSULTANTS

Appendix A - Resume & Testimony Listing of:
Dylan W. D'Ascendis, CRRA, CVA
Partner

Summary

Dylan is an experienced consultant and a Certified Rate of Return Analyst (CRRA) and Certified Valuation Analyst (CVA). He has served as a consultant for investor-owned and municipal utilities and authorities for 12 years. Dylan has extensive experience in rate of return analyses, class cost of service, rate design, and valuation for regulated public utilities. He has testified as an expert witness in the subjects of rate of return, cost of service, rate design, and valuation before 30 regulatory commissions in the U.S., one Canadian province, and an American Arbitration Association panel.

He also maintains the benchmark index against which the Hennessy Gas Utility Mutual Fund performance is measured.

Areas of Specialization

- Regulation and Rates
- Utilities
- Mutual Fund Benchmarking
- Capital Market Risk
- Financial Modeling
- Valuation
- Regulatory Strategy
- Rate Case Support
- Rate of Return
- Cost of Service
- Rate Design

Recent Expert Testimony Submission/Appearances

Jurisdiction	***Topic***
Massachusetts Department of Public Utilities	Rate of Return
New Jersey Board of Public Utilities	Rate of Return
Hawaii Public Utilities Commission	Cost of Service, Rate Design
South Carolina Public Service Commission	Return on Common Equity
American Arbitration Association	Valuation

Recent Assignments

- Provided expert testimony on the cost of capital for ratemaking purposes before numerous state utility regulatory agencies
- Maintains the benchmark index against which the Hennessy Gas Utility Mutual Fund performance is measured
- Sponsored valuation testimony for a large municipal water company in front of an American Arbitration Association Board to justify the reasonability of their lease payments to the City
- Co-authored a valuation report on behalf of a large investor-owned utility company in response to a new state regulation which allowed the appraised value of acquired assets into rate base

Recent Publications and Speeches

- Co-Author of: "Decoupling, Risk Impacts and the Cost of Capital", co-authored with Richard A. Michelfelder, Ph.D., Rutgers University and Pauline M. Ahern. The Electricity Journal, March, 2020.
- Co-Author of: "Decoupling Impact and Public Utility Conservation Investment", co-authored with Richard A. Michelfelder, Ph.D., Rutgers University and Pauline M. Ahern. Energy Policy Journal, 130 (2019), 311-319.
- "Establishing Alternative Proxy Groups", before the Society of Utility and Regulatory Financial Analysts: 51st Financial Forum, April 4, 2019, New Orleans, LA.
- "Past is Prologue: Future Test Year", Presentation before the National Association of Water Companies 2017 Southeast Water Infrastructure Summit, May 2, 2017, Savannah, GA.
- Co-author of: "Comparative Evaluation of the Predictive Risk Premium Model™, the Discounted Cash Flow Model and the Capital Asset Pricing Model", co-authored with Richard A. Michelfelder, Ph.D., Rutgers University, Pauline M. Ahern, and Frank J. Hanley, The Electricity Journal, May, 2013.
- "Decoupling: Impact on the Risk and Cost of Common Equity of Public Utility Stocks", before the Society of Utility and Regulatory Financial Analysts: 45th Financial Forum, April 17-18, 2013, Indianapolis, IN.

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MANAGEMENT CONSULTANTS

Resume & Testimony Listing of:
Dylan W. D'Ascendis, CRRA, CVA
Partner

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Regulatory Commission of Alaska				
Alaska Power Company	09/20	Alaska Power Company; Goat Lake Hydro, Inc.; BBL Hydro, Inc.	Tariff Nos. TA886-2; TA6-521; TA4-573	Capital Structure
Alaska Power Company	07/16	Alaska Power Company	Docket No. TA857-2	Rate of Return
Alberta Utilities Commission				
AltaLink, L.P., and EPCOR Distribution & Transmission, Inc.	01/20	AltaLink, L.P., and EPCOR Distribution & Transmission, Inc.	2021 Generic Cost of Capital, Proceeding ID. 24110	Rate of Return
Arizona Corporation Commission				
EPCOR Water Arizona, Inc.	06/20	EPCOR Water Arizona, Inc.	Docket No. WS-01303A-20-0177	Rate of Return
Arizona Water Company	12/19	Arizona Water Company – Western Group	Docket No. W-01445A-19-0278	Rate of Return
Arizona Water Company	08/18	Arizona Water Company – Northern Group	Docket No. W-01445A-18-0164	Rate of Return
Arkansas Public Service Commission				
CenterPoint Energy Resources Corp.	05/21	CenterPoint Arkansas Gas	Docket No. 21-004-U	Return on Equity
Colorado Public Utilities Commission				
Summit Utilities, Inc.	04/18	Colorado Natural Gas Company	Docket No. 18AL-0305G	Rate of Return
Atmos Energy Corporation	06/17	Atmos Energy Corporation	Docket No. 17AL-0429G	Rate of Return
Delaware Public Service Commission				
Delmarva Power & Light Co.	11/20	Delmarva Power & Light Co.	Docket No. 20-0149 (Electric)	Return on Equity
Delmarva Power & Light Co.	10/20	Delmarva Power & Light Co.	Docket No. 20-0150 (Gas)	Return on Equity
Tidewater Utilities, Inc.	11/13	Tidewater Utilities, Inc.	Docket No. 13-466	Capital Structure
Public Service Commission of the District of Columbia				
Washington Gas Light Company	09/20	Washington Gas Light Company	Formal Case No. 1162	Rate of Return
Federal Energy Regulatory Commission				
LS Power Grid California, LLC	10/20	LS Power Grid California, LLC	Docket No. ER21-195-000	Rate of Return
Florida Public Service Commission				
Tampa Electric Company	04/21	Tampa Electric Company	Docket No. 20210034-EI	Return on Equity
Peoples Gas System	09/20	Peoples Gas System	Docket No. 20200051-GU	Rate of Return
Utilities, Inc. of Florida	06/20	Utilities, Inc. of Florida	Docket No. 20200139-WS	Rate of Return
Hawaii Public Utilities Commission				
Launiupoko Irrigation Company, Inc.	12/20	Launiupoko Irrigation Company, Inc.	Docket No. 2020-0217 / Transferred to 2020-0089	Capital Structure
Lanai Water Company, Inc.	12/19	Lanai Water Company, Inc.	Docket No. 2019-0386	Cost of Service / Rate Design
Manele Water Resources, LLC	08/19	Manele Water Resources, LLC	Docket No. 2019-0311	Cost of Service / Rate Design
Kaupulehu Water Company	02/18	Kaupulehu Water Company	Docket No. 2016-0363	Rate of Return
Aqua Engineers, LLC	05/17	Puhi Sewer & Water Company	Docket No. 2017-0118	Cost of Service / Rate Design

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MANAGEMENT CONSULTANTS

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Partner

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Hawaii Resources, Inc.	09/16	Laie Water Company	Docket No. 2016-0229	Cost of Service / Rate Design
Illinois Commerce Commission				
Utility Services of Illinois, Inc.	02/21	Utility Services of Illinois, Inc.	Docket No. 21-0198	Rate of Return
Ameren Illinois Company d/b/a Ameren Illinois	07/20	Ameren Illinois Company d/b/a Ameren Illinois	Docket No. 20-0308	Return on Equity
Utility Services of Illinois, Inc.	11/17	Utility Services of Illinois, Inc.	Docket No. 17-1106	Cost of Service / Rate Design
Aqua Illinois, Inc.	04/17	Aqua Illinois, Inc.	Docket No. 17-0259	Rate of Return
Utility Services of Illinois, Inc.	04/15	Utility Services of Illinois, Inc.	Docket No. 14-0741	Rate of Return
Indiana Utility Regulatory Commission				
Aqua Indiana, Inc.	03/16	Aqua Indiana, Inc. Aboite Wastewater Division	Docket No. 44752	Rate of Return
Twin Lakes, Utilities, Inc.	08/13	Twin Lakes, Utilities, Inc.	Docket No. 44388	Rate of Return
Kansas Corporation Commission				
Atmos Energy	07/19	Atmos Energy	19-ATMG-525-RTS	Rate of Return
Kentucky Public Service Commission				
Duke Energy Kentucky, Inc.	06/21	Duke Energy Kentucky, Inc.	2021-00190	Return on Equity
Bluegrass Water Utility Operating Company	10/20	Bluegrass Water Utility Operating Company	2020-00290	Return on Equity
Louisiana Public Service Commission				
Southwestern Electric Power Company	12/20	Southwestern Electric Power Company	Docket No. U-35441	Return on Equity
Atmos Energy	04/20	Atmos Energy	Docket No. U-35535	Rate of Return
Louisiana Water Service, Inc.	06/13	Louisiana Water Service, Inc.	Docket No. U-32848	Rate of Return
Maryland Public Service Commission				
Washington Gas Light Company	08/20	Washington Gas Light Company	Case No. 9651	Rate of Return
FirstEnergy, Inc.	08/18	Potomac Edison Company	Case No. 9490	Rate of Return
Massachusetts Department of Public Utilities				
Unitil Corporation	12/19	Fitchburg Gas & Electric Co. (Elec.)	D.P.U. 19-130	Rate of Return
Unitil Corporation	12/19	Fitchburg Gas & Electric Co. (Gas)	D.P.U. 19-131	Rate of Return
Liberty Utilities	07/15	Liberty Utilities d/b/a New England Natural Gas Company	Docket No. 15-75	Rate of Return
Minnesota Public Utilities Commission				
Northern States Power Company	11/20	Northern States Power Company	Docket No. E002/GR-20-723	Rate of Return
Mississippi Public Service Commission				
Atmos Energy	03/19	Atmos Energy	Docket No. 2015-UN-049	Capital Structure
Atmos Energy	07/18	Atmos Energy	Docket No. 2015-UN-049	Capital Structure
Missouri Public Service Commission				
Spire Missouri, Inc.	12/20	Spire Missouri, Inc.	Case No. GR-2021-0108	Return on Equity
Indian Hills Utility Operating Company, Inc.	10/17	Indian Hills Utility Operating Company, Inc.	Case No. SR-2017-0259	Rate of Return

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SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Raccoon Creek Utility Operating Company, Inc.	09/16	Raccoon Creek Utility Operating Company, Inc.	Docket No. SR-2016-0202	Rate of Return
Public Utilities Commission of Nevada				
Southwest Gas Corporation	08/20	Southwest Gas Corporation	Docket No. 20-02023	Return on Equity
New Hampshire Public Utilities Commission				
Aquarion Water Company of New Hampshire, Inc.	12/20	Aquarion Water Company of New Hampshire, Inc.	Docket No. DW 20-184	Rate of Return
New Jersey Board of Public Utilities				
Middlesex Water Company	05/21	Middlesex Water Company	Docket No. WR21050813	Rate of Return
Atlantic City Electric Company	12/20	Atlantic City Electric Company	Docket No. ER20120746	Return on Equity
FirstEnergy	02/20	Jersey Central Power & Light Co.	Docket No. ER20020146	Rate of Return
Aqua New Jersey, Inc.	12/18	Aqua New Jersey, Inc.	Docket No. WR18121351	Rate of Return
Middlesex Water Company	10/17	Middlesex Water Company	Docket No. WR17101049	Rate of Return
Middlesex Water Company	03/15	Middlesex Water Company	Docket No. WR15030391	Rate of Return
The Atlantic City Sewerage Company	10/14	The Atlantic City Sewerage Company	Docket No. WR14101263	Cost of Service / Rate Design
Middlesex Water Company	11/13	Middlesex Water Company	Docket No. WR1311059	Capital Structure
New Mexico Public Regulation Commission				
Southwestern Public Service Company	01/21	Southwestern Public Service Company	Case No. 20-00238-UT	Return on Equity
North Carolina Utilities Commission				
Piedmont Natural Gas Co.Inc.	03/21	Piedmont Natural Gas Co., Inc.	Docket No. G-9, Sub 781	Return on Equity
Duke Energy Carolinas, LLC	07/20	Duke Energy Carolinas, LLC	Docket No. E-7, Sub 1214	Return on Equity
Duke Energy Progress, LLC	07/20	Duke Energy Progress, LLC	Docket No. E-2, Sub 1219	Return on Equity
Aqua North Carolina, Inc.	12/19	Aqua North Carolina, Inc.	Docket No. W-218 Sub 526	Rate of Return
Carolina Water Service, Inc.	06/19	Carolina Water Service, Inc.	Docket No. W-354 Sub 364	Rate of Return
Carolina Water Service, Inc.	09/18	Carolina Water Service, Inc.	Docket No. W-354 Sub 360	Rate of Return
Aqua North Carolina, Inc.	07/18	Aqua North Carolina, Inc.	Docket No. W-218 Sub 497	Rate of Return
North Dakota Public Service Commission				
Northern States Power Company	11/20	Northern States Power Company	Case No. PU-20-441	Rate of Return
Public Utilities Commission of Ohio				
Aqua Ohio, Inc.	05/16	Aqua Ohio, Inc.	Docket No. 16-0907-WW-AIR	Rate of Return
Pennsylvania Public Utility Commission				
Vicinity Energy Philadelphia, Inc.	04/21	Vicinity Energy Philadelphia, Inc.	Docket No. R-2021-3024060	Rate of Return
Delaware County Regional Water Control Authority	02/20	Delaware County Regional Water Control Authority	Docket No. A-2019-3015173	Valuation
Valley Energy, Inc.	07/19	C&T Enterprises	Docket No. R-2019-3008209	Rate of Return
Wellsboro Electric Company	07/19	C&T Enterprises	Docket No. R-2019-3008208	Rate of Return
Citizens' Electric Company of Lewisburg	07/19	C&T Enterprises	Docket No. R-2019-3008212	Rate of Return
Steelton Borough Authority	01/19	Steelton Borough Authority	Docket No. A-2019-3006880	Valuation
Mahoning Township, PA	08/18	Mahoning Township, PA	Docket No. A-2018-3003519	Valuation

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Partner

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
SUEZ Water Pennsylvania Inc.	04/18	SUEZ Water Pennsylvania Inc.	Docket No. R-2018-000834	Rate of Return
Columbia Water Company	09/17	Columbia Water Company	Docket No. R-2017-2598203	Rate of Return
Veolia Energy Philadelphia, Inc.	06/17	Veolia Energy Philadelphia, Inc.	Docket No. R-2017-2593142	Rate of Return
Emporium Water Company	07/14	Emporium Water Company	Docket No. R-2014-2402324	Rate of Return
Columbia Water Company	07/13	Columbia Water Company	Docket No. R-2013-2360798	Rate of Return
Penn Estates Utilities, Inc.	12/11	Penn Estates, Utilities, Inc.	Docket No. R-2011-2255159	Capital Structure / Long-Term Debt Cost Rate
South Carolina Public Service Commission				
Blue Granite Water Co.	12/19	Blue Granite Water Company	Docket No. 2019-292-WS	Rate of Return
Carolina Water Service, Inc.	02/18	Carolina Water Service, Inc.	Docket No. 2017-292-WS	Rate of Return
Carolina Water Service, Inc.	06/15	Carolina Water Service, Inc.	Docket No. 2015-199-WS	Rate of Return
Carolina Water Service, Inc.	11/13	Carolina Water Service, Inc.	Docket No. 2013-275-WS	Rate of Return
United Utility Companies, Inc.	09/13	United Utility Companies, Inc.	Docket No. 2013-199-WS	Rate of Return
Utility Services of South Carolina, Inc.	09/13	Utility Services of South Carolina, Inc.	Docket No. 2013-201-WS	Rate of Return
Tega Cay Water Services, Inc.	11/12	Tega Cay Water Services, Inc.	Docket No. 2012-177-WS	Capital Structure
Tennessee Public Utility Commission				
Piedmont Natural Gas Company	07/20	Piedmont Natural Gas Company	Docket No. 20-00086	Return on Equity
Public Utility Commission of Texas				
Southwestern Public Service Company	02/21	Southwestern Public Service Company	Docket No. 51802	Return on Equity
Southwestern Electric Power Company	10/20	Southwestern Electric Power Company	Docket No. 51415	Rate of Return
Virginia State Corporation Commission				
Virginia Natural Gas, Inc.	04/21	Virginia Natural Gas, Inc.	PUR-2020-00095	Return on Equity
Massanutten Public Service Corporation	12/20	Massanutten Public Service Corporation	PUE-2020-00039	Return on Equity
Aqua Virginia, Inc.	07/20	Aqua Virginia, Inc.	PUR-2020-00106	Rate of Return
WGL Holdings, Inc.	07/18	Washington Gas Light Company	PUR-2018-00080	Rate of Return
Atmos Energy Corporation	05/18	Atmos Energy Corporation	PUR-2018-00014	Rate of Return
Aqua Virginia, Inc.	07/17	Aqua Virginia, Inc.	PUR-2017-00082	Rate of Return
Massanutten Public Service Corp.	08/14	Massanutten Public Service Corp.	PUE-2014-00035	Rate of Return / Rate Design

Atmos Energy Corporation
Recommended Capital Structure and Cost Rates
for Ratemaking Purposes

Type Of Capital	Ratios (1)	Cost Rate	Weighted Cost Rate
Long-Term Debt	42.77%	4.00% (1)	1.71%
Short-Term Debt	0.18%	25.17% (1)	0.05%
Common Equity	57.05%	10.35% (2)	5.90%
Total	100.00%		7.66%

Notes:

(1) Company-provided.
(2) From page 2 of this Schedule.

Atmos Energy Corporation
Brief Summary of Common Equity Cost Rate

Line No.	Principal Methods	Proxy Group of Seven Natural Gas Distribution Companies
1.	Discounted Cash Flow Model (DCF) (1)	9.44%
2.	Risk Premium Model (RPM) (2)	10.96%
3.	Capital Asset Pricing Model (CAPM) (3)	11.75%
4.	Market Models Applied to Comparable Risk, Non-Price Regulated Companies (4)	12.42%
5.	Range of Common Equity Model Results	9.44% - 12.42%
6.	Size Risk Adjustment (5)	0.20%
7.	Credit Risk Adjustment (6)	-0.10%
8.	Flotation Cost Adjustment (7)	0.04%
9.	Indicated Range of Common Equity Cost Rates after Adjustment	9.58% - 12.66%
10.	Recommended Common Equity Cost Rate	10.35%

Notes:
(1) From page 1 of Schedule DWD-2.
(2) From page 1 of Schedule DWD-3.
(3) From page 1 of Schedule DWD-4.
(4) From page 1 of Schedule DWD-6.
(5) Adjustment to reflect the Company's greater business risk due to its smaller size relative to the Utility Proxy Group as detailed in Mr. D'Ascendis' direct testimony.
(6) Company-specific risk adjustment to reflect Atmos Energy's lower risk due to a higher long-term issuer rating relative to the proxy group as detailed in Mr. D'Ascendis' direct testimony.
(7) From page 1 of Schedule DWD-8.

Atmos Energy Corporation
Indicated Common Equity Cost Rate Using the Discounted Cash Flow Model for the
Proxy Group of Seven Natural Gas Distribution Companies

Proxy Group of Seven Natural Gas Distribution Companies	[1] Average Dividend Yield (1)	[2] Value Line Projected Five Year Growth in EPS (2)	[3] Zack's Five Year Projected Growth Rate in EPS	[4] Bloomberg's Five Year Projected Growth Rate in EPS	[5] Yahoo! Finance Projected Five Year Growth in EPS	[6] Average Projected Five Year Growth in EPS (3)	[7] Adjusted Dividend Yield (4)	[8] Indicated Common Equity Cost Rate (5)
Atmos Energy Corporation	2.54 %	7.00 %	7.30 %	7.10 %	7.17 %	7.14 %	2.63 %	9.77 %
New Jersey Resources Corporation	3.19	2.00	7.10	7.33	6.00	5.61	3.28	8.89
Northwest Natural Holding Company	3.57	5.50	3.90	4.42	3.80	4.41	3.65	8.06
ONE Gas, Inc.	3.02	6.50	5.00	5.67	5.00	5.54	3.10	8.64
South Jersey Industries, Inc.	4.84	11.50	5.40	4.93	4.80	6.66	5.00	11.66
Southwest Gas Holdings, Inc.	3.45	9.00	5.50	4.50	4.00	5.75	3.55	9.30
Spire Inc.	3.49	10.00	5.50	5.33	7.31	7.04	3.61	10.65
							Average	9.57 %
							Median	9.30 %
						Average of Mean and Median		9.44 %

NA= Not Available
NMF= Not Meaningful Figure

Notes:

(1) Indicated dividend at 05/28/2021 divided by the average closing price of the last 60 trading days ending 05/28/2021 for each company.

(2) From pages 2 through 8 of this Schedule.

(3) Average of columns 2 through 5 excluding negative growth rates.

(4) This reflects a growth rate component equal to one-half the conclusion of growth rate (from column 6) x column 1 to reflect the periodic payment of dividends (Gordon Model) as opposed to the continuous payment. Thus, for Atmos Energy Corporation, 2.54% x (1+(1/2 x 7.14%)) = 2.63%.

(5) Column 6 + column 7.

Source of Information:

Value Line Investment Survey
www.zacks.com Downloaded on 05/28/2021
www.yahoo.com Downloaded on 05/28/2021
Bloomberg Professional Services

Atmos Energy Corporation
Summary of Risk Premium Models for the
Proxy Group of Seven Natural Gas Distribution Companies

	Proxy Group of Seven Natural Gas Distribution Companies	
Predictive Risk Premium Model (PRPM) (1)	11.43	%
Risk Premium Using an Adjusted Total Market Approach (2)	10.49	%
Average	10.96	%

Notes:
(1) From page 2 of this Schedule.
(2) From page 3 of this Schedule.

Atmos Energy Corporation
Indicated ROE
Derived by the Predictive Risk Premium Model (1)

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
Proxy Group of Seven Natural Gas Distribution Companies	LT Average Predicted Variance	Spot Predicted Variance	Recommended Variance (2)	GARCH Coefficient	Predicted Risk Premium (3)	Risk-Free Rate (4)	Indicated ROE (5)
Atmos Energy Corporation	0.33%	0.48%	0.41%	2.2565	11.58%	2.88%	14.46%
New Jersey Resources Corporation	0.38%	0.34%	0.36%	2.0814	9.43%	2.88%	12.31%
Northwest Natural Holding Company	0.32%	0.38%	0.35%	1.5413	6.68%	2.88%	9.56%
ONE Gas, Inc.	0.30%	0.43%	0.37%	4.0633	19.39%	2.88%	NMF
South Jersey Industries, Inc.	0.39%	0.69%	0.54%	1.6346	11.03%	2.88%	13.91%
Southwest Gas Holdings, Inc.	0.43%	0.38%	0.41%	1.3628	6.84%	2.88%	9.72%
Spire Inc.	0.71%	0.52%	0.61%	0.9445	7.18%	2.88%	10.06%
						Average	11.67%
						Median	11.19%
						Average of Mean and Median	11.43%

Notes:
(1) The Predictive Risk Premium Model uses historical data to generate a predicted variance and a GARCH coefficient. The historical data used are the equity risk premiums for the first available trading month as reported by Bloomberg Professional Service.
(2) Given current market conditions, I recommend using average of the the long-term average predicted variance and the spot variance.
(3) (1+(Column [3] * Column [4])^12) - 1.
(4) From note 2 on page 2 of Schedule DWD-4.
(5) Column [5] + Column [6].

Atmos Energy Corporation
Indicated Common Equity Cost Rate
Through Use of a Risk Premium Model
Using an Adjusted Total Market Approach

Line No.		Proxy Group of Seven Natural Gas Distribution Companies	
1.	Prospective Yield on Aaa Rated Corporate Bonds (1)	3.56	%
2.	Adjustment to Reflect Yield Spread Between Aaa Rated Corporate Bonds and A2 Rated Public Utility Bonds	0.39	(2)
3.	Adjusted Prospective Yield on A2 Rated Public Utility Bonds	3.95	%
4.	Adjustment to Reflect Bond Rating Difference of Proxy Group	0.04	(3)
5.	Adjusted Prospective Bond Yield	3.99	%
6.	Equity Risk Premium (4)	6.50	
7.	Risk Premium Derived Common Equity Cost Rate	10.49	%

Notes:
(1) Consensus forecast of Moody's Aaa Rated Corporate bonds from Blue Chip Financial Forecasts (see pages 10 and 11 of this Schedule).

(2) The average yield spread of A2 rated public utility bonds over Aaa rated corporate bonds of 0.39% from page 4 of this Schedule.

(3) Adjustment to reflect the A2/A3 Moody's LT issuer rating of the Utility Proxy Group as shown on page 5 of this Schedule. The 0.04% upward adjustment is derived by taking 1/6 of the spread between A2 and Baa2 Public Utility Bonds (1/6 * 0.26% = 0.04%) as derived from page 4 of this Schedule.

(4) From page 7 of this Schedule.

Atmos Energy Corporation
Interest Rates and Bond Spreads for
Moody's Corporate and Public Utility Bonds

Selected Bond Yields - Moody's

	[1] Aaa Rated Corporate Bond	[2] Aa2 Rated Public Utility Bond	[3] A2 Rated Public Utility Bond	[4] Baa2 Rated Public Utility Bond
May-2021	2.96 %	3.17 %	3.33 %	3.58 %
Apr-2021	2.90	3.13	3.30	3.57
Mar-2021	3.04	3.27	3.44	3.72
Average	2.97 %	3.19 %	3.36 %	3.62 %

Selected Bond Spreads

A2 Rated Public Utility Bonds Over Aaa Rated Corporate Bonds: 0.39 % (1)

Baa2 Rated Public Utility Bonds Over A2 Rated Public Utility Bonds: 0.26 % (2)

A2 Rated Public Utility Bonds Over Aa2 Rated Public Utility Bonds: 0.17 % (3)

Notes:
(1) Column [3] - Column [1].
(2) Column [4] - Column [3].
(3) Column [3] - Column [2].

Source of Information:
Bloomberg Professional Service

Atmos Energy Corporation
Comparison of Long-Term Issuer Ratings for
Proxy Group of Seven Natural Gas Distribution Companies

	Moody's Long-Term Issuer Rating May 2021		Standard & Poor's Long-Term Issuer Rating May 2021	
Proxy Group of Seven Natural Gas Distribution Companies	Long-Term Issuer Rating (1)	Numerical Weighting (2)	Long-Term Issuer Rating (1)	Numerical Weighting (2)
Atmos Energy Corporation	A1	5.0	A-	7.0
New Jersey Resources Corporation	A1	5.0	NR	- -
Northwest Natural Holding Company	Baa1	8.0	A+	5.0
ONE Gas, Inc.	A3	7.0	BBB+	8.0
South Jersey Industries, Inc.	A3	7.0	BBB	9.0
Southwest Gas Holdings, Inc.	Baa1	8.0	A-	7.0
Spire Inc.	A1/A2	5.5	A-	7.0
Average	A2/A3	6.5	A-	7.2

Notes:

(1) Ratings are that of the average of each company's utility operating subsidiaries.
(2) From page 6 of this Schedule.

Source Information: Moody's Investors Service
Standard & Poor's Global Utilities Rating Service

Numerical Assignment for
Moody's and Standard & Poor's Bond Ratings

Moody's Bond Rating	Numerical Bond Weighting	Standard & Poor's Bond Rating
Aaa	1	AAA
Aa1	2	AA+
Aa2	3	AA
Aa3	4	AA-
A1	5	A+
A2	6	A
A3	7	A-
Baa1	8	BBB+
Baa2	9	BBB
Baa3	10	BBB-
Ba1	11	BB+
Ba2	12	BB
Ba3	13	BB-
B1	14	B+
B2	15	B
B3	16	B-

Atmos Energy Corporation
Judgment of Equity Risk Premium for
Proxy Group of Seven Natural Gas Distribution Companies

Line No.		Proxy Group of Seven Natural Gas Distribution Companies
1.	Calculated equity risk premium based on the total market using the beta approach (1)	8.03 %
2.	Mean equity risk premium based on a study using the holding period returns of public utilities with A rated bonds (2)	5.84
3.	Predicted Equity Risk Premium Based on Regression Analysis of 800 Fully-Litigated Natural Gas Utility Rate Cases	5.64
4.	Average equity risk premium	6.50 %

Notes: (1) From page 8 of this Schedule.
(2) From page 12 of this Schedule.
(3) From page 13 of this Schedule.

Atmos Energy Corporation
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for the
Proxy Group of Seven Natural Gas Distribution Companies

Line No.	Equity Risk Premium Measure	Proxy Group of Seven Natural Gas Distribution Companies
	Ibbotson-Based Equity Risk Premiums:	
1.	Ibbotson Equity Risk Premium (1)	5.92 %
2.	Regression on Ibbotson Risk Premium Data (2)	8.69
3.	Ibbotson Equity Risk Premium based on PRPM (3)	9.02
4.	Equity Risk Premium Based on Value Line Summary and Index (4)	4.60
5.	Equity Risk Premium Based on Value Line S&P 500 Companies (5)	10.76
6.	Equity Risk Premium Based on Bloomberg S&P 500 Companies (6)	12.78
7.	Conclusion of Equity Risk Premium	8.63 %
8.	Adjusted Beta (7)	0.93
9.	Forecasted Equity Risk Premium	8.03 %

Notes provided on page 9 of this Schedule.

Atmos Energy Corporation
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for the
Proxy Group of Seven Natural Gas Distribution Companies

Notes:

(1) Based on the arithmetic mean historical monthly returns on large company common stocks from Duff & Phelps 2021 SBBI® Yearbook minus the arithmetic mean monthly yield of Moody's average Aaa and Aa corporate bonds from 1928-2020.

(2) This equity risk premium is based on a regression of the monthly equity risk premiums of large company common stocks relative to Moody's average Aaa and Aa rated corporate bond yields from 1928-2020 referenced in Note 1 above.

(3) The Predictive Risk Premium Model (PRPM) is discussed in the accompanying direct testimony. The Ibbotson equity risk premium based on the PRPM is derived by applying the PRPM to the monthly risk premiums between Ibbotson large company common stock monthly returns and average Aaa and Aa corporate monthly bond yields, from January 1928 through March 2021.

(4) The equity risk premium based on the Value Line Summary and Index is derived by subtracting the average consensus forecast of Aaa corporate bonds of 3.56% (from page 3 of this Schedule) from the projected 3-5 year total annual market return of 8.16% (described fully in note 1 on page 2 of Schedule DWD-4).

(5) Using data from Value Line for the S&P 500, an expected total return of 14.32% was derived based upon expected dividend yields and long-term earnings growth estimates as a proxy for capital appreciation. Subtracting the average consensus forecast of Aaa corporate bonds of 3.56% results in an expected equity risk premium of 10.76%.

(6) Using data from the Bloomberg Professional Service for the S&P 500, an expected total return of 16.34% was derived based upon expected dividend yields and long-term earnings growth estimates as a proxy for capital appreciation. Subtracting the average consensus forecast of Aaa corporate bonds of 3.56% results in an expected equity risk premium of 12.78%.

(7) Average of mean and median beta from Schedule DWD-4.

Sources of Information:

Stocks, Bonds, Bills, and Inflation - 2021 SBBI Yearbook, John Wiley & Sons, Inc.
Industrial Manual and Mergent Bond Record Monthly Update.
Value Line Summary and Index
Blue Chip Financial Forecasts, June 1, 2021
Bloomberg Professional Service

Atmos Energy Corporation
Derivation of Mean Equity Risk Premium Based Studies
Using Holding Period Returns and
Projected Market Appreciation of the S&P Utility Index

Line No.		Implied Equity Risk Premium
	Equity Risk Premium based on S&P Utility Index Holding Period Returns (1):	
1.	Historical Equity Risk Premium	4.16 %
2.	Regression of Historical Equity Risk Premium (2)	6.37
3.	Forecasted Equity Risk Premium Based on PRPM (3)	5.41
4.	Forecasted Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (Value Line Data) (4)	7.45
5.	Forecasted Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (Bloomberg Data) (5)	5.82
6.	Average Equity Risk Premium (6)	5.84 %

Notes:
(1) Based on S&P Public Utility Index monthly total returns and Moody's Public Utility Bond average monthly yields from 1928-2020. Holding period returns are calculated based upon income received (dividends and interest) plus the relative change in the market value of a security over a one-year holding period.

(2) This equity risk premium is based on a regression of the monthly equity risk premiums of the S&P Utility Index relative to Moody's A2 rated public utility bond yields from 1928 - 2020 referenced in note 1 above.

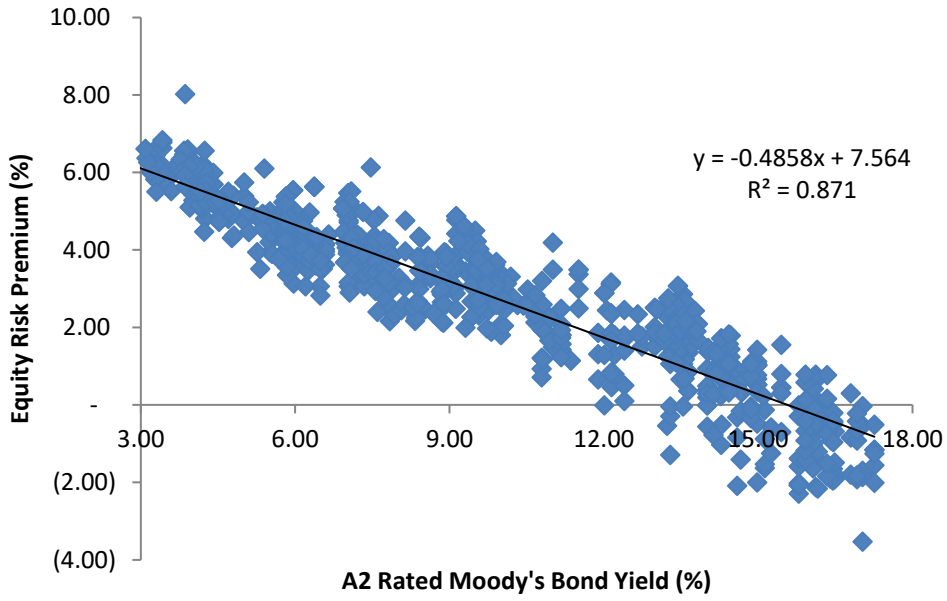
(3) The Predictive Risk Premium Model (PRPM) is applied to the risk premium of the monthly total returns of the S&P Utility Index and the monthly yields on Moody's A2 rated public utility bonds from January 1928 - May 2021.

(4) Using data from Value Line for the S&P Utilities Index, an expected return of 11.40% was derived based on expected dividend yields and long-term growth estimates as a proxy for market appreciation. Subtracting the expected A2 rated public utility bond yield of 3.95%, calculated on line 3 of page 3 of this Schedule results in an equity risk premium of 7.45%. (11.40% - 3.95% = 7.45%)

(5) Using data from Bloomberg Professional Service for the S&P Utilities Index, an expected return of 9.77% was derived based on expected dividend yields and long-term growth estimates as a proxy for market appreciation. Subtracting the expected A2 rated public utility bond yield of 3.95%, calculated on line 3 of page 3 of this Schedule results in an equity risk premium of 5.82%. (9.77% - 3.95% = 5.82%)

(6) Average of lines 1 through 5.

Atmos Energy Corporation
Prediction of Equity Risk Premiums Relative to
Moody's A2 Rated Utility Bond Yields



Constant	Slope	Prospective A2 Rated Utility Bond (1)	Prospective Equity Risk Premium
7.564001 %	-0.48585	3.95 %	5.64 %

Notes:
(1) From line 3 of page 3 of this Schedule.

Source of Information:
Regulatory Research Associates
Bloomberg Professional Services

Atmos Energy Corporation
Indicated Common Equity Cost Rate Through Use
of the Traditional Capital Asset Pricing Model (CAPM) and Empirical Capital Asset Pricing Model (ECAPM)

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Seven Natural Gas Distribution Companies	Value Line Adjusted Beta	Bloomberg Adjusted Beta	Average Beta	Market Risk Premium (1)	Risk-Free Rate (2)	Traditional CAPM Cost Rate	ECAPM Cost Rate	Indicated Common Equity Cost Rate (3)
Atmos Energy Corporation	0.80	0.91	0.86	9.46 %	2.88 %	11.02 %	11.35 %	11.18 %
New Jersey Resources Corporation	1.00	0.97	0.98	9.46	2.88	12.15	12.20	12.17
Northwest Natural Holding Company	0.85	0.85	0.85	9.46	2.88	10.92	11.28	11.10
ONE Gas, Inc.	0.80	1.00	0.90	9.46	2.88	11.39	11.63	11.51
South Jersey Industries, Inc.	1.05	0.98	1.02	9.46	2.88	12.53	12.48	12.51
Southwest Gas Holdings, Inc.	0.95	1.09	1.02	9.46	2.88	12.53	12.48	12.51
Spire Inc.	0.85	1.00	0.92	9.46	2.88	11.58	11.77	11.68
Mean			0.94			11.73 %	11.88 %	11.81 %
Median			0.92			11.58 %	11.77 %	11.68 %
Average of Mean and Median			0.93			11.66 %	11.83 %	11.75 %

Notes on page 2 of this Schedule.

Atmos Energy Corporation
Notes to Accompany the Application of the CAPM and ECAPM

Notes:

(1) The market risk premium (MRP) is derived by using six different measures from three sources: Ibbotson, Value Line, and Bloomberg as illustrated below:

Historical Data MRP Estimates:

Measure 1: Ibbotson Arithmetic Mean MRP (1926-2020)

Arithmetic Mean Monthly Returns for Large Stocks 1926-2020:	12.20 %
Arithmetic Mean Income Returns on Long-Term Government Bonds:	5.05
MRP based on Ibbotson Historical Data:	7.15 %

Measure 2: Application of a Regression Analysis to Ibbotson Historical Data
(1926-2020) 9.39 %

Measure 3: Application of the PRPM to Ibbotson Historical Data:
(January 1926 - May 2021) 10.04 %

Value Line MRP Estimates:

Measure 4: Value Line Projected MRP (Thirteen weeks ending May 28, 2021)

Total projected return on the market 3-5 years hence*:	8.16 %
Projected Risk-Free Rate (see note 2):	2.88
MRP based on Value Line Summary & Index:	5.28 %

*Forcasted 3-5 year capital appreciation plus expected dividend yield

Measure 5: Value Line Projected Return on the Market based on the S&P 500

Total return on the Market based on the S&P 500:	14.32 %
Projected Risk-Free Rate (see note 2):	2.88
MRP based on Value Line data	11.44 %

Measure 6: Bloomberg Projected MRP

Total return on the Market based on the S&P 500:	16.34 %
Projected Risk-Free Rate (see note 2):	2.88
MRP based on Bloomberg data	13.46 %

Average of Value Line, Ibbotson, and Bloomberg MRP: 9.46 %

(2) For reasons explained in the direct testimony, the appropriate risk-free rate for cost of capital purposes is the average forecast of 30 year Treasury Bonds per the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts. (See pages 10 and 11 of Schedule DWD-3.) The projection of the risk-free rate is illustrated below:

Second Quarter 2021	2.40 %
Third Quarter 2021	2.50
Fourth Quarter 2021	2.60
First Quarter 2022	2.60
Second Quarter 2022	2.70
Third Quarter 2022	2.80
2023-2027	3.50
2028-2032	3.90
	2.88 %

(3) Average of Column 6 and Column 7.

Sources of Information:
Value Line Summary and Index
Blue Chip Financial Forecasts, June 1, 2021
Stocks, Bonds, Bills, and Inflation - 2021 SBBI Yearbook, John Wiley & Sons, Inc.
Bloomberg Professional Services

Atmos Energy Corporation
Basis of Selection of Comparable Risk
Domestic Non-Price Regulated Companies

Proxy Group of Seven Natural Gas Distribution Companies	[1] Value Line Adjusted Beta	[2] Unadjusted Beta	[3] Residual Standard Error of the Regression	[4] Standard Deviation of Beta
Atmos Energy Corporation	0.80	0.66	2.7453	0.0685
New Jersey Resources Corporation	0.95	0.92	3.0205	0.0754
Northwest Natural Holding Company	0.80	0.69	3.1454	0.0785
ONE Gas, Inc.	0.80	0.67	2.7077	0.0676
South Jersey Industries, Inc.	1.05	1.00	3.4767	0.0868
Southwest Gas Holdings, Inc.	0.95	0.88	3.0244	0.0755
Spire Inc.	0.85	0.71	2.8287	0.0706
Average	0.89	0.79	2.9927	0.0747
Beta Range (+/- 2 std. Devs. of Beta)	0.64	0.94		
2 std. Devs. of Beta	0.15			
Residual Std. Err. Range (+/- 2 std. Devs. of the Residual Std. Err.)	2.7297	3.2557		
Std. dev. of the Res. Std. Err.	0.1315			
2 std. devs. of the Res. Std. Err.	0.2630			

Source of Information: Valueline Proprietary Database, March 2021

Atmos Energy Corporation
Proxy Group of Non-Price Regulated Companies
Comparable in Total Risk to the
Proxy Group of Seven Natural Gas Distribution Companies

Proxy Group of Forty-Eight Non-Price Regulated Companies	[1] VL Adjusted Beta	[2] Unadjusted Beta	[3] Residual Standard Error of the Regression	[4] Standard Deviation of Beta
Apple Inc.	0.90	0.81	3.1746	0.0792
Abbott Labs.	0.95	0.88	2.7401	0.0684
Assurant Inc.	0.90	0.84	2.9537	0.0737
ANSYS, Inc.	0.85	0.74	2.8841	0.0720
Booz Allen Hamilton	0.90	0.82	3.0468	0.0760
Becton, Dickinson	0.80	0.66	2.8952	0.0722
Brown-Forman 'B'	0.90	0.77	2.7453	0.0685
Broadridge Fin'l	0.85	0.70	2.7332	0.0682
Brady Corp.	1.00	0.93	3.0007	0.0749
CACI Int'l	0.95	0.86	3.1684	0.0791
Casey's Gen'l Stores	0.90	0.78	3.2522	0.0812
Cadence Design Sys.	0.90	0.79	3.0338	0.0757
Cerner Corp.	0.90	0.84	2.7309	0.0681
CSW Industrials	0.90	0.81	2.8884	0.0721
Quest Diagnostics	0.85	0.75	2.7411	0.0684
Lauder (Estee)	0.95	0.85	2.8216	0.0704
Exponent, Inc.	0.90	0.79	2.9131	0.0727
Fastenal Co.	0.90	0.85	3.2203	0.0804
Gentex Corp.	0.95	0.91	2.7546	0.0687
Int'l Flavors & Frag	0.95	0.87	3.2238	0.0804
Ingredion Inc.	0.90	0.78	2.8793	0.0718
Iron Mountain	0.90	0.82	3.0897	0.0771
Hunt (J.B.)	0.95	0.86	2.8344	0.0707
J&J Snack Foods	0.90	0.84	2.9208	0.0729
Henry (Jack) & Assoc	0.85	0.71	2.7734	0.0692
ManTech Int'l 'A'	0.85	0.77	3.0653	0.0765
McCormick & Co.	0.80	0.66	2.7887	0.0696
Altria Group	0.90	0.83	2.9215	0.0729
MSA Safety	1.00	0.94	3.0076	0.0750
MSCI Inc.	0.95	0.87	2.9662	0.0740
Motorola Solutions	0.90	0.80	2.7926	0.0697
Vail Resorts	0.95	0.88	3.1939	0.0797
Maxim Integrated	0.95	0.87	2.9404	0.0734
Northrop Grumman	0.85	0.71	2.9032	0.0724
Old Dominion Freight	0.90	0.83	3.0708	0.0766
PerkinElmer Inc.	0.95	0.86	2.8896	0.0721
Philip Morris Int'l	0.95	0.88	3.2481	0.0811
Pool Corp.	0.85	0.75	3.2001	0.0799
Post Holdings	0.95	0.86	3.0105	0.0751
RLI Corp.	0.80	0.64	2.9883	0.0746
Rollins, Inc.	0.85	0.73	2.9697	0.0741
Selective Ins. Group	0.85	0.77	3.0004	0.0749
Sirius XM Holdings	0.95	0.91	2.7995	0.0699
Bio-Techne Corp.	0.80	0.67	3.2475	0.0810
Tetra Tech	0.90	0.84	3.0245	0.0755
Waters Corp.	0.95	0.86	2.7531	0.0687
West Pharmac. Svcs.	0.85	0.70	3.1887	0.0796
Western Union	0.80	0.67	2.7346	0.0682
Average	0.90	0.80	2.9609	0.0739
Proxy Group of Seven Natural Gas Distribution Companies	0.89	0.79	2.9927	0.0747

Source of Information: Valueline Proprietary Database, March 2021

Atmos Energy Corporation
Summary of Cost of Equity Models Applied to
Proxy Group of Forty-Eight Non-Price Regulated Companies
Comparable in Total Risk to the
Proxy Group of Seven Natural Gas Distribution Companies

Principal Methods	Proxy Group of Forty-Eight Non-Price Regulated Companies
Discounted Cash Flow Model (DCF) (1)	12.83 %
Risk Premium Model (RPM) (2)	12.49
Capital Asset Pricing Model (CAPM) (3)	11.69
	12.34 %
	12.49 %
	12.42 %

Notes:
(1) From page 2 of this Schedule.
(2) From page 3 of this Schedule.
(3) From page 6 of this Schedule.

Atmos Energy Corporation
DCF Results for the Proxy Group of Non-Price-Regulated Companies Comparable in Total Risk to the
Proxy Group of Seven Natural Gas Distribution Companies

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Forty-Eight Non-Price Regulated Companies	Average Dividend Yield	Value Line Projected Five Year Growth in EPS	Zack's Five Year Projected Growth Rate in EPS	Bloomberg's Five Year Projected Growth Rate in EPS	Yahoo! Finance Projected Five Year Growth in EPS	Average Projected Five Year Growth Rate in EPS	Adjusted Dividend Yield	Indicated Common Equity Cost Rate (1)
Apple Inc.	0.69 %	14.50 %	12.50 %	12.10 %	17.93 %	14.26 %	0.74 %	15.00 %
Abbott Labs.	1.51	11.50	13.80	13.63	16.49	13.86	1.61	15.47
Assurant Inc.	1.76	11.50	17.50	17.50	17.50	16.00	1.90	17.90
ANSYS, Inc.	-	8.00	12.30	12.58	10.74	10.90	-	NA
Booz Allen Hamilton	1.80	10.50	10.60	13.00	9.67	10.94	1.90	12.84
Becton, Dickinson	1.35	7.50	8.90	8.30	11.85	9.14	1.41	10.55
Brown-Forman 'B'	0.97	11.00	NA	5.39	7.40	7.93	1.01	8.94
Broadridge Fin'l	1.48	8.50	NA	12.30	11.60	10.80	1.56	12.36
Brady Corp.	1.59	7.50	7.00	9.00	7.00	7.63	1.65	9.28
CACI Int'l	-	13.50	13.10	12.06	13.68	13.08	-	NA
Casey's Gen'l Stores	0.63	8.00	NA	15.81	7.85	10.55	0.66	11.21
Cadence Design Sys.	-	9.50	14.40	11.60	14.40	12.48	-	NA
Cerner Corp.	1.18	8.00	12.30	10.46	11.63	10.60	1.24	11.84
CSW Industrials	0.45	8.50	NA	12.00	12.00	10.83	0.47	11.30
Quest Diagnostics	1.91	10.00	26.50	(5.40)	3.26	13.25	2.04	15.29
Lauder (Estee)	0.71	11.00	10.70	18.20	27.18	16.77	0.77	17.54
Exponent, Inc.	0.83	12.50	NA	13.30	15.00	13.60	0.89	14.49
Fastenal Co.	2.21	8.00	9.00	8.70	7.95	8.41	2.30	10.71
Gentex Corp.	1.35	10.50	10.10	13.15	15.80	12.39	1.43	13.82
Int'l Flavors & Frag	2.20	7.50	9.80	21.48	7.72	11.63	2.33	13.96
Ingredion Inc.	2.76	7.50	NA	11.00	1.90	6.80	2.85	9.65
Iron Mountain	6.32	11.50	1.70	0.66	1.70	3.89	6.44	10.33
Hunt (J.B.)	0.71	8.00	15.00	15.00	21.53	14.88	0.76	15.64
J&J Snack Foods	1.55	10.00	NA	NA	6.00	8.00	1.61	9.61
Henry (Jack) & Assoc	1.18	9.00	10.90	12.47	10.64	10.75	1.24	11.99
ManTech Int'l 'A'	1.79	9.00	5.10	5.53	3.87	5.88	1.84	7.72
McCormick & Co.	1.53	5.50	6.70	5.87	6.00	6.02	1.58	7.60
Altria Group	6.94	6.00	4.00	4.35	4.35	4.68	7.10	11.78
MSA Safety	1.10	6.50	NA	9.00	18.00	11.17	1.16	12.33
MSCI Inc.	0.69	16.00	NA	15.00	15.31	15.44	0.74	16.18
Motorola Solutions	1.49	7.00	9.00	12.20	7.37	8.89	1.56	10.45
Vail Resorts	-	9.50	NA	87.08	72.95	56.51	-	NA
Maxim Integrated	-	8.00	10.00	11.95	21.91	12.97	-	NA
Northrop Grumman	1.84	7.00	NA	5.67	5.77	6.15	1.90	8.05
Old Dominion Freight	0.32	9.00	17.20	18.98	18.93	16.03	0.35	16.38
PerkinElmer Inc.	0.21	11.00	37.90	5.66	37.90	23.11	0.23	23.34
Philip Morris Int'l	5.19	6.50	8.70	10.75	12.75	9.67	5.44	15.11
Pool Corp.	0.83	15.00	NA	NA	17.00	16.00	0.90	16.90
Post Holdings	-	11.00	NA	20.30	31.20	20.83	-	NA
RLI Corp.	0.89	12.50	NA	NA	9.80	11.15	0.94	12.09
Rollins, Inc.	0.91	11.50	NA	NA	8.20	9.85	0.95	10.80
Selective Ins. Group	1.33	8.50	9.50	9.51	5.10	8.15	1.38	9.53
Sirius XM Holdings	0.96	35.50	12.70	40.32	10.10	24.66	1.08	25.74
Bio-Techne Corp.	0.32	12.50	14.00	19.03	15.00	15.13	0.34	15.47
Tetra Tech	0.62	13.50	15.00	13.85	15.00	14.34	0.66	15.00
Waters Corp.	-	6.00	7.10	8.19	7.77	7.26	-	NA
West Pharmac. Svcs.	0.22	17.00	25.80	18.55	25.80	21.79	0.24	22.03
Western Union	3.74	6.00	NA	4.57	9.19	6.59	3.86	10.45
							Mean	13.33 %
							Median	12.33 %
							Average of Mean and Median	12.83 %

NA= Not Available

(1) The application of the DCF model to the domestic, non-price regluated comparable risk companies is identical to the application of the DCF to the Utility Proxy Group. The dividend yield is derived by using the 60 day average price and the spot indicated dividend as of May 28, 2021. The dividend yield is then adjusted by 1/2 the average projected growth rate in EPS, which is calculated by averaging the 5 year projected growth in EPS provided by Value Line, www.zacks.com, Bloomberg Professional Services, and www.yahoo.com (excluding any negative growth rates) and then adding that growth rate to the adjusted dividend yield.

Source of Information:
Value Line Investment Survey
www.zacks.com Downloaded on 05/28/2021
www.yahoo.com Downloaded on 05/28/2021
Bloomberg Professional Services

Atmos Energy Corporation
Indicated Common Equity Cost Rate
Through Use of a Risk Premium Model
Using an Adjusted Total Market Approach

Line No.		Proxy Group of Forty-Eight Non-Price Regulated Companies
1.	Prospective Yield on Baa2 Rated Corporate Bonds (1)	4.46 %
2.	Equity Risk Premium (2)	8.03
3.	Risk Premium Derived Common Equity Cost Rate	12.49 %

Notes: (1) Average forecast of Baa2 corporate bonds based upon the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts dated June 1, 2021 (see pages 10 and 11 of Schedule DWD-3). The estimates are detailed below.

Second Quarter 2021	3.80 %
Third Quarter 2021	4.00
Fourth Quarter 2021	4.10
First Quarter 2022	4.20
Second Quarter 2022	4.20
Third Quarter 2022	4.30
2023-2027	5.30
2028-2032	5.80
Average	4.46 %

(2) From page 5 of this Schedule.

Atmos Energy Corporation
Comparison of Long-Term Issuer Ratings for the
Proxy Group of Forty-Eight Non-Price Regulated Companies of Comparable risk to the
Proxy Group of Seven Natural Gas Distribution Companies

	Moody's Long-Term Issuer Rating May 2021		Standard & Poor's Long-Term Issuer Rating May 2021	
Proxy Group of Forty-Eight Non-Price Regulated Companies	Long-Term Issuer Rating	Numerical Weighting (1)	Long-Term Issuer Rating	Numerical Weighting (1)
Apple Inc.	Aa1	2.0	AA+	2.0
Abbott Labs.	A2	6.0	A+	5.0
Assurant Inc.	Baa3	10.0	BBB	9.0
ANSYS, Inc.	NA	--	NA	--
Booz Allen Hamilton	NA	--	NA	--
Becton, Dickinson	Baa3	10.0	BBB	9.0
Brown-Forman 'B'	A1	5.0	A-	7.0
Broadridge Fin'l	Baa1	8.0	BBB+	8.0
Brady Corp.	NA	--	NA	--
CACI Int'l	NA	--	BB+	11.0
Casey's Gen'l Stores	NA	--	NA	--
Cadence Design Sys.	Baa2	9.0	BBB+	8.0
Cerner Corp.	NA	--	NA	--
CSW Industrials	NA	--	NA	--
Quest Diagnostics	Baa2	9.0	BBB+	8.0
Lauder (Estee)	A1	5.0	A+	5.0
Exponent, Inc.	NA	--	NA	--
Fastenal Co.	NA	--	NA	--
Gentex Corp.	NA	--	NA	--
Int'l Flavors & Frag	Baa3	10.0	BBB	9.0
Ingredion Inc.	Baa1	8.0	BBB	9.0
Iron Mountain	Ba3	13.0	BB-	13.0
Hunt (J.B.)	Baa1	8.0	BBB+	8.0
J&J Snack Foods	NA	--	NA	--
Henry (Jack) & Assoc	NA	--	NA	--
ManTech Int'l 'A'	WR	--	BB+	11.0
McCormick & Co.	Baa2	9.0	BBB	9.0
Altria Group	A3	7.0	BBB	9.0
MSA Safety	NA	--	NA	--
MSCI Inc.	Ba1	11.0	BB+	11.0
Motorola Solutions	Baa3	10.0	BBB-	10.0
Vail Resorts	B2	15.0	BB	12.0
Maxim Integrated	Baa1	8.0	BBB+	8.0
Northrop Grumman	Baa2	9.0	BBB+	8.0
Old Dominion Freight	NA	--	NA	--
PerkinElmer Inc.	Baa3	10.0	BBB	9.0
Philip Morris Int'l	A2	6.0	A	6.0
Pool Corp.	NA	--	NA	--
Post Holdings	B2	15.0	B+	14.0
RLI Corp.	Baa2	9.0	BBB	9.0
Rollins, Inc.	NA	--	NA	--
Selective Ins. Group	Baa2	9.0	BBB	9.0
Sirius XM Holdings	NA	--	BB	12.0
Bio-Techne Corp.	NA	--	NA	--
Tetra Tech	NA	--	NA	--
Waters Corp.	NA	--	NA	--
West Pharmac. Svcs.	NA	--	NA	--
Western Union	Baa2	9.0	BBB	9.0
Average	Baa2	8.8	BBB	8.9

Notes:
(1) From page 6 of Schedule DWD-3.

Source of Information:
Bloomberg Professional Services

Atmos Energy Corporation
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for
Proxy Group of Forty-Eight Non-Price Regulated Companies of Comparable risk to the
Proxy Group of Seven Natural Gas Distribution Companies

Line No.	Equity Risk Premium Measure	Proxy Group of Forty-Eight Non-Price Regulated Companies
	Ibbotson-Based Equity Risk Premiums:	
1.	Ibbotson Equity Risk Premium (1)	5.92 %
2.	Regression on Ibbotson Risk Premium Data (2)	8.69
3.	Ibbotson Equity Risk Premium based on PRPM (3)	9.02
4.	Equity Risk Premium Based on Value Line Summary and Index (4)	4.60
5	Equity Risk Premium Based on Value Line S&P 500 Companies (5)	10.76
6.	Equity Risk Premium Based on Bloomberg S&P 500 Companies (6)	12.78
7.	Conclusion of Equity Risk Premium	8.63 %
8.	Adjusted Beta (7)	0.93
9.	Forecasted Equity Risk Premium	8.03 %

Notes:
(1) From note 1 of page 9 of Schedule DWD-3.
(2) From note 2 of page 9 of Schedule DWD-3.
(3) From note 3 of page 9 of Schedule DWD-3.
(4) From note 4 of page 9 of Schedule DWD-3.
(5) From note 5 of page 9 of Schedule DWD-3.
(6) From note 6 of page 9 of Schedule DWD-3.
(7) Average of mean and median beta from page 6 of this Schedule.

Sources of Information:
Stocks, Bonds, Bills, and Inflation - 2021 SBBI Yearbook, John Wiley & Sons, Inc.
Value Line Summary and Index
Blue Chip Financial Forecasts, June 1, 2021
Bloomberg Professional Services

Atmos Energy Corporation
Traditional CAPM and ECAPM Results for the Proxy Group of Non-Price-Regulated Companies Comparable in Total Risk to the
Proxy Group of Seven Natural Gas Distribution Companies

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Forty-Eight Non-Price Regulated Companies	Value Line Adjusted Beta	Bloomberg Beta	Average Beta	Market Risk Premium (1)	Risk-Free Rate (2)	Traditional CAPM Cost Rate	ECAPM Cost Rate	Indicated Common Equity Cost Rate (3)
Apple Inc.	0.90	1.01	0.96	9.46 %	2.88 %	11.96 %	12.06 %	12.01 %
Abbott Labs.	0.90	0.85	0.88	9.46	2.88	11.20	11.49	11.35
Assurant Inc.	0.90	1.00	0.95	9.46	2.88	11.87	11.99	11.93
ANSYS, Inc.	0.85	0.97	0.91	9.46	2.88	11.49	11.70	11.59
Booz Allen Hamilton	0.90	0.92	0.91	9.46	2.88	11.49	11.70	11.59
Becton, Dickinson	0.80	0.58	0.69	9.46	2.88	9.41	10.14	9.77
Brown-Forman 'B'	0.90	0.97	0.94	9.46	2.88	11.77	11.91	11.84
Broadridge Fin'l	0.80	0.84	0.82	9.46	2.88	10.64	11.06	10.85
Brady Corp.	1.00	1.05	1.02	9.46	2.88	12.53	12.48	12.51
CACI Int'l	0.95	1.01	0.98	9.46	2.88	12.15	12.20	12.17
Casey's Gen'l Stores	0.90	0.91	0.91	9.46	2.88	11.49	11.70	11.59
Cadence Design Sys.	0.90	0.98	0.94	9.46	2.88	11.77	11.91	11.84
Cerner Corp.	0.90	0.89	0.90	9.46	2.88	11.39	11.63	11.51
CSW Industrials	0.90	1.05	0.97	9.46	2.88	12.06	12.13	12.09
Quest Diagnostics	0.85	0.96	0.91	9.46	2.88	11.49	11.70	11.59
Lauder (Estee)	0.95	1.00	0.98	9.46	2.88	12.15	12.20	12.17
Exponent, Inc.	0.90	0.94	0.92	9.46	2.88	11.58	11.77	11.68
Fastenal Co.	0.90	0.95	0.92	9.46	2.88	11.58	11.77	11.68
Gentex Corp.	0.95	1.06	1.01	9.46	2.88	12.43	12.41	12.42
Int'l Flavors & Frag	0.95	1.08	1.02	9.46	2.88	12.53	12.48	12.51
Ingredion Inc.	0.90	0.92	0.91	9.46	2.88	11.49	11.70	11.59
Iron Mountain	0.90	1.02	0.96	9.46	2.88	11.96	12.06	12.01
Hunt (J.B.)	0.95	0.91	0.93	9.46	2.88	11.68	11.84	11.76
J&J Snack Foods	0.90	0.77	0.84	9.46	2.88	10.83	11.20	11.02
Henry (Jack) & Assoc	0.85	0.89	0.87	9.46	2.88	11.11	11.42	11.26
ManTech Int'l 'A'	0.85	1.11	0.98	9.46	2.88	12.15	12.20	12.17
McCormick & Co.	0.80	0.70	0.75	9.46	2.88	9.97	10.57	10.27
Altria Group	0.90	0.88	0.89	9.46	2.88	11.30	11.56	11.43
MSA Safety	1.00	0.99	1.00	9.46	2.88	12.34	12.34	12.34
MSCI Inc.	0.95	0.94	0.94	9.46	2.88	11.77	11.91	11.84
Motorola Solutions	0.90	0.96	0.93	9.46	2.88	11.68	11.84	11.76
Vail Resorts	0.95	1.14	1.05	9.46	2.88	12.81	12.69	12.75
Maxim Integrated	0.95	0.99	0.97	9.46	2.88	12.06	12.13	12.09
Northrop Grumman	0.85	0.80	0.83	9.46	2.88	10.73	11.13	10.93
Old Dominion Freight	0.95	0.97	0.96	9.46	2.88	11.96	12.06	12.01
PerkinElmer Inc.	0.90	0.84	0.87	9.46	2.88	11.11	11.42	11.26
Philip Morris Int'l	0.95	0.91	0.93	9.46	2.88	11.68	11.84	11.76
Pool Corp.	0.85	0.95	0.90	9.46	2.88	11.39	11.63	11.51
Post Holdings	0.95	0.90	0.93	9.46	2.88	11.68	11.84	11.76
RLI Corp.	0.80	0.90	0.85	9.46	2.88	10.92	11.28	11.10
Rollins, Inc.	0.85	0.69	0.77	9.46	2.88	10.16	10.71	10.44
Selective Ins. Group	0.85	0.97	0.91	9.46	2.88	11.49	11.70	11.59
Sirius XM Holdings	0.95	1.10	1.02	9.46	2.88	12.53	12.48	12.51
Bio-Techne Corp.	0.80	0.93	0.86	9.46	2.88	11.02	11.35	11.18
Tetra Tech	0.95	1.06	1.00	9.46	2.88	12.34	12.34	12.34
Waters Corp.	0.95	0.86	0.91	9.46	2.88	11.49	11.70	11.59
West Pharmac. Svcs.	0.80	0.75	0.78	9.46	2.88	10.26	10.78	10.52
Western Union	0.80	1.05	0.93	9.46	2.88	11.68	11.84	11.76
		Mean	0.92			11.55 %	11.75 %	11.65 %
		Median	0.93			11.63 %	11.81 %	11.72 %
		Average of Mean and Median	0.93			11.59 %	11.78 %	11.69 %

Notes:
(1) From note 1 of page 2 of Schedule DWD-4.
(2) From note 2 of page 2 of Schedule DWD-4.
(3) Average of CAPM and ECAPM cost rates.

Atmos Energy Corporation
Derivation of Investment Risk Adjustment Based upon
Ibbotson Associates' Size Premia for the Decile Portfolios of the NYSE/AMEX/NASDAQ

Line No.		[1] Market Capitalization on May 28, 2021 (1) (millions)		[2] Applicable Decile of the NYSE/AMEX/ NASDAQ (2)	[3] Applicable Size Premium (3)	[4] Spread from Applicable Size Premium (4)
1.	Atmos Energy Corporation	$ 597.101		8	1.46%	
2.	Proxy Group of Seven Natural Gas Distribution Companies	$ 4,615.314	7.7 x	4	0.75%	0.71%
			[A]	[B]	[C]	[D]

Decile		Market Capitalization of Smallest Company (millions)	Market Capitalization of Largest Company (millions)	Size Premium (Return in Excess of CAPM)*
Largest	1	$ 29,025.803	$ 1,966,078.882	-0.22%
	2	13,178.743	28,808.073	0.49%
	3	6,743.361	13,177.828	0.71%
	4	3,861.858	6,710.676	0.75%
	5	2,445.693	3,836.536	1.09%
	6	1,591.865	2,444.745	1.37%
	7	911.586	1,591.765	1.54%
	8	451.955	911.103	1.46%
	9	190.019	451.800	2.29%
Smallest	10	2.194	189.831	5.01%

*From 2021 Duff & Phelps Cost of Capital Navigator

Notes:

(1) From page 2 of this Schedule.

(2) Gleaned from Columns [B] and [C] on the bottom of this page. The appropriate decile (Column [A]) corresponds to the market capitalization of the proxy group, which is found in Column [1].

(3) Corresponding risk premium to the decile is provided in Column [D] on the bottom of this page.

(4) Line No. 1 Column [3] – Line No. 2 Column [3]. For example, the 0.71% in Column [4], Line No. 2 is derived as follows 0.71% = 1.46% - 0.75%.

Atmos Energy Corporation
Market Capitalization of Atmos Energy Corporation and the
Proxy Group of Seven Natural Gas Distribution Companies

Company	Exchange	[1] Common Stock Shares Outstanding at Fiscal Year End 2020 (millions)	[2] Book Value per Share at Fiscal Year End 2020 (1)	[3] Total Common Equity at Fiscal Year End 2020 (millions)	[4] Closing Stock Market Price on May 28, 2021	[5] Market-to-Book Ratio on May 28, 2021 (2)	[6] Market Capitalization on May 28, 2021 (3) (millions)
Atmos Energy Corporation		NA	NA	340.035 (4)	NA		
Based upon Proxy Group of Seven Natural Gas Distribution Companies						175.6 (5)	$ 597.101 (6)
Proxy Group of Seven Natural Gas Distribution Companies							
Atmos Energy Corporation	NYSE	$ 125.882	$ 53.949	$ 6,791.203	$ 99.170	183.8 %	$ 12,483.765
New Jersey Resources Corporation	NYSE	95.949	19.226	1,844.692	42.720	222.2	4,098.949
Northwest Natural Holding Company	NYSE	30.589	29.054	888.733	52.880	182.0	1,617.546
ONE Gas, Inc.	NYSE	53.167	42.006	2,233.311	74.320	176.9	3,951.352
South Jersey Industries, Inc.	NYSE	100.592	16.571	1,666.876	26.660	160.9	2,681.781
Southwest Gas Holdings, Inc.	NYSE	57.193	46.771	2,674.953	66.010	141.1	3,775.305
Spire Inc.	NYSE	51.612	44.182	2,280.300	71.660	162.2	3,698.501
Average		$ 73.569	$ 35.966	$ 2,625.724	$ 61.917	175.6 %	$ 4,615.314

NA= Not Available

Notes: (1) Column 3 / Column 1.
(2) Column 4 / Column 2.
(3) Column 1 * Column 4.
(4) Requested rate base multiplied by the initial requested common equity ratio.
(5) The market-to-book ratio of Atmos Energy Corporation on May 28, 2021 is assumed to be equal to the market-to-book ratio of Proxy Group of Seven Natural Gas Distribution Companies on May 28, 2021 as appropriate.
(6) Column [3] multiplied by Column [5].

Source of Information: 2020 Annual Forms 10K
yahoo.finance.com
Bloomberg Professional

Atmos Energy Corporation
Derivation of the Flotation Cost Adjustment to the Cost of Common Equity

Equity Issuances and Flotation Costs for FY 2019, 2018, 2017, and 2016

		[Column 1]	[Column 2]	[Column 3]	[Column 4]	[Column 5]	[Column 6]	[Column 7]
Fiscal Year	Transaction (1)	Shares Issued	Average Offering Price per Share (2)	Net Proceeds per Share (3)	Gross Equity Issue before Costs	Total Net Proceeds	Total Flotation Costs (4)	Flotation Cost Percentage (5)
2019	At the Market Equity Offering	5,390,836	$ 92.7500	$ 91.6555	$ 500,000,000	$ 494,100,000	$ 5,900,000	1.18%
2018	At the Market Equity Offering	4,558,404	$ 87.7500	$ 86.6751	$ 400,000,000	$ 395,100,000	$ 4,900,000	1.23%
2017	At the Market Equity Offering	1,303,494	$ 76.7169	$ 75.7963	$ 100,000,000	$ 98,800,000	$ 1,200,000	1.20%
2016	At the Market Equity Offering	1,360,756	$ 73.4886	$ 72.4597	$ 100,000,000	$ 98,600,000	$ 1,400,000	1.40%
					$ 1,100,000,000	$ 1,086,600,000	$ 13,400,000	1.22%

Flotation Cost Adjustment

	Average Dividend Yield	Average Projected EPS Growth Rate	Adjusted Dividend Yield	Average DCF Cost Rate Unadjusted for Flotation (6)	DCF Cost Rate Adjusted for Flotation (7)	Flotation Cost Adjustment (8)
Proxy Group of Seven Natural Gas Distribution Companies	3.44 %	6.02 %	3.54 %	9.56 %	9.60 %	0.04 %

See page 2 of this Schedule for notes.

Source of Information: Company SEC filings

Summary of Adjustment Clauses & Alternative Regulation/Incentive Plans

			Adjustment Clauses					Alternative Regulation / Incentive Plans	
Company	Parent	State	Gas Commodity/Supply	Decoupling (F/P) [1]	Capital Investment [2]	Energy Efficiency [3]	Other [4]	Formula-Based Rates	Earnings Sharing/PBR
Atmos Energy	ATO	Colorado	✓		✓	✓	✓		
Atmos Energy	ATO	Kansas	✓	P	✓		✓		
Atmos Energy	ATO	Kentucky	✓	P	✓	✓			✓
Atmos Energy	ATO	Louisiana	✓	P	✓			✓	✓
Atmos Energy	ATO	Mississippi	✓	P	✓	✓	✓	✓	
Atmos Energy	ATO	Tennessee	✓	P	✓			✓	✓
Atmos Energy	ATO	Texas	✓	P	✓	✓	✓	✓	
Atmos Energy	ATO	Virginia	✓	P	✓				
New Jersey Natural Gas	NJR	New Jersey	✓	F	✓	✓	✓		
Northwest Natural Gas	NWN	Oregon	✓	P		✓	✓		
Northwest Natural Gas	NWN	Washington	✓			✓	✓		
Kansas Gas Service	OGS	Kansas	✓	P	✓		✓		
Oklahoma Natural Gas	OGS	Oklahoma	✓	P	✓	✓	✓	✓	✓
Texas Gas Service	OGS	Texas	✓	P	✓	✓	✓	✓	
Elizabethtown Gas	SJI	New Jersey	✓	P	✓	✓	✓		
South Jersey Gas	SJI	New Jersey	✓	F	✓	✓	✓		
Alabama Gas Corporation	SR	Alabama	✓	P	✓		✓	✓	
Spire Gulf Inc. (Mobile Gas Corporation)	SR	Alabama	✓	P	✓		✓	✓	
Spire Missouri East	SR	Missouri	✓	P	✓		✓		
Spire Missouri West	SR	Missouri	✓	P	✓		✓		
Southwest Gas Corporation	SWX	Arizona	✓	F	✓	✓	✓		
Southwest Gas Corporation	SWX	California	✓	F	✓	✓	✓		
Southwest Gas Corporation	SWX	Nevada	✓	F	✓	✓	✓		

Notes:

Note: A mechanism may cover one or more cost categories; therefore, designations may not indicate separate mechanisms for each category.

[1] Full or partial decoupling (such as Fixed Variable rate design, weather normalization clauses, and recovery of lost revenues as a result of Energy Efficiency programs). All full or partial decoupling mechanisms include weather normalization adjustments.

[2] Includes recovery of costs related to infrastructure replacement, system integrity/hardening, and other capital expenditures.

[3] Utility-sponsored conservation, energy efficiency, or other demand side management programs.

[4] Pension expenses, bad debt costs, storm costs, transmission/transportation costs, environmental, regulatory fee, government & franchise fees and taxes, economic development, and low income programs.

Sources: Operating company tariffs; Regulatory Research Associates, Alternative Ratemaking Plans in the US, April 16, 2020; Regulatory Research Associates, *Adjustment Clauses: A State-by-State Overview,* November 12, 2019; *Edison Electric Institute, Alternative Regulation for Emerging Utility Challenges: 2015 Update, November 11, 2015*.

ATMOS ENERGY CORPORATION
(NAME OF UTILITY)

Pipeline Replacement Program Rider
PRP

1. Applicable

Applicable to all customers receiving service under the Company's Rate Schedules G-1, G-2, T-3 and T-4.

2. Calculation of Pipe Replacement Rider Revenue Requirement

The PRP Revenue Requirement includes the following:

a) PRP-related Plant In-Service not included in base gas rates minus the associated PRP-related accumulated depreciation and accumulated deferred income taxes;
b) Retirement and removal of plant related PRP construction;
c) Overall rate of return will be established in the annual PRP rate application.
d) Depreciation expense on the PRP related Plant In-Service less retirement and removals;
e) Reduction for savings in Operating and Maintenance expenses; and,
f) Adjustment for ad valorem taxes;
g) PRP Rate base in any forecasted period will be calculated in a manner consistent with 807 KAR 5:001, Section 16(6)(c);

3. Pipe Replacement Program Factors

All customers receiving service under tariff Rate Schedules G-1, G-2, T-3 and T-4 shall be assessed an adjustment to their applicable rate schedule that will enable the Company to complete the pipe replacement program. The allocation to G-1 residential, G-1 non-residential, G-2, T-3 and T-4 will be in proportion to their relative base revenue share approved in the Company's most recently concluded base rate case.

The PRP Rider may be filed annually on or around August 1st of each year. The filing will reflect the anticipated impact on the Company's revenue requirements of net plant additions related to bare-steel and Aldyl-A pipe replacement as offset by operations and maintenance expense reductions during the upcoming fiscal year ending each September as well as a balancing adjustment to reconcile collections with actual investment for the program year from two years prior. Such adjustment to the Rider will become effective with meter readings on and after the first billing cycle of October. (T) (T)

DATE OF ISSUE July 30, 2021
Month/Date/Year

DATE EFFECTIVE October 1, 2021
Month/Date/Year

ISSUED BY /s/ Brannon C. Taylor
Signature of Officer

TITLE Vice President – Rates and Regulatory Affairs

ATMOS ENERGY CORPORATION
(NAME OF UTILITY)

Pipeline Replacement Program Rider

4. Pipe Replacement Rider Rates

The charges for the respective gas service schedules for the revenue month beginning October 1, 2021 per billing period are: (T)

	Monthly Customer Charge		Distribution Charge per Mcf	
Rate G-1 (Residential)	$2.47		$0.00	(I,-)
Rate G-1 (Non-Residential)	$8.20		$0.00	(I,-)
Rate G-2	$48.14	1-15,000	$0.0975 per 1000 cubic feet	(I,I)
		Over 15,000	$0.0748 per 1000 cubic feet	(I)
Rate T-3	$41.59	1-15,000	$0.0793 per 1000 cubic feet	(I,I)
		Over 15,000	$0.0608 per 1000 cubic feet	(I)
Rate T-4	$42.00	1-300	$0.1265 per 1000 cubic feet	(I,I)
		301-15,000	$0.0874 per 1000 cubic feet	(I)
		Over 15,000	$0.0698 per 1000 cubic feet	(I)

DATE OF ISSUE July 30, 2021
Month/Date/Year

DATE EFFECTIVE October 1, 2021
Month/Date/Year

ISSUED BY /s/ Brannon C. Taylor
Signature of Officer

TITLE Vice President – Rates and Regulatory Affairs

Atmos Energy Corporation
Pipe Replacement Program Filing
Table of Contents

ATMOS ENERGY CORPORATION
KENTUCKY PIPE REPLACEMENT PROGRAM
SURCHARGE CALCULATION OF FORECASTED ACTIVITY
AS OF OCTOBER 2021 THROUGH SEPTEMBER 2022
SURCHARGE SUMMARY

Line Number	Tariff Schedule		Customer Charge	Volumetric Charge
1	RESIDENTIAL (Rate G-1)		$ 2.47	0.0000
2	NON-RESIDENTIAL (Rate G-1)		$ 8.20	0.0000
3	INTERRUPTIBLE (Rate G-2)		$ 48.14	
4		Sales: 1-15,000		0.0975
5		Sales: Over 15,000		0.0748
6	TRANSPORTATION (T-3)		$ 41.59	
7		Interrupt Transport: 1-15,000		0.0793
8		Interrupt Transport: Over 15,000		0.0608
9	TRANSPORTATION (T-4)		$ 42.00	
10		Firm Transport: 1-300		0.1265
11		Firm Transport: 301-15,000		0.0874
12		Firm Transport: Over 15,000		0.0698

ATMOS ENERGY CORPORATION
KENTUCKY PIPE REPLACEMENT PROGRAM
SURCHARGE CALCULATION OF FORECASTED ACTIVITY
AS OF OCTOBER 2021 THROUGH SEPTEMBER 2022
DEFICIENCY

Line Number	Description	Total
1	Project Additions	$ 66,948,567
2	Project Retirements	$ (10,674,151)
3	**Net Change to Gross Plant**	$ 56,274,416
4		
5	Cost of Removal to Accumulated Depr.	$ 3,418,765
6	Retirements from Accumulated Depr.	10,674,151
7	Depreciation Accrual to Accumulated Depr.	(1,272,172)
8	**Net Change to Accumulated Depreciation**	12,820,744
9		
10	**Net Change to Net Plant**	$ 69,095,159
11		
12	Accumulated Deferred Income Taxes	(1,226,495)
13	**Net Change to Rate Base**	$ 67,868,665
14		
15	Rate of Return	7.66%
16	**Required Operating Income**	$ 5,199,270
17		
18	Depreciation & Amortization Expense	980,195
19	O&M Savings	(36,171)
20	Ad Valorem Tax Increase	448,829
21	Income Taxes on Cost of Service Items	(347,517)
22	Income Taxes on Adjusted Interest Expense	(297,366)
23	**Operating Income at Present Rates**	$ 747,971
24		
25	Deficiency	$ 5,947,241
26	Tax Factor	74.52%
27	**Total Rate Adjustment**	$ 7,980,233
28		
29	Project Cost True-up	$ (9,219)
30	Revenue Recovery True-up	130,277
31	**Total True-up**	$ 121,058
32		
33	**Total Rate Adjustment**	$ 8,101,291

ATMOS ENERGY CORPORATION
KENTUCKY PIPE REPLACEMENT PROGRAM
SURCHARGE CALCULATION OF FORECASTED ACTIVITY
AS OF OCTOBER 2021 THROUGH SEPTEMBER 2022
NET RATE BASE FOR FISCAL YEAR 2022

Line No.	Description	Cumulative balance as of Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	13-Month Average
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Net Investment														
1	Plant in Service	$ 52,460,999	$ 55,621,394	$ 57,379,909	$ 59,575,369	$ 62,224,702	$ 64,459,935	$ 66,648,134	$ 69,098,894	$ 71,481,811	$ 73,981,458	$ 76,579,398	$ 79,010,473	$ 81,808,893	$ 66,948,567
2	Retirements	$ (7,720,264)	$ (8,322,767)	$ (8,662,665)	$ (9,126,983)	$ (9,677,440)	$ (10,148,934)	$ (10,611,085)	$ (11,121,121)	$ (11,618,330)	$ (12,137,444)	$ (12,676,769)	$ (13,183,458)	$ (13,756,707)	$ (10,674,151)
3	Investments Activity (Additions n	$ 44,740,735	$ 47,298,627	$ 48,717,244	$ 50,448,387	$ 52,547,262	$ 54,311,002	$ 56,037,048	$ 57,977,773	$ 59,863,481	$ 61,844,014	$ 63,902,629	$ 65,827,015	$ 68,052,186	$ 56,274,416
4															
5															
6	**Accumulated Depreciation**														
7															
8	Depreciation Expense	$ (824,203)	$ (891,319)	$ (959,404)	$ (1,028,992)	$ (1,100,549)	$ (1,174,012)	$ (1,249,613)	$ (1,327,950)	$ (1,409,493)	$ (1,495,212)	$ (1,586,714)	$ (1,686,379)	$ (1,804,398)	$ (1,272,172)
9	Retirement	$ 7,720,264	$ 8,322,767	$ 8,662,665	$ 9,126,983	$ 9,677,440	$ 10,148,934	$ 10,611,085	$ 11,121,121	$ 11,618,330	$ 12,137,444	$ 12,676,769	$ 13,183,458	$ 13,756,707	$ 10,674,151
10	Cost of Removal	$ 2,682,622	$ 2,847,899	$ 2,939,341	$ 3,049,028	$ 3,182,495	$ 3,294,307	$ 3,403,702	$ 3,527,071	$ 3,646,880	$ 3,772,833	$ 3,903,761	$ 4,026,055	$ 4,167,949	$ 3,418,765
11	Accumulated Depreciation	$ 9,578,683	$ 10,279,346	$ 10,642,602	$ 11,147,019	$ 11,759,386	$ 12,269,228	$ 12,765,175	$ 13,320,242	$ 13,855,717	$ 14,415,065	$ 14,993,815	$ 15,523,134	$ 16,120,258	$ 12,820,744
12															
13															
14	**Accumulated Deferred Income Taxes**														
15															
16	ADIT	$ (6,299,832)	$ (6,635,764)	$ (6,832,199)	$ (7,067,481)	$ (7,348,537)	$ (7,589,091)	$ (7,825,720)	$ (8,089,593)	$ (8,347,766)	$ (8,618,946)	$ (8,901,606)	$ (9,170,471)	$ (9,482,271)	$ (7,862,252)
17	NOLC Variable	$ 5,306,569	$ 5,525,296	$ 5,744,023	$ 5,962,750	$ 6,181,478	$ 6,400,205	$ 6,618,932	$ 6,837,659	$ 7,056,386	$ 7,275,114	$ 7,493,841	$ 7,712,568	$ 8,150,022	$ 6,635,757
18	**Net ADIT**	$ (993,263)	$ (1,110,468)	$ (1,088,175)	$ (1,104,730)	$ (1,167,060)	$ (1,188,886)	$ (1,206,788)	$ (1,251,934)	$ (1,291,379)	$ (1,343,832)	$ (1,407,765)	$ (1,457,903)	$ (1,332,248)	$ (1,226,495)
19															
20	**Net Rate Base (Lines 9 + 10)**	**$ 53,326,155**	**$ 56,467,505**	**$ 58,271,671**	**$ 60,490,675**	**$ 63,139,588**	**$ 65,391,344**	**$ 67,595,435**	**$ 70,046,081**	**$ 72,427,819**	**$ 74,915,247**	**$ 77,488,680**	**$ 79,892,247**	**$ 82,840,195**	**$ 67,868,665**

ATMOS ENERGY CORPORATION
KENTUCKY PIPE REPLACEMENT PROGRAM
SURCHARGE CALCULATION OF FORCASTED ACTIVITY
AS OF OCTOBER 2019 THROUGH SEPTEMBER 2020
RECOVERY SCHEDULE

Line No.	Surcharge Report	Actual Recovery Year		Approved Recovery Amt	Actual Recovery Amt	Over / (Under) Recovered	Carrying Charges	Total Over / (Under)	Weighted Average Cost of Capital
1	2020	Oct-19	Sep-20	2,912,291	2,791,091	(121,200)	(9,077)	(130,277)	7.49%
2				$ 2,912,291	$ 2,791,091	$ (121,200)	$ (9,077)	$ (130,277)	

ATMOS ENERGY CORPORATION
KENTUCKY PIPE REPLACEMENT PROGRAM
SURCHARGE CALCULATION OF FORCASTED ACTIVITY
AS OF OCTOBER 2019 THROUGH SEPTEMBER 2020
DEFICIENCY

Line Number	Description	Actual	As Filed
1	Project Additions	$ 25,769,533	$ 26,650,299
2	Project Retirements	(1,110,218)	(5,832,823)
3	**Net Change to Gross Plant**	$ 24,659,315	$ 20,817,475
4			
5	Cost of Removal to Accumulated Depr.	1,356,291	1,351,236
6	Retirements from Accumulated Depr.	1,110,218	5,832,823
7	Depreciation Accrual to Accumulated Depr.	(215,443)	(178,001)
8	**Net Change to Accumulated Depreciation**	2,251,065	7,006,058
9			
10	**Net Change to Net Plant**	$ 26,910,380	$ 27,823,534
11			
12	Accumulated Deferred Income Taxes	(492,073)	(508,770)
13	**Net Change to Rate Base**	$ 26,418,308	$ 27,314,764
14			
15	Rate of Return	7.49%	7.49%
16	**Required Operating Income**	$ 1,978,630	$ 2,045,771
17			
18	Depreciation & Amortization Expense	215,443	178,001
19	O&M Savings	(6,544)	(6,544)
20	Ad Valorem Tax Increase	196,676	166,034
21	Income Taxes on Cost of Service Items	(101,191)	(84,204)
22	Income Taxes on Adjusted Interest Expense	(119,415)	(128,588)
23	**Operating Income at Present Rates**	$ 184,969	$ 124,699
24			
25	Deficiency	$ 2,163,600	$ 2,170,471
26	Tax Factor	74.53%	74.53%
27	**Total Proposed Rate Adjustment**	$ 2,903,072	$ 2,912,291
28			
29	2020 approved deficiency	$ 2,912,291	$ 2,912,291
30			
31	Increase in deficiency	$ (9,219)	$ -

ATMOS ENERGY CORPORATION
KENTUCKY PIPE REPLACEMENT PROGRAM
SURCHARGE CALCULATION OF FORECASTED ACTIVITY
AS OF OCTOBER 2021 THROUGH SEPTEMBER 2022
ADDITIONS

Line Number	Description	Mains	Services	Meters	Total
1	Prior Year: 2020	15,898,814	9,870,719	-	25,769,533
2					
3	Prior Year: 2021	16,583,188	9,684,233	424,045	26,691,466
4					
5	Current Year: 2022	21,328,783	7,696,203	322,908	29,347,894
6					
7	Total Additions	$ 53,810,785	$ 27,251,155	$ 746,953	$ 81,808,893

Exhibit C-1

ATMOS ENERGY CORPORATION
KENTUCKY PIPE REPLACEMENT PROGRAM
SURCHARGE CALCULATION OF FORECASTED ACTIVITY
AS OF OCTOBER 2021 THROUGH SEPTEMBER 2022
MONTHLY DEPRECIATION EXPENSE FOR FISCAL YEAR 2022

Line No.	Description		annual rate	Prior Yr	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Annual Totals	13-Month Average
	FERC 37600: Mains																	
1	Monthly Investment Additions				$ 3,017,058	$ 1,608,294	$ 1,402,538	$ 1,841,691	$ 1,446,662	$ 1,407,442	$ 1,690,987	$ 1,624,603	$ 1,741,310	$ 1,812,856	$ 1,666,040	$ 2,069,301	$ 21,328,783	
2	Cumulative Investment			32,482,001	35,499,059	37,107,353	38,509,892	40,351,583	41,798,245	43,205,687	44,896,674	46,521,277	48,262,587	50,075,444	51,741,484	53,810,785		43,404,775
3	Monthly Retirements		18.76%		566,144	301,793	263,183	345,589	271,463	264,103	317,310	304,853	326,753	340,178	312,629	388,300	4,002,298	
4	Cumulative Retirements			4,888,971	5,455,115	5,756,907	6,020,091	6,365,680	6,637,143	6,901,246	7,218,556	7,523,409	7,850,162	8,190,340	8,502,969	8,891,268		6,938,604
5	Depreciable Base			32,482,001	2,450,914	1,306,501	1,139,355	1,496,102	1,175,199	1,143,339	1,373,677	1,319,750	1,414,558	1,472,678	1,353,412	1,681,001	**17,326,486**	
6	Monthly Depreciation Expense, book basis			-	34,342	35,191	36,006	37,194	38,245	39,413	41,050	42,937	45,465	48,975	53,814	65,833	**518,465**	
7	Cumulative Depreciation			413,443	447,785	482,976	518,982	556,176	594,421	633,834	674,883	717,820	763,286	812,261	866,075	931,907		647,219
8																		
9	Month	Net Investment	Depr. Rate															
10	prior period	27,593,031	1.43%	32,882	32,882	32,882	32,882	32,882	32,882	32,882	32,882	32,882	32,882	32,882	32,882	32,882	394,580	
11	Oct-21	2,450,914	1.43%		1,460	1,460	1,460	1,460	1,460	1,460	1,460	1,460	1,460	1,460	1,460	1,460	17,524	
12	Nov-21	1,306,501	1.43%			849	849	849	849	849	849	849	849	849	849	849	9,341	
13	Dec-21	1,139,355	1.43%				815	815	815	815	815	815	815	815	815	815	8,146	
14	Jan-22	1,496,102	1.43%					1,189	1,189	1,189	1,189	1,189	1,189	1,189	1,189	1,189	10,697	
15	Feb-22	1,175,199	1.43%						1,050	1,050	1,050	1,050	1,050	1,050	1,050	1,050	8,403	
16	Mar-22	1,143,339	1.43%							1,168	1,168	1,168	1,168	1,168	1,168	1,168	8,175	
17	Apr-22	1,373,677	1.43%								1,637	1,637	1,637	1,637	1,637	1,637	9,822	
18	May-22	1,319,750	1.43%									1,887	1,887	1,887	1,887	1,887	9,436	
19	Jun-22	1,414,558	1.43%										2,529	2,529	2,529	2,529	10,114	
20	Jul-22	1,472,678	1.43%											3,510	3,510	3,510	10,530	
21	Aug-22	1,353,412	1.43%												4,838	4,838	9,677	
22	Sep-22	1,681,001	1.43%													12,019	12,019	
23	**Total: FERC 376 Depr**	**44,919,516**		**$ 32,882**	**$ 34,342**	**$ 35,191**	**$ 36,006**	**$ 37,194**	**$ 38,245**	**$ 39,413**	**$ 41,050**	**$ 42,937**	**$ 45,465**	**$ 48,975**	**$ 53,814**	**$ 65,833**	**$ 518,465**	
24																		
25																		
26	***FERC 38000: Services***																	
27	Monthly Investment Additions				$ 137,565	$ 144,172	$ 760,993	$ 775,120	$ 756,817	$ 749,317	$ 729,180	$ 727,778	$ 727,800	$ 753,471	$ 734,229	$ 699,760	$ 7,696,203	
28	Cumulative Investment			19,554,952	19,692,518	19,836,690	20,597,683	21,372,803	22,129,620	22,878,937	23,608,117	24,335,896	25,063,696	25,817,166	26,551,395	27,251,155		22,976,202
29	Monthly Retirements		24.900%		34,254	35,899	189,487	193,005	188,447	186,580	181,565	181,217	181,222	187,614	182,823	174,240	1,916,352	
30	Cumulative Retirements			2,679,202	2,713,456	2,749,354	2,938,842	3,131,846	3,320,293	3,506,873	3,688,439	3,869,655	4,050,877	4,238,491	4,421,314	4,595,554		3,531,092
31	Depreciable Base			19,554,952	103,312	108,273	571,506	582,115	568,370	562,738	547,614	546,562	546,578	565,857	551,406	525,520	**5,779,851**	
32	Monthly Depreciation Expense, book basis			-	31,739	31,850	32,493	33,220	34,019	34,924	35,951	37,180	38,718	40,840	43,941	49,853	**444,728**	
33	Cumulative Depreciation			404,587	436,326	468,175	500,668	533,888	567,907	602,831	638,782	675,962	714,680	755,520	799,461	849,314		611,392
34																		
35	Month	Net Investment	Depr. Rate															
36	prior period	16,875,750	2.25%	31,642	31,642	31,642	31,642	31,642	31,642	31,642	31,642	31,642	31,642	31,642	31,642	31,642	379,704	
37	Oct-21	103,312	2.25%		97	97	97	97	97	97	97	97	97	97	97	97	1,162	
38	Nov-21	108,273	2.25%			111	111	111	111	111	111	111	111	111	111	111	1,218	
39	Dec-21	571,506	2.25%				643	643	643	643	643	643	643	643	643	643	6,429	
40	Jan-22	582,115	2.25%					728	728	728	728	728	728	728	728	728	6,549	
41	Feb-22	568,370	2.25%						799	799	799	799	799	799	799	799	6,394	
42	Mar-22	562,738	2.25%							904	904	904	904	904	904	904	6,331	
43	Apr-22	547,614	2.25%								1,027	1,027	1,027	1,027	1,027	1,027	6,161	
44	May-22	546,562	2.25%									1,230	1,230	1,230	1,230	1,230	6,149	
45	Jun-22	546,578	2.25%										1,537	1,537	1,537	1,537	6,149	
46	Jul-22	565,857	2.25%											2,122	2,122	2,122	6,366	
47	Aug-22	551,406	2.25%												3,102	3,102	6,203	
48	Sep-22	525,520	2.25%													5,912	5,912	
49	**Total: FERC 380 Depr**	**22,655,601**		**$ 31,642**	**$ 31,739**	**$ 31,850**	**$ 32,493**	**$ 33,220**	**$ 34,019**	**$ 34,924**	**$ 35,951**	**$ 37,180**	**$ 38,718**	**$ 40,840**	**$ 43,941**	**$ 49,853**	**$ 444,728**	
50																		

Exhibit C-1

ATMOS ENERGY CORPORATION
KENTUCKY PIPE REPLACEMENT PROGRAM
SURCHARGE CALCULATION OF FORECASTED ACTIVITY
AS OF OCTOBER 2021 THROUGH SEPTEMBER 2022
MONTHLY DEPRECIATION EXPENSE FOR FISCAL YEAR 2022

Line No.	Description	annual rate	Prior Yr	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Annual Totals	13-Month Average
51	***FERC 38100: Meters***																
52	Monthly Investment Additions			$ 5,772	$ 6,049	$ 31,929	$ 32,522	$ 31,754	$ 31,439	$ 30,594	$ 30,535	$ 30,536	$ 31,613	$ 30,806	$ 29,360	$ 322,908	
53	Cumulative Investment		424,045	429,817	435,866	467,795	500,316	532,070	563,509	594,103	624,638	655,175	686,788	717,594	746,953		567,590
54	Monthly Retirements	36.48%		2,106	2,207	11,647	11,864	11,583	11,469	11,160	11,139	11,139	11,532	11,238	10,710	117,794	
55	Cumulative Retirements		152,091	154,196	156,403	168,050	179,914	191,498	202,966	214,127	225,266	236,405	247,937	259,175	269,885		204,455
56	Depreciable Base		424,045	3,666	3,842	20,281	20,658	20,170	19,970	19,434	19,396	19,397	20,081	19,568	18,650	205,114	
57	Monthly Depreciation Expense, book basis		-	1,036	1,044	1,090	1,142	1,199	1,264	1,337	1,425	1,536	1,688	1,910	2,333	**17,003**	
58	Cumulative Depreciation		6,173	7,209	8,253	9,343	10,485	11,684	12,948	14,285	15,711	17,246	18,934	20,843	23,176		13,561
59		Net	Depr.														
60	Month	Investment	Rate														
61	prior period	271,954	4.54%	1,029	1,029	1,029	1,029	1,029	1,029	1,029	1,029	1,029	1,029	1,029	1,029	12,346.72	
62	Oct-21	3,666	4.54%		7	7	7	7	7	7	7	7	7	7	7	83.23	
63	Nov-21	3,842	4.54%			8	8	8	8	8	8	8	8	8	8	87.22	
64	Dec-21	20,281	4.54%				46	46	46	46	46	46	46	46	46	460.39	
65	Jan-22	20,658	4.54%					52	52	52	52	52	52	52	52	468.94	
66	Feb-22	20,170	4.54%						57	57	57	57	57	57	57	457.86	
67	Mar-22	19,970	4.54%							65	65	65	65	65	65	453.33	
68	Apr-22	19,434	4.54%								74	74	74	74	74	441.14	
69	May-22	19,396	4.54%									88	88	88	88	440.30	
70	Jun-22	19,397	4.54%										110	110	110	440.31	
71	Jul-22	20,081	4.54%											152	152	455.84	
72	Aug-22	19,568	4.54%												222	444.20	
73	Sep-22	18,650	4.54%													423.34	
74	**Total: FERC 381 Depr**	**477,068**		**$ 1,029**	**$ 1,036**	**$ 1,044**	**$ 1,090**	**$ 1,142**	**$ 1,199**	**$ 1,264**	**$ 1,337**	**$ 1,425**	**$ 1,536**	**$ 1,688**	**$ 1,910**	**$ 2,333**	**$ 17,003**	
75																	
76	**Total Depreciation Expense, Monthly (Lines 22+44**		**$ 65,553**	**$ 67,117**	**$ 68,085**	**$ 69,588**	**$ 71,557**	**$ 73,463**	**$ 75,600**	**$ 78,338**	**$ 81,543**	**$ 85,719**	**$ 91,502**	**$ 99,665**	**$ 118,019**	**$ 980,195**	

Notes: This Depreciation methodology is consistent with how the Company accounts for Depreciation expense on its books.

ATMOS ENERGY CORPORATION
KENTUCKY PIPE REPLACEMENT PROGRAM
SURCHARGE CALCULATION OF FORECASTED ACTIVITY
AS OF OCTOBER 2021 THROUGH SEPTEMBER 2022
MONTHLY COST OF REMOVAL FOR FISCAL YEAR 2022

Line No.	Description		Prior Yr Balance	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Annual Totals	13-Month Average
1	**FERC 37600: Mains**																
2	**Cost of Removal**			**$ 158,793**	**$ 84,647**	**$ 73,818**	**$ 96,931**	**$ 76,140**	**$ 74,076**	**$ 88,999**	**$ 85,505**	**$ 91,648**	**$ 95,413**	**$ 87,686**	**$ 108,911**	**$ 1,122,568**	
3		Accumulated	1,709,579	1,868,372	1,953,019	2,026,836	2,123,768	2,199,908	2,273,984	2,362,983	2,448,488	2,540,136	2,635,550	2,723,236	2,832,147		**$ 2,284,462**
4																	
5	**FERC 38000: Services**																
6	**Cost of Removal**			**$ 6,484**	**$ 6,796**	**$ 35,869**	**$ 36,535**	**$ 35,672**	**$ 35,319**	**$ 34,370**	**$ 34,304**	**$ 34,305**	**$ 35,515**	**$ 34,608**	**$ 32,983**	**$ 362,759**	
7		Accumulated	973,043	979,527	986,323	1,022,192	1,058,727	1,094,400	1,129,719	1,164,088	1,198,392	1,232,697	1,268,211	1,302,819	1,335,802		**$ 1,134,303**
8																	
9	**Total Cost of Removal**			**$ 165,277**	**$ 91,443**	**$ 109,687**	**$ 133,466**	**$ 111,813**	**$ 109,395**	**$ 123,369**	**$ 119,809**	**$ 125,953**	**$ 130,928**	**$ 122,294**	**$ 141,894**	**$ 1,485,327**	**$ 1,485,327**
10		Accumulated	2,682,622	2,847,899	2,939,341	3,049,028	3,182,495	3,294,307	3,403,702	3,527,071	3,646,880	3,772,833	3,903,761	4,026,055	4,167,949		**$ 3,418,765**

ATMOS ENERGY CORPORATION
KENTUCKY PIPE REPLACEMENT PROGRAM
SURCHARGE CALCULATION OF FORECASTED ACTIVITY
AS OF OCTOBER 2021 THROUGH SEPTEMBER 2022
RETIREMENTS

Line Number	Description	Mains	Services	Meters	Total
1	Prior Year: 2020	$783,252	326,966	-	1,110,218
2					
3	Prior Year: 2021	$4,105,719	2,352,236	152,091	6,610,046
4					
5	Current Year: 2022	$4,002,298	1,916,352	117,794	6,036,444
6					
7	Total Retirements	$ 8,891,268	$ 4,595,554	$ 269,885	$ 13,756,707

ATMOS ENERGY CORPORATION
KENTUCKY PIPE REPLACEMENT PROGRAM
SURCHARGE CALCULATION OF FORECASTED ACTIVITY
AS OF OCTOBER 2021 THROUGH SEPTEMBER 2022
DEPRECIATION EXPENSE

Line Number	Description	Mains	Services	Meters	Total
1	Net Change to Gross Plant	$ 44,919,516	$ 22,655,601	$ 477,068	
2	Depreciation Rates	1.43%	2.25%	4.54%	
3	Proforma Annual Depreciation Expense	$ 642,349	$ 509,751	$ 21,659	$ 1,173,759
4					
5	Current Year Change to Net Plant	$ 17,326,486	$ 5,779,851	$ 205,114	
6	Depreciation Rates	1.43%	2.25%	4.54%	
7	Proforma Annual Depreciation Expense	$ 247,769	$ 130,047	$ 9,312	$ 387,128
8					
9	Depreciation Accrual to Accumulated Depreciation from Prior Approved Filing				$ 824,203
10	Accumulated Depreciation on Prior Additions (full years depreciation)				786,631
11	Accumulated Depreciation on Current Additions (half-year convention)				193,564
12					
13	Depreciation Accrual to Accumulated Depreciation				$ 1,804,398

Kentucky PRP ADIT Calculation
FY2022

Line No		Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Total
1	Book Cost	2,054,943	2,054,943	2,054,943	2,054,943	2,054,943	2,054,943	2,054,943	2,054,943	2,054,943	2,054,943	2,054,943	2,054,943	24,659,315
2	Tax Cost	825,893	825,893	825,893	825,893	825,893	825,893	825,893	825,893	825,893	825,893	825,893	825,893	9,910,716
3	FXA01	**$ (1,229,050)**	**$ (1,229,050)**	**$ (1,229,050)**	**$ (1,229,050)**	**$ (1,229,050)**	**$ (1,229,050)**	**$ (1,229,050)**	**$ (1,229,050)**	**$ (1,229,050)**	**$ (1,229,050)**	**$ (1,229,050)**	**$ (1,229,050)**	**$ (14,748,599)**
4														
5														
6	Prior Yr Bal													
7	Current Yr													
8	FXA01 Cumulative	$ (1,229,050)	$ (2,458,100)	$ (3,687,150)	$ (4,916,200)	$ (6,145,250)	$ (7,374,300)	$ (8,603,350)	$ (9,832,399)	$ (11,061,449)	$ (12,290,499)	$ (13,519,549)	$ (14,748,599)	$ (14,748,599)
9	Deferred Rate	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	
10	FXA01 Tax Effected	**$ (306,648)**	**$ (613,296)**	**$ (919,944)**	**$ (1,226,592)**	**$ (1,533,240)**	**$ (1,839,888)**	**$ (2,146,536)**	**$ (2,453,184)**	**$ (2,759,832)**	**$ (3,066,480)**	**$ (3,373,128)**	**$ (3,679,775)**	**$ (3,679,775)**
11	**FXA01 Prorated**													
12														
13														
14														
15	Book Depreciation	17,954	17,954	17,954	17,954	17,954	17,954	17,954	17,954	17,954	17,954	17,954	17,954	215,443
16	Tax Depreciation	38,007	38,007	38,007	38,007	38,007	38,007	38,007	38,007	38,007	38,007	38,007	38,007	456,082
17	FXA02	**$ (20,053)**	**$ (20,053)**	**$ (20,053)**	**$ (20,053)**	**$ (20,053)**	**$ (20,053)**	**$ (20,053)**	**$ (20,053)**	**$ (20,053)**	**$ (20,053)**	**$ (20,053)**	**$ (20,053)**	**$ (240,639)**
18														
19														
20														
21	Prior Yr Bal													
22	Current Yr													
23	FXA02 Cumulative	$ (20,053)	$ (40,106)	$ (60,160)	$ (80,213)	$ (100,266)	$ (120,319)	$ (140,373)	$ (160,426)	$ (180,479)	$ (200,532)	$ (220,585)	$ (240,639)	$ (240,639)
24	Deferred Rate	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	
25	FXA02 Tax Effected	**$ (5,003)**	**$ (10,007)**	**$ (15,010)**	**$ (20,013)**	**$ (25,016)**	**$ (30,020)**	**$ (35,023)**	**$ (40,026)**	**$ (45,029)**	**$ (50,033)**	**$ (55,036)**	**$ (60,039)**	**$ (60,039)**
26	**FXA02 Prorated**													
27														
28	Cumulative Deferred Inc. Taxes and Investment Tax Credits													**$ (3,739,815)**
29	*(excluding forecasted change in NOLC)*													
30	Forecasted Change in NOLC													**$ 3,247,742**
31														
32	**Forecasted ADIT in Rate Base**													(492,073)
33														
34														
35	**Calculation of Change in NOLC**													
36														
37			Schedule											
38	Forecasted Test Period		Reference											
39														
40	Net Change to Rate Base		Exhibit B											26,418,308
41														
42	Required Operating Income		Exhibit B											1,978,630
43														
44	Interest Deduction		Exhibit B											498,468
45														
46	Return on Equity Portion of Rate Base		line 36 - line 38											1,480,162
47														
48	Return, grossed up for Income Tax	24.95%	Line 40 / (1-tax rate)											1,972,235
49														
50	Tax Expense on Return	24.95%	Line 42 x tax rate											492,073
51														
52	Change In ADIT, excluding forecasted change in NOLC		Line 22											$ (3,739,815)
53	Required Change in NOLC													3,247,742
54														
55	**Total Required Change in Accumulated Deferred Income Ta**		**Exhibit B**											**(492,073)**
56														
57														
58	**ADIT Reconciliation**													
59														
60														
61	Change In ADIT, excluding forecasted change in NOLC		Line 22											$ (3,739,815)
62	Change in NOLC		Line 47											3,247,742
63	**Forecasted ADIT in Rate Base**													**(492,073)**
64														
65	**Total Required Change in Accumulated Deferred Income Ta**		Line 57 - Line 53											**(492,073)**
66														
67														
68	[1] *Because the Company is in a NOLC position, the total change in ADIT must equal the tax expenses included in revenue requirement*													

Kentucky PRP ADIT Calculation
FY2022

Line No		Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Total
1	Book Cost	1,673,452	1,673,452	1,673,452	1,673,452	1,673,452	1,673,452	1,673,452	1,673,452	1,673,452	1,673,452	1,673,452	1,673,452	20,081,420
2	Tax Cost	880,490	880,490	880,490	880,490	880,490	880,490	880,490	880,490	880,490	880,490	880,490	880,490	10,565,878
3	FXA01	$ (792,962)	$ (792,962)	$ (792,962)	$ (792,962)	$ (792,962)	$ (792,962)	$ (792,962)	$ (792,962)	$ (792,962)	$ (792,962)	$ (792,962)	$ (792,962)	$ (9,515,543)
4														
5														
6	Prior Yr Bal													
7	Current Yr													
8	FXA01 Cumulative	$ (15,541,561)	$ (16,334,523)	$ (17,127,485)	$ (17,920,447)	$ (18,713,409)	$ (19,506,371)	$ (20,299,332)	$ (21,092,294)	$ (21,885,256)	$ (22,678,218)	$ (23,471,180)	$ (24,264,142)	$ (24,264,142)
9	Deferred Rate	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	
10	FXA01 Tax Effected	$ (3,877,619)	$ (4,075,463)	$ (4,273,307)	$ (4,471,151)	$ (4,668,995)	$ (4,866,839)	$ (5,064,683)	$ (5,262,527)	$ (5,460,371)	$ (5,658,215)	$ (5,856,059)	$ (6,053,903)	$ (6,053,903)
11	**FXA01 Prorated**													
12														
13														
14														
15	Book Depreciation	50,730	50,730	50,730	50,730	50,730	50,730	50,730	50,730	50,730	50,730	50,730	50,730	608,759
16	Tax Depreciation	112,817	112,817	112,817	112,817	112,817	112,817	112,817	112,817	112,817	112,817	112,817	112,817	1,353,808
17	FXA02	$ (62,087)	$ (62,087)	$ (62,087)	$ (62,087)	$ (62,087)	$ (62,087)	$ (62,087)	$ (62,087)	$ (62,087)	$ (62,087)	$ (62,087)	$ (62,087)	$ (745,049)
18														
19														
20														
21	Prior Yr Bal													
22	Current Yr													
23	FXA02 Cumulative	$ (302,726)	$ (364,813)	$ (426,901)	$ (488,988)	$ (551,076)	$ (613,163)	$ (675,250)	$ (737,338)	$ (799,425)	$ (861,512)	$ (923,600)	$ (985,687)	$ (985,687)
24	Deferred Rate	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	
25	FXA02 Tax Effected	$ (75,530)	$ (91,021)	$ (106,512)	$ (122,003)	$ (137,493)	$ (152,984)	$ (168,475)	$ (183,966)	$ (199,457)	$ (214,947)	$ (230,438)	$ (245,929)	$ (245,929)
26	**FXA02 Prorated**													
27														
28	Cumulative Deferred Inc. Taxes and Investment T													**$ (6,299,832)**
29	*(excluding forecasted change in NOLC)*													
30	Forecasted Change in NOLC													**$ 5,306,569**
31														
32	**Forecasted ADIT in Rate Base**													(993,263)
33														
34														
35	**Calculation of Change in NOLC**													
36														
37														
38	Forecasted Test Period													
39														
40	Net Change to Rate Base													53,326,155
41														
42	Required Operating Income													3,993,925
43														
44	Interest Deduction													1,006,173
45														
46	Return on Equity Portion of Rate Base													2,987,752
47														
48	Return, grossed up for Income Tax													3,981,016
49														
50	Tax Expense on Return													993,263
51														
52	Change In ADIT, excluding forecasted change in I													$ (6,299,832)
53	Required Change in NOLC													5,306,569
54														
55	**Total Required Change in Accumulated Defern**													**(993,263)**
56														
57														
58	**ADIT Reconciliation**													
59														
60														
61	Change In ADIT, excluding forecasted change in I													$ (6,299,832)
62	Change in NOLC													5,306,569
63	**Forecasted ADIT in Rate Base**													**(993,263)**
64														
65	**Total Required Change in Accumulated Defern**													**(993,263)**
66														
67														
68	[1] *Because the Company is in a NOLC position, the*													

Kentucky PRP ADIT Calculation
FY2022

Line No			Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Total
1	Book Cost		2,557,892	1,418,617	1,731,143	2,098,875	1,763,740	1,726,047	1,940,725	1,885,708	1,980,533	2,058,616	1,924,386	2,225,170	23,311,450
2	Tax Cost		1,299,731	720,836	879,638	1,066,493	896,202	877,049	986,132	958,177	1,006,360	1,046,036	977,830	1,130,667	11,845,150
3	FXA01		$ (1,258,161)	$ (697,781)	$ (851,504)	$ (1,032,383)	$ (867,538)	$ (848,998)	$ (954,592)	$ (927,531)	$ (974,173)	$ (1,012,580)	$ (946,556)	$ (1,094,504)	$ (11,466,300)
4															
5															
6	Prior Yr Bal		(24,264,142)	(24,264,142)	(24,264,142)	(24,264,142)	(24,264,142)	(24,264,142)	(24,264,142)	(24,264,142)	(24,264,142)	(24,264,142)	(24,264,142)	(24,264,142)	(24,264,142)
7	Current Yr		(1,258,161)	(697,781)	(851,504)	(1,032,383)	(867,538)	(848,998)	(954,592)	(927,531)	(974,173)	(1,012,580)	(946,556)	(1,094,504)	(11,466,300)
8	FXA01 Cumulative		(25,522,303)	(26,220,084)	(27,071,588)	(28,103,971)	(28,971,509)	(29,820,507)	(30,775,099)	(31,702,630)	(32,676,803)	(33,689,383)	(34,635,939)	(35,730,442)	(35,730,442)
9	Deferred Rate		24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%
10	FXA01 Tax Effected		$ (6,367,815)	$ (6,541,911)	$ (6,754,361)	$ (7,011,941)	$ (7,228,391)	$ (7,440,216)	$ (7,678,387)	$ (7,909,806)	$ (8,152,862)	$ (8,405,501)	$ (8,641,667)	$ (8,914,745)	$ (8,914,745)
11	**FXA01 Prorated**		**$ (6,354,484)**	**$ (6,506,878)**	**$ (6,674,801)**	**$ (6,856,518)**	**$ (6,992,615)**	**$ (7,107,813)**	**$ (7,217,763)**	**$ (7,304,942)**	**$ (7,376,527)**	**$ (7,429,477)**	**$ (7,458,917)**	**$ (7,470,513)**	**$ (7,470,513)**
12															
13															
14															
15	Book Depreciation		67,117	68,085	69,588	71,557	73,463	75,600	78,338	81,543	85,719	91,502	99,665	118,019	980,195
16	Tax Depreciation		155,376	157,616	161,097	165,654	170,068	175,015	181,352	188,772	198,439	211,829	230,724	273,215	2,269,159
17	FXA02		$ (88,259)	$ (89,532)	$ (91,509)	$ (94,097)	$ (96,605)	$ (99,415)	$ (103,015)	$ (107,229)	$ (112,721)	$ (120,326)	$ (131,060)	$ (155,196)	$ (1,288,964)
18															
19															
20															
21	Prior Yr Bal		(985,687)	(985,687)	(985,687)	(985,687)	(985,687)	(985,687)	(985,687)	(985,687)	(985,687)	(985,687)	(985,687)	(985,687)	(985,687)
22	Current Yr		(88,259)	(89,532)	(91,509)	(94,097)	(96,605)	(99,415)	(103,015)	(107,229)	(112,721)	(120,326)	(131,060)	(155,196)	(1,288,964)
23	FXA02 Cumulative		(1,073,946)	(1,163,478)	(1,254,987)	(1,349,084)	(1,445,689)	(1,545,104)	(1,648,119)	(1,755,348)	(1,868,069)	(1,988,395)	(2,119,455)	(2,274,651)	(2,274,651)
24	Deferred Rate		24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%	24.95%
25	FXA02 Tax Effected		$ (267,950)	$ (290,288)	$ (313,119)	$ (336,597)	$ (360,699)	$ (385,504)	$ (411,206)	$ (437,959)	$ (466,083)	$ (496,105)	$ (528,804)	$ (567,525)	$ (567,525)
26	**FXA02 Prorated**		**$ (267,014)**	**$ (286,568)**	**$ (304,614)**	**$ (321,177)**	**$ (336,332)**	**$ (349,821)**	**$ (361,687)**	**$ (371,765)**	**$ (380,048)**	**$ (386,340)**	**$ (390,417)**	**$ (392,061)**	**$ (392,061)**
27															
28	Cumulative Deferred Inc. Taxes and Investment T														**$ (7,862,574)**
29	*(excluding forecasted change in NOLC)*														
30	Forecasted Change in NOLC														**$ 8,150,022**
31															
32	**Forecasted ADIT in Rate Base**														**$ 287,448**
33		**ADIT Proration:**													
34		days in month	31	30	31	31	28	31	30	31	30	31	31	30	365
35	**Calculation of Change in NOLC**	mid month conventior	15.5	30	31	31	28	31	30	31	30	31	31	30	
36		days remaining	350	320	289	258	230	199	169	138	108	77	46	16	
37		pro ration factor	**95.75%**	**87.53%**	**79.04%**	**70.55%**	**62.88%**	**54.38%**	**46.16%**	**37.67%**	**29.45%**	**20.96%**	**12.47%**	**4.25%**	
38	Forecasted Test Period														
39															
40	Net Change to Rate Base														67,868,665
41															
42	Required Operating Income														5,199,270
43															
44	Interest Deduction														1,191,846
45															
46	Return on Equity Portion of Rate Base														4,007,424
47															
48	Return, grossed up for Income Tax														5,339,672
49															
50	Tax Expense on Return														1,332,248
51															
52	Change In ADIT, excluding forecasted change in I														$ (7,862,574)
53	Required Change in NOLC	-													8,150,022 -
54															
55	**Total Required Change in Accumulated Defern**														**(1,332,248)**
56															
57															
58	**ADIT Reconciliation**														
59															
60															
61	Change In ADIT, excluding forecasted change in I														$ (7,862,574)
62	Change in NOLC														8,150,022
63	**Forecasted ADIT in Rate Base**														**287,448**
64															
65	**Total Required Change in Accumulated Defern**														**287,448**
66															
67															
68	[1] *Because the Company is in a NOLC position, the*														

ATMOS ENERGY CORPORATION
KENTUCKY PIPE REPLACEMENT PROGRAM
SURCHARGE CALCULATION OF FORECASTED ACTIVITY
AS OF OCTOBER 2021 THROUGH SEPTEMBER 2022
DEFERRED INCOME TAXES

Line Number	Description	Mains	Services	Meters	Total
1	Additions to Gross Plant - Book 2020	$ 15,898,814	$ 9,870,719	$ -	$ 25,769,533
2	Less: Retirements to Book 2020	(783,252)	(326,966)	-	(1,110,218)
3	**Book Basis**	**$ 15,115,562**	**$ 9,543,753**	**$ -**	**$ 24,659,315**
4	Repairs Percentage	57.52%	68.02%	0.00%	
5	Less: Repairs	$ (9,144,395)	$ (6,714,422)	$ -	$ (15,858,817)
6	Add: Deferred Retirements	$ 783,252	$ 326,966	$ -	1,110,218
7	Tax Basis Before Bonus	$ 6,754,419	$ 3,156,297	$ -	$ 9,910,716
8	Bonus Depreciation %	0.00%	0.00%	0.00%	
9	Bonus Depreciation	$ -	$ -	$ -	$ -
10	**Tax Basis**	**$ 6,754,419**	**$ 3,156,297**	**$ -**	**$ 9,910,716**
11					
12	Additions to Gross Plant - Book 2021	$ 16,583,188	$ 9,684,233	$ 424,045	$ 26,691,466
13	Less: Retirements to Book 2021	(4,105,719)	(2,352,236)	(152,091)	(6,610,046)
14	**Book Basis**	**$ 12,477,469**	**$ 7,331,998**	**$ 271,954**	**$ 20,081,420**
15	Repairs Percentage	57.52%	68.02%	0.00%	
16	Less: Repairs	$ (9,538,021)	$ (6,587,568)	$ -	$ (16,125,589)
17	Add: Deferred Retirements	$ 4,105,719	$ 2,352,236	$ 152,091	6,610,046
18	Tax Basis Before Bonus	$ 7,045,167	$ 3,096,666	$ 424,045	$ 10,565,878
19	Bonus Depreciation %	0.00%	0.00%	0.00%	
20	Bonus Depreciation	$ -	$ -	$ -	$ -
21	**Tax Basis**	**$ 7,045,167**	**$ 3,096,666**	**$ 424,045**	**$ 10,565,878**
22					
23	Additions to Gross Plant - Book 2022	$ 21,328,783	$ 7,696,203	$ 322,908	$ 29,347,894
24	Less: Retirements to Book 2022	(4,002,298)	(1,916,352)	(117,794)	(6,036,444)
25	**Book Basis**	**$ 17,326,486**	**$ 5,779,851**	**$ 205,114**	**$ 23,311,451**
26	Repairs Percentage	57.52%	68.02%	0.00%	
27	Less: Repairs	$ (12,267,507)	$ (5,235,237)	$ -	$ (17,502,744)

ATMOS ENERGY CORPORATION
KENTUCKY PIPE REPLACEMENT PROGRAM
SURCHARGE CALCULATION OF FORECASTED ACTIVITY
AS OF OCTOBER 2021 THROUGH SEPTEMBER 2022
DEFERRED INCOME TAXES

Line Number	Description	Mains	Services	Meters	Total
28	Add: Deferred Retirements	$ 4,002,298	$ 1,916,352	$ 117,794	6,036,444
29	Tax Basis Before Bonus	$ 9,061,276	$ 2,460,966	$ 322,908	$ 11,845,150
30	Bonus Depreciation %	0.00%	0.00%	0.00%	
31	Bonus Depreciation	$ -	$ -	$ -	$ -
32	**Tax Basis**	**$ 9,061,276**	**$ 2,460,966**	**$ 322,908**	**$ 11,845,150**
33					
34	FXA01 - Gross	$ (22,058,654)	$ (13,941,673)	$ 269,885	$ (35,730,442)
35	Deferred Rate	24.95%	24.95%	24.95%	
36	**FXA01 - Tax Effected**	**$ (5,503,634)**	**$ (3,478,447)**	**$ 67,336**	**$ (8,914,745)**
37	**FXA01 - Tax Effected Prorated**				**$ (7,470,513)**
38					
39					
40	Book Depreciation 2020	$ 108,076	$ 107,367	$ -	$ 215,443
41	Book Depreciation 2021	$ 305,366	$ 297,219	$ 6,173	$ 608,759
42	Book Depreciation 2022	$ 518,465	$ 444,728	$ 17,003	$ 980,195
43	Book Depreciation	$ 931,907	$ 849,314	$ 23,176	$ 1,804,398
44					
45	Tax Depreciation 2020	$ 337,721	$ 118,361	$ -	$ 456,082
46	Tax Depreciation 2021	$ 993,928	$ 343,978	$ 15,902	$ 1,353,808
47	Tax Depreciation 2022	$ 1,699,857	$ 526,580	$ 42,721	$ 2,269,159
48	Tax Depreciation	$ 3,031,507	$ 988,920	$ 58,623	$ 4,079,049
49					

ATMOS ENERGY CORPORATION
KENTUCKY PIPE REPLACEMENT PROGRAM
SURCHARGE CALCULATION OF FORECASTED ACTIVITY
AS OF OCTOBER 2021 THROUGH SEPTEMBER 2022
DEFERRED INCOME TAXES

Line Number	Description	Mains	Services	Meters	Total
50	FXA02 - Gross	$ (2,099,599)	$ (139,605)	$ (35,446)	$ (2,274,651)
51	Deferred Rate	24.95%	24.95%	24.95%	
52	**FXA02 - Tax Effected**	**$ (523,850)**	**$ (34,832)**	**$ (8,844)**	**$ (567,525)**
53	**FXA02 - Tax Effected Prorated**				**$ (392,061)**
54					
55	**Calculation of Book Depreciation**				
56	Book Basis - 2020	$ 15,115,562	$ 9,543,753	$ -	$ 24,659,315
57	Book Depreciation Rates - Year 1	0.72%	1.13%	2.27%	
58	Book Depreciation Rates - Year 2	1.43%	2.25%	4.54%	
59	Book Depreciation Rates - Year 3	1.43%	2.25%	4.54%	
60	Book Depreciation 2020	**$ 540,381**	**$ 536,836**	**$ -**	**$ 1,077,217**
61					
62	Book Basis - 2021	$ 12,477,469	$ 7,331,998	$ 271,954	$ 20,081,420
63	Book Depreciation Rates - Year 1	0.72%	1.13%	2.27%	
64	Book Depreciation Rates - Year 2	1.43%	2.25%	4.54%	
65	Book Depreciation 2021	**$ 267,642**	**$ 247,455**	**$ 18,520**	**$ 533,617**
66					
67	Book Basis - 2022	$ 17,326,486	$ 5,779,851	$ 205,114	$ 23,311,451
68	Book Depreciation Rates - Year 1	0.72%	1.13%	2.27%	
69	Book Depreciation 2022	**$ 123,884**	**$ 65,023**	**$ 4,656**	**$ 193,564**
70					
71	**Calculation of Tax Depreciation**				
72	Tax Basis - 2020	$ 6,754,419	$ 3,156,297	$ -	$ 9,910,716
73	Tax Depreciation Rates - Year 1	5.00%	3.75%	3.75%	
74	Tax Depreciation Rates - Year 2	9.50%	7.22%	7.22%	
75	Tax Depreciation Rates - Year 3	8.55%	6.68%	6.68%	
76	Tax Depreciation 2020	**$ 1,556,894**	**$ 556,960**	**$ -**	**$ 2,113,854**
77					
78	Tax Basis - 2021	$ 7,045,167	$ 3,096,666	$ 424,045	$ 10,565,878

ATMOS ENERGY CORPORATION
KENTUCKY PIPE REPLACEMENT PROGRAM
SURCHARGE CALCULATION OF FORECASTED ACTIVITY
AS OF OCTOBER 2021 THROUGH SEPTEMBER 2022
DEFERRED INCOME TAXES

Line Number	Description	Mains	Services	Meters	Total
79	Tax Depreciation Rates - Year 1	5.00%	3.75%	3.75%	
80	Tax Depreciation Rates - Year 2	9.50%	7.22%	7.22%	
81	Tax Depreciation 2021	**$ 1,021,549**	**$ 339,673**	**$ 46,513**	**$ 1,407,736**
82					
83	Tax Basis - 2022	$ 9,061,276	$ 2,460,966	$ 322,908	$ 11,845,150
84	Tax Depreciation Rates - Year 1	5.00%	3.75%	3.75%	
85	Tax Depreciation 2022	**$ 453,064**	**$ 92,286**	**$ 12,109**	**$ 557,459**
86					
87					
88					
89					
90	**Tax Rates**				
91	Ad Valorem Tax Rate	0.798%			
92	Income Tax Rate	24.950%			
93	State Tax Rate	5.00%			
94	Federal Tax Rate	21.00%			
95	Uncollectible accounts expense	0.50%			
96	PSC Assessment	0.2000%			
97	Gross Up Factor	1.3418			

ATMOS ENERGY CORPORATION
KENTUCKY PIPE REPLACEMENT PROGRAM
SURCHARGE CALCULATION OF FORECASTED ACTIVITY
AS OF OCTOBER 2021 THROUGH SEPTEMBER 2022
RATE OF RETURN

Line Number	Description	Percent	Cost	Weighted Cost
1	ST Debt	0.18%	25.17%	0.05%
2	LT Debt	42.77%	4.00%	1.71%
3	Equity	57.05%	10.35%	5.90%
4		100.0%		7.66%

ATMOS ENERGY CORPORATION
KENTUCKY PIPE REPLACEMENT PROGRAM
SURCHARGE CALCULATION OF FORECASTED ACTIVITY
AS OF OCTOBER 2021 THROUGH SEPTEMBER 2022
O&M SAVINGS

Line Number	Description	Annual Savings	Cumulative Savings
1	Prior Year: 2020	$ 6,544	$ 6,544
2			
3	Prior Year: 2021	$ 12,152	$ 18,695
4			
5	Current Year: 2022	$ 17,475	$ 36,171

Exhibit I

ATMOS ENERGY CORPORATION
KENTUCKY PIPE REPLACEMENT PROGRAM
SURCHARGE CALCULATION OF FORECASTED ACTIVITY
AS OF OCTOBER 2021 THROUGH SEPTEMBER 2022
RATE DESIGN

Case 2018-00281

Line Number	Class of Customers	Rate	Total	Total Dollars	Ratio	Customer / Volumetric Charge Ratio	Revenue increase by Class	Budgeted Volumes	Budgeted Customer Counts	Customer Charge	Volumetric Charge
1	RESIDENTIAL (Rate G-1)				58.74%		$ 4,758,362		1,923,791		
2	FIRM BILLS	$19.30	1,892,554	$36,526,292		72.33%				$ 2.47	
3	Sales: 1-300	1.3855	10,083,093	$13,970,126		27.67%					
4	Sales: 301-15000	0.9578	0	$0		0.00%					
5	Sales: Over 15000	0.7651	0	$0		0.00%					
6	CLASS TOTAL (Mcf/month)		10,083,093	50,496,418							
7											
8	NON-RESIDENTIAL (Rate G-1)				24.23%		$ 1,963,182		239,354		
9	FIRM BILLS	51.75	230,232	$11,914,506		57.19%				$ 8.20	
10	Sales: 1-300	1.3855	5,551,231	$7,691,230		36.92%					
11	Sales: 301-15000	0.9578	1,281,930	$1,227,833		5.89%					
12	Sales: Over 15000	0.7651	0	$0		0.00%					
13	CLASS TOTAL (Mcf/month)		6,833,161	20,833,569							
14											
15	INTERRUPTIBLE (G-2)				0.35%		$ 28,624		100		
16	INT BILLS	435.00	117	$50,895		16.75%				$ 48.14	
17	Sales: 1-15000	0.8327	192,004	$159,881		52.63%		154,495			0.0975
18	Sales: Over 15000	0.6387	145,583	$92,984		30.61%		117,143			0.0748
19	CLASS TOTAL (Mcf/month)		337,587	303,760				271,638			
20											
21	TRANSPORTATION (T-3)				7.92%		641,357		816		
22	TRANSPORTATION BILLS	435.00	828	$360,190		5.29%				$ 41.59	
23	Interrupt Transport: 1-15000	0.8327	5,286,320	$4,401,919		64.68%		5,231,032			0.0793
24	Interrupt Transport: Over 15000	0.6387	3,200,358	$2,044,068		30.03%		3,166,886			0.0608
25	CLASS TOTAL (Mcf/month)		8,486,677	6,806,177				8,397,918			
26											
27	TRANSPORTATION (T-4)				8.76%		709,767		1,428		
28	TRANSPORTATION BILLS	435.00	1,463	$636,424		8.449%				$ 42.00	
29	Firm Transport: 1-300	1.3855	427,240	$591,941		7.859%		441,044			0.1265
30	Firm Transport: 301-15000	0.9578	5,580,036	$5,344,558		70.957%		5,760,325			0.0874
31	Firm Transport: Over 15000	0.7651	1,253,720	$959,221		12.735%		1,294,227			0.0698
32	CLASS TOTAL (Mcf/month)		7,260,996	7,532,144				7,495,596			
33											
34	Total Revenue			85,972,069	100.00%		$ 8,101,291		2,165,489		
35											
36											
37								**KY Revenue Requirement**			**$ 8,101,291**

ATMOS ENERGY CORPORATION
KENTUCKY PIPE REPLACEMENT PROGRAM
SURCHARGE CALCULATION OF FORECASTED ACTIVITY
AS OF OCTOBER 2021 THROUGH SEPTEMBER 2022
CUSTOMERS & VOLUMES

Line Number	Tariff	Description		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
			Customers													
1	G-1	Residential	**Fiscal 2022 Bud**	159,014	159,559	160,870	161,333	161,046	162,261	162,249	162,977	160,357	159,254	158,268	156,604	1,923,791
2	G-1	Commercial Firm	**Fiscal 2022 Bud**	17,905	18,134	18,407	18,579	18,557	18,759	18,398	18,232	18,009	17,872	17,731	17,715	218,297
3	G-1	Public Authority	**Fiscal 2022 Bud**	1,516	1,509	1,521	1,525	1,525	1,553	1,504	1,522	1,535	1,505	1,512	1,511	18,237
4	G-1	Industrial Firm	**Fiscal 2022 Bud**	235	235	235	235	235	235	235	235	235	235	235	235	2,820
5																-
6	G-2	Commercial Interruptible	**Fiscal 2022 Bud**	3	3	3	2	4	2	2	2	2	2	2	2	28
7	G-2	Industrial Interruptible	**Fiscal 2022 Bud**	6	6	6	6	6	6	6	6	6	6	6	6	72
8	G-2	Public Authority Interruptible	**Fiscal 2022 Bud**	-	-	-	-	-	-	-	-	-	-	-	-	-
9																-
10	T-3	Transportation Interruptible	**Fiscal 2022 Bud**	68	68	68	68	68	68	68	68	68	68	68	68	816
11	T-4	Transportation Firm	**Fiscal 2022 Bud**	119	119	119	119	119	119	119	119	119	119	119	119	1,428
12				178,866	179,632	181,228	181,867	181,559	183,004	182,581	183,161	180,330	179,061	177,941	176,260	2,165,489
13																
14			**Volumes**													
15																
16	G-2	Commercial Interruptible	**Fiscal 2022 Bud**	171	927	1,597	1,306	2,844	1,401	866	375	172	26	26	33	9,744
17	G-2	Industrial Interruptible	**Fiscal 2022 Bud**	20,589	22,877	18,294	24,550	27,014	27,918	23,120	20,510	13,144	19,797	22,658	21,423	261,894
18	G-2	Public Authority Interruptible	**Fiscal 2022 Bud**	-	-	-	-	-	-	-	-	-	-	-	-	-
19																-
20	T-3	Transportation Interruptible	**Fiscal 2022 Bud**	664,171	747,355	735,991	762,722	818,492	760,412	730,878	678,356	635,410	624,303	584,152	655,676	8,397,918
21	T-4	Transportation Firm	**Fiscal 2022 Bud**	542,268	599,357	673,140	799,365	840,890	784,557	682,261	579,814	516,386	481,241	491,031	505,285	7,495,596
22				1,227,199	1,370,516	1,429,022	1,587,943	1,689,241	1,574,288	1,437,126	1,279,054	1,165,112	1,125,367	1,097,867	1,182,418	16,165,152

ATMOS ENERGY CORPORATION
KENTUCKY PIPE REPLACEMENT PROGRAM
SURCHARGE CALCULATION OF FORCASTED ACTIVITY

2020 PROJECT DETAILS

Projects	Project Description	No. of services	Installation			Cost of Removal			Retirements		
			Main	Services	Meters	Main	Services	Meters	Main	Services	Meters
PRP.2636.Allen St.FY20	Replace 148 ft of 1.25" Epoxy, 690 ft of 2" Hot Tar, 106 ft of 2" Epoxy, 117 ft of 3" Epoxy, 305 ft of 3" Hot Tar, 1,365 ft of 4" Epoxy, 3,275 ft of 4" Bare Steel., 319 ft of 4" LP PE with 3,550 ft of 2" PE., and 4,225 ft of 4" IP PE. Retire 1 LP Station. 148 Services	148	811,879			$42,730					
	Contractor			358,530			18,870				
	Material			28,120	16,280						
	Overhead			109,383	4,606		5,338				
PRP.2636.Bluff Ave.FY20	Replace 133 ft of 1.25" PE, 2,935 ft of 4" Hot Tar, 1,187 ft of 2" Hot Tar, 1,474 ft of 2" Epoxy IP, with 2,467 ft of 2" HDPE and 3,357 ft of 4" IP HDPE. 142 Services	142	514,367			$27,072					
	Contractor			343,995			18,105				
	Material			26,980	15,620						
	Overhead			104,949	4,419		5,122				
PRP.2636.Crabtree Ave.FY20	Replace 637 ft of 2" Mill Wrap Bare Joint, 1,781 ft of 2" Epoxy, 749 ft of 4" Mill Wrap Bare Joint, 6ft of 6" Epoxy, 2,430 ft of 8" Mill Wrap Bare Joint, 336 ft of 2" Hot Tar, 1,465 ft of 3" Hot Tar with 3,541 ft of 2" PE and 3,185 ft of 6" IP PE. 99 Services	99	713,950			$37,576					
	Contractor			239,828			12,623				
	Material			18,810	10,890						
	Overhead			73,169	3,081		3,571				
PRP.2636.Oak Ave.FY20	Replace 2,372 ft of 4" Hot Tar and 945 ft of 2" Hot Tar IP with 2,879 ft of 2" HDPE. 87 Services	87	260,721			$13,722					
	Contractor			210,758			11,093				
	Material			16,530	9,570						
	Overhead			64,300	2,707		3,138				
PRP.2636.Poplar St Alley.FY20	Replace 439 ft of 1.25" Epoxy, 2,056 ft of 8" Hot Tar, 506 ft of 2" Hot Tar, 1,464 ft of 4" Hot Tar, 149 ft of 8" Epoxy, 407 ft of 4" Mill Wrap, 424 ft of 4" Epoxy with 2,567 ft of 2" PE and 3,169 ft of 8" IP PE. 53 Services	53	626,862			$32,993					
	Contractor			128,393			6,758				
	Material			10,070	5,830						
	Overhead			39,171	1,649		1,912				
PRP.2637.Ohio St.FY20	Replace 468 ft of 2" Epoxy, 258 ft of 2" PE, 2,726 ft of 2" Bare Stl, 1,819 ft of 4" Bare Stl. IP with 3,553 ft of 2" PE and 1,702 ft of 4" PE IP. 50 Services	50	510,163			$26,851					
	Contractor			121,125			6,375				
	Material			9,500	5,500						
	Overhead			36,954	1,556		1,803				
PRP.2637.Old Mayfield Rd.FY20	Replace 207 ft of 2" Epoxy, 8,641 ft of 2" Bare Stl, 220 ft of 4" Bare Stl, 1,157 ft of 2" Epoxy, 615 ft of 2' PE, 3,797 ft of 6" Bare Stl, IP with 13,665 ft of 2" PE and 1,405 ft of 4" PE. IP. 262 Services	262	1,290,644			$67,929					
	Contractor			634,695			33,405				
	Material			49,780	28,820						
	Overhead			193,638	8,153		9,450				
PRP.2637.S 28th St.FY20	Replace 9,503 ft of 2" Bare Stl, 398 ft of 2" PE, 2,187 ft of 4" Bare Stl, 535 ft of 1.25" Epoxy, 881 ft of 2" Epoxy, 1,084 ft of 6" Bare Stl, IP with 11,760 ft of 2" PE and 3,103 ft of 2" PE. IP 187 Services	187	1,298,526			$68,343					
	Contractor			453,008			23,843				

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SURCHARGE CALCULATION OF FORCASTED ACTIVITY

2020 PROJECT DETAILS

Projects	Project Description	No. of services	Installation			Cost of Removal			Retirements		
			Main	Services	Meters	Main	Services	Meters	Main	Services	Meters
	Material			35,530	20,570						
	Overhead			138,207	5,819		6,745				
PRP.2734.E 9th Russville.FY20	Replace 250 ft of 4" Mill Wrap Bare Joint, 5 ft of HDPE, 608 ft of 4" Bare Steel, 192 ft of 1.25" PE, 6,180 ft of 2" Bare Steel, 453 ft of 4" Mill Wrap, 1,106 ft of 2" PE, 570 ft of 3" Bare Steel, 1,963 ft of 2" Epoxy, 378 ft of 1" Bare Steel, 394 ft of 4" Epoxy, 325 ft of 4" PE, with 800 ft of 4" and 11,625 ft of 2" HDPE. 130 Services	130	1,040,317			$54,754					
	Contractor			314,925			16,575				
	Material			24,700	14,300						
	Overhead			96,080	4,045		4,689				
PRP.2734.E Cedar St Fra.FY20	Replace 419 ft of 2" PE, 2,923 ft of 2" Bare Steel, 191 ft of 4" Epoxy, 52 ft of 3" Epoxy, 78 ft of 4" PE, 3,021 ft of 4" Bare Steel, 105 ft of 2" Epoxy LP, with 6,338 ft of 2" IP PE. 109 Services	109	502,238			$26,434					
	Contractor			264,053			13,898				
	Material			20,710	11,990						
	Overhead			80,559	3,392		3,932				
PRP.2734.High St Alley.FY20	Replace 2,516 ft of 6" Bare Stl, 328 ft of 6" Epoxy and 17 ft of 4" Epoxy IP with 3,031 ft of 6" HDPE. 3 Services	3	548,844			$28,887					
	Contractor			7,268			383				
	Material			570	330						
	Overhead			2,217	93		108				
PRP.2734.Jackson Pearl.FY20	Replace 430 ft of 6" Epoxy, 648 ft of 2" Bare Steel, 773 ft of 4" Epoxy, 2,885 ft of 6" Mill Wrap Bare Joint, 2,234 ft of 2" Epoxy, 767 ft of 1.25" Epoxy, 1,592 ft of 4" Bare Steel, 2,500 ft of 6" Bare Steel., with 6,629 ft of 2" and 6,400 ft of 6" IP HDPE. 62 Services.	62	1,185,839			$62,413					
	Contractor			150,195			7,905				
	Material			11,780	6,820						
	Overhead			45,823	1,929		2,236				
PRP.2734.KY 383 Franklin.FY20	Replace 2,891 ft of 6" Bare Steel with 3,011 ft of 6" HDPE. 29 Services	29	280,785			$14,778					
	Contractor			70,253			3,698				
	Material			5,510	3,190						
	Overhead			21,433	902		1,046				
PRP.2735.Lexington Ave.FY20	Replace 524 ft of 6" Epoxy, 1,970 ft of 2" Epoxy, 895 ft of 2" PE, 3,001 ft of 2" Bare Steel, 8 ft of FBE, 2,983 ft of 6" Bare Steel, 2,109 ft of 3" Bare Steel IP. Install 8,510 ft of 2", 1,305 ft of 4" and 3,124 ft of 6" HDPE. 134 Services.	134	1,314,143			$69,165					
	Contractor			324,615			17,085				
	Material			25,460	14,740						
	Overhead			99,036	4,170		4,833				
PRP.2735.Woodsonville.FY20	Replace 250 ft of 2" Epoxy, 298 ft of 1.25" Epoxy, 186 ft of 1.25" Hot Tar, 144 ft of 2" Mill Wrap, 42 ft of 2" Hot Tar, 1,220 ft of 1.5" Bare Steel, 125 ft of 1.5" Epoxy, 127 ft of 1" Hot Tar. Install 1,504 ft of 2" and 944 ft of 4" IP HDPE. 8 Services.	8	277,230			$14,591					
	Contractor			19,380			1,020				
	Material			1,520	880						
	Overhead			5,913	249		289				
PRP.2737.Hwy150	Replace 4,750 ft 4" Bare Stl,IP with 6" PE IP & 1,525 ft 2" Bare IP Stl. with 2" PE IP. 40 Services	40	703,707			$37,037					
	Contractor			96,900			5,100				

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2020 PROJECT DETAILS

Projects	Project Description	No. of services	Installation			Cost of Removal			Retirements		
			Main	Services	Meters	Main	Services	Meters	Main	Services	Meters
	Material			7,600	4,400						
	Overhead			29,563	1,245		1,443				
PRP.2737.KY 52-Danville St.FY20	Replace 2,813 ft of 6" Mill Wrap - Bare Joint, 464 ft of 4" Mill Wrap - Bare Joint, and 2,128 ft of 2" Mill Wrap - Bare Joint, with 2,231 ft of 2" and 2,796 ft of 6" IP HDPE., 56 Services	56	978,263			$51,488					
	Contractor			135,660			7,140				
	Material			10,640	6,160						
	Overhead			41,388	1,743		2,020				
PRP.2738.McCord St.FY20	Replace 39 ft of 1.25" Steel unkown coating, 372 ft of 2" Hot Tar, 1,537 ft of 2" Epoxy, 279 ft of 6" Painted, 226 ft of 4" Hot Tar, 3,901 ft of 4" Painted, 15 ft of 6" Epoxy, 30 ft of 1.25" Epoxy, 360 ft of 2" Mill Wrap, 973 ft of 4" Epoxy, 103 ft of 2" PE, 63 ft of 1.25" Hot Tar, 97 ft of .75" Hot Tar, 4,128 ft of 2" Painted IP, with 6,042 ft of 2", 2,612 ft of 4" and 1,401 ft of 6" HDPE. 180 Services	180	1,479,597			$77,874					
	Contractor			436,050			22,950				
	Material			34,200	19,800						
	Overhead			133,034	5,601		6,493				
PRP.2738.W High St Lebanon.FY20	Replace 56 ft of 3" Painted Steel, 1,325 ft of 4" Bare Steel, 10 ft of 4" Mill Wrap, 3,685 ft of 2" Epoxy, 1,022 ft of 2" Bare Steel, 638 ft of 2" Hot Tar, 205 ft of 1.25" Painted Steel, 314 ft of 1.25" Epoxy, 2,829 ft of 4" Painted Steel, 6 ft of 2" HDPE, 1,179 ft of 2" Mill Wrap, 47 ft of 4" Epoxy, 9 ft of 1" PE, 112 ft of 2" PE, 100 ft of .75" Hot Tar, 6,054 ft of 2" Painted Steel IP, with 10,285 ft of 2" and 4,381 ft of 4" HDPE. 235 Services	235	1,406,462			$74,024					
	Contractor			569,288			29,963				
	Material			44,650	25,850						
	Overhead			173,683	7,313		8,476				
PRP.2738.W Walnut Lebon.FY20	Replace 153 ft of 1.25" Bare Steel, 3,999 ft of 4" Bare Steel, 660 ft of 4" Mill Wrap, 999 ft of 2" Epoxy, 3,744 ft of 2" Bare Steel, 30 ft of 1.25" Painted Steel, 732 ft of 4" Painted Steel, 85 ft of .75" PE, 6 ft of 2" HDPE, 572 ft of 2" Mill Wrap, 28 ft of 4" Epoxy, 9 ft of 1" PE, 120 ft of 2" PE, 754 ft of 6" Bare Steel, 794 ft of 2" Painted Steel IP with 11,592 ft of 2" and 2,489 ft of 4" IP HDPE. 190 Services	190	1,741,471			$91,656					
	Contractor			460,275			24,225				
	Material			36,100	20,900						
	Overhead			140,424	5,913		6,853				
PRP.2734.Misc company crew	PRP work done throughout the FY with company crews.	-	299,626			$15,770					
	Contractor			-			-				
	Material			-	-						
	Overhead			-	-		-				
	Total specific budgeted projects & bare steel functional		**17,785,635**	**7,386,874**	**311,026**	**936,086**	**360,508**				
	Non specfic bare steel functional			1,119,621	47,142		54,642				
	Total budgeted 2020 projects		**17,785,635**	**8,506,495**	**358,168**	**936,086**	**415,150**		**$3,487,667**	**2,198,833**	**146,324**
	Actual 2020 Project Costs		15,898,814	9,870,719		836,780	519,512		783,252	326,966	

ATMOS ENERGY CORPORATION
KENTUCKY PIPE REPLACEMENT PROGRAM
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2021 PROJECT DETAILS

			Installation			Cost of Removal			Retirements		
Projects	Project Description	No. of services	Main	Services	Meters	Main	Services	Meters	Main	Services	Meters
PRP.2635.Maple Ave	Replace 1,268 ft. of 2" Epoxy, 527 ft. of 1.25 Bare Stl., 63 ft. of 3" Epoxy, 218 ft. of 2" N/A Plastic, 108 ft. of 1" Bare Stl., 2,491 ft. of 2" Bare Stl., 1,684 ft. of 3" Bare Stl., 130 ft. of 1.25 PE. Install 6,610 ft. of 2" PE. 123 Services	123	554,733			$29,196					
	Contractor			377,426			19,865				
	Material			46,740	18,573						
	Overhead			126,613	5,544		5,930				
PRP.2635.Princeton North	Replace 28 ft. of 2" Mill Wrap, 286 ft. of 1.25 Epoxy, 828 ft. of 2 ft, 461 ft. of 1.25 Bare Stl., 6,718 ft. of 2" Bare Stl., 912 ft. of 4" Epoxy, 736 ft. of 2" Epoxy, 435 ft. of 4" Bare Stl., 71 ft. of 1" Bare Stl., 687 ft. of 1.25 N/A Plastic, 2,289 ft. of 3" Bare Stl.,and 110 ft. of Epoxy. Install 7,061 ft. of 2" and 4,115 ft. of 4" HDPE. 162 Services	162	872,575			$45,925					
	Contractor			497,097			26,163				
	Material			61,560	24,462						
	Overhead			166,759	7,302		7,810				
PRP.2635.W Main St	Replace 131 ft. of 1" Bare Stl., 234 ft. of 1.25 Bare Stl., 100 ft. of 1.25 N/A PE.,1,424 ft. of 2" Epoxy, 3,913 ft. of 2"Bare Stl., 117 ft. of MDPE 2", 793 ft. of 4" Bare Stl., 317 ft. of 4" Epoxy. Install 7,454 ft. of 2" and 1,222 ft. of 4" HDPE . 145 Services	145	812,302			$42,753					
	Contractor			444,933			23,418				
	Material			55,100	21,895						
	Overhead			149,260	6,536		6,990				
PRP.2636.14th St	Replace 243 ft. of 3" Hot Tar, 763 ft. of 6" Hot Tar, 783 ft. of 8" Mill Wrap, 894 ft. of 8" Hot Tar, 1,599 ft. of 2" Hot Tar, 106 ft. of 1.25" Unknown Coating, 102 ft. of 1.25" Epoxy, 387 ft. of 2" Mill Wrap, 75 ft. of 2" Bare Steel, 233 ft. of 4" Bare Steel, 79 ft. of 3" Bare Steel, 249 ft. of 1.25" Hot Tar, 241 ft. of 4" Mill Wrap, 138 ft. of 2" PE, 677 ft. of 2" Epoxy, 7 ft. of 6" PE, 315 ft. of 6" Epoxy, 352 ft. of 2" Fusion Bonded Epoxy IP. Install 4,266 ft. of 2", 228 ft. of 4" and 2,750 ft. of 8" IP HDPE. 50 Services	50	869,599			$45,768					
	Contractor			153,425			8,075				
	Material			19,000	7,550						
	Overhead			51,469	2,254		2,410				
PRP.2636.25th-Clay	Replace 444 ft. of 8" Mill Wrap Bare Joint, 290 ft. of 6" Epoxy, 539 ft. of 6" Bare Steel IP. Install 444 ft. of 4" PE and 820 ft. of 6" IP PE. 18 Services	18	167,451			$8,813					
	Contractor			55,233			2,907				
	Material			6,840	2,718						
	Overhead			18,529	811		868				
PRP.2636.McCulloch	Replace 751 ft. of 2" Hot Tar IP. Install 751 ft. of 2" IP HDPE. 18 Services	18	67,585			$3,557					
	Contractor			55,233			2,907				
	Material			6,840	2,718						
	Overhead			18,529	811		868				
PRP.2636.Sycamore St	Replace 394 ft. of 1.25" Epoxy, 69 ft. of 2" Unknown Coating, 2,233 ft. of 8" Hot tar, 571 ft. of 2" Mill Wrap, 102 ft. of 8" Mill Wrap bare Joint IP. Install 700 ft. of 2" and 3,025 ft. of 8" IP HDPE. 48 Services	48	490,567			$25,819					
	Contractor			147,288			7,752				
	Material			18,240	7,248						
	Overhead			49,410	2,164		2,314				

ATMOS ENERGY CORPORATION
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2021 PROJECT DETAILS

Projects	Project Description	No. of services	Installation			Cost of Removal			Retirements		
			Main	Services	Meters	Main	Services	Meters	Main	Services	Meters
PRP.2637.Bridge St Ph. 2	Replace 299 ft. of 6" Bare Steel, 1,382 ft. of 6" Mill Wrap Bare Joint, 1 ft. of 2" Epoxy, 76 ft. of 6" Mill Wrap, 605 ft. of Fusion Bonded Epoxy, 60 ft. of 2" Bare and 6,378 ft. of 2" Mill Wrap Bare Joint. Install 6,536 ft. of 2" and 2,265 ft. of 6" HDPE. 140 Services	140	788,703			$41,511					
	Contractor			429,590			22,610				
	Material			53,200	21,140						
	Overhead			144,113	6,310		6,749				
PRP.2637.Broad St	Replace 2 ft. of 2" Epoxy, 3,767 ft. of 6" Mill Wrap Bare Joint, 1,786 ft. of 2" Mill Wrap Bare Joint, 166 ft. of 2" PE, 5 ft. of Fusion Bond Epoxy, 308 ft. of 3" Mill Wrap Bare Joint, 825 ft. of 2" Mill Wrap IP. Install 3,223 ft. of 2" and 3,807 ft. of 6" IP HDPE. 60 Services	60	698,197			$36,747					
	Contractor			184,110			9,690				
	Material			22,800	9,060						
	Overhead			61,763	2,704		2,892				
PRP.2637.Hill St	Replace 60 ft. of 2" Steel Unknown Coating, 6,753 ft. of 2" Mill Wrap Bare Joint, 150 ft. of 2" Bare Steel, 93 ft. of 2" Fusion Bonded Epoxy, 843 ft. of 2" Epoxy, 805 ft. of 2" PE, 34 ft. of 4" Mill Wrap Bare Joint IP. Install 8,738 ft. of 2" IP HDPE. 188 Services	188	621,401			$32,705					
	Contractor			576,878			30,362				
	Material			71,440	28,388						
	Overhead			193,523	8,474		9,063				
PRP.2637.S 3rd St	Replace 53 ft. of 2" Epoxy, 6 ft. of 6" Bare, 709 ft. of 2" Mill Wrap Bare Joint, 734 ft. of 2" Fusion Bonded Epoxy, 1 ft. of 4" Epoxy, 4,042 ft. of 6" Mill Wrap Bare Joint, 3 ft. of 6" Epoxy, 666 ft. of 2" Mill Wrap IP. Install 2,174 ft. of 2" and 4,039 ft. of 6" IP HDPE. 33 Services	33	672,051			$35,371					
	Contractor			101,261			5,330				
	Material			12,540	4,983						
	Overhead			33,969	1,487		1,591				
PRP.2734.4th St	Replace 430 ft. of 4" Bare Steel, 434 ft. of 1.25" Epoxy, 571 ft. of 4" Epoxy, 7 ft. of 4" PE, 512 ft. of 6" Mill Wrap, 3,891 ft. of 6" Mill Wrap Bare Joint, 427 ft. of 2" Epoxy and 379 ft. of 2" Bare Steel. Install 660 ft. of 2" and 4,427 ft. of 6" IP HDPE. 18 Services.	18	903,938			$47,576					
	Contractor			55,233			2,907				
	Material			6,840	2,718						
	Overhead			18,529	811		868				
PRP.2734.Brick St Franklin	Replace 204 ft. of 2" Epoxy, 342 ft. of 2" Bare Steel, 159 ft. of 4" Mill Wrap, 15 ft. of 3" Fusion Bond Epoxy, 542 ft. of 2" Mill Wrap, 78 ft. of 2" Fusion Bond Epoxy, 559 ft. of 2" Painted, 7 ft. of 4" PE, 2,894 ft. of 3" Bare Steel, 415 ft. of 2" PE, 1,223 ft. of 4" Bare Steel, 326 ft. of 1.25" PE. Install 4,935 ft. of 2" and 1,844 ft. of 4" IP HDPE. 80 Services	80	607,457			$31,971					
	Contractor			245,480			12,920				
	Material			30,400	12,080						
	Overhead			82,350	3,606		3,857				
PRP.2734.E 3rd Russellville	Replace 518 ft. of 1" Bare Steel, 5 ft. of 2" HDPE, 7 ft. of 4" Epoxy, 1,801 ft. of 2" Epoxy, 282 ft. of 2" PE, 4,265 ft. of 2" Bare Steel. Install 6,879 ft. of 2" PE. 101 Services	101	544,050			$28,634					
	Contractor			309,919			16,312				
	Material			38,380	15,251						
	Overhead			103,967	4,552		4,869				

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2021 PROJECT DETAILS

Projects	Project Description	No. of services	Installation			Cost of Removal			Retirements		
			Main	Services	Meters	Main	Services	Meters	Main	Services	Meters
PRP.2734.Gayle Way	Replace 1,447 ft. of 1.25" Bare Steel, 28 ft. of 6" PE, 372 ft. of 3" Bare Steel, 367 ft. of 2" PE, 318 ft. of 1.25 Epoxy, 2,218 ft. of 2" Bare Steel, 92 ft. of 2" Epoxy, 362 ft. of 6" Bare Steel. Install 1,627 ft. of 2" and 400 ft. of 6" IP HDPE. 56 Services	56	207,763			$10,935					
	Contractor			171,836			9,044				
	Material			21,280	8,456						
	Overhead			57,645	2,524		2,700				
PRP.2734.High St Alley	Replace 2,516 ft. of 6" Bare Stl, 328 ft. of 6" Epoxy and 17 ft. of 4" Epoxy IP. Install 3,031 ft. of 6" HDPE. 3 Services	3	566,501			$29,816					
	Contractor			9,206			485				
	Material			1,140	453						
	Overhead			3,088	135		145				
PRP.2734.LP W.KY Ave Franklin	Replace 2,758 ft. of 3" Bare Stl, 103 ft. of 4" Painted, 238 ft. of 2" PE, 573 ft. of 1.25" Steel, 6 ft. of 4" Fusion Bond Epoxy, 68 ft. of 2" Epoxy, 1,517 ft. of 4" Epoxy, 817 ft. of 3" Epoxy, 1,517 ft. of 6" Bare Steel, 633 ft. of 2" Bare Steel, 2,506 ft. of 4" Bare steel, 508 ft. of 4" PE, 183 ft. of 1.5" Bare Steel, 371 ft. of 4" Mill Wrap, 222 ft. of 4" Steel Unknown Coating. Install 1,700 ft. of 6" and 7,700 ft. of 2" IP HDPE. 137 Services	137	862,370			$45,388					
	Contractor			420,385			22,126				
	Material			52,060	20,687						
	Overhead			141,025	6,175		6,604				
PRP.2734.Pearl - Boat Lndg	Replace 1,305 ft. of 2" Bare Steel , 154 ft. of 2" PE and 187 ft. of 2" Steel. Install 1,434 ft. of 2" IP HDPE. 6 Services	6	141,855			$7,466					
	Contractor			18,411			969				
	Material			2,280	906						
	Overhead			6,176	270		289				
PRP.2734.Sycamore St	Replace 3,085 ft of 4" Bare Steel, 30 ft of 2" Millwrap Bare Joint, 496 ft of 2" Unknown Coating, 218 ft of 2" Mill Wrap, 813 ft of 2" Painted, 265 ft of 2" Fusion Bonded Epoxy, 136 ft of 2" PE, 1,326 ft of 2" Bare Steel HP and IP. Install 1,650 ft of 2" and 3,164 ft of 6" HDPE. Retire Purchase and TB Stations, install new TB Station. 34 Services	34	853,452			$44,919					
	Contractor			104,329			5,491				
	Material			12,920	5,134						
	Overhead			34,999	1,532		1,639				
PRP.2735.Grandview Ave	Replace 2,417 ft. of 2" Bare Steel, 689 ft. of 2" Fusion Bonded Epoxy, 645 ft. of 1.25" Bare Steel, 476 ft. of 3" Painted, 350 ft. of 3" Mill Wrap Bare Joint, 63 ft. of 1.25" Mill Wrap Bare Joint, 508 ft. of 2" Unknown Coating, 452 ft. of 2" PE, 313 ft. of 2" Painted, 400 ft. of 2" Mill Wrap, 397 ft. of 2" Epoxy, 433 ft. of 3" Bare Steel, 6 ft. of 1.25" Hot Tar, 686 ft. of 2" Mill Wrap Bare Joint IP. Install 6,383 ft. of 2" and 1,637 ft. of 4" IP HDPE. 104 Services	104	700,151			$36,850					
	Contractor			319,124			16,796				
	Material			39,520	15,704						
	Overhead			107,055	4,688		5,014				
PRP.2735.Hiseville	Replace 430 ft. of 1.25" Mill Wrap, 375 ft. of 2" PE, 308 ft. of 1.25" Fusion Bonded Epoxy, 3,443 ft. of 2" Bare Steel, 207 ft. of 2" Fusion Bonded Epoxy, 181 ft. of 1.25" Bare, 146 ft. of 1.25" Unknown Coating, 833 ft. of 2" Mill Wrap, 11 ft. of 2" Hot Tar, 110 ft. of 2" Unknown Coating, 201 ft. of 2" PE, 993 ft. of 3" Bare Steel. Install 7,237 ft. of 2" IP HDPE. 62 Services	62	497,159			$26,166					
	Contractor			190,247			10,013				

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2021 PROJECT DETAILS

Projects	Project Description	No. of services	Installation			Cost of Removal			Retirements		
			Main	Services	Meters	Main	Services	Meters	Main	Services	Meters
	Material			23,560	9,362						
	Overhead			63,821	2,795		2,989				
PRP.2735.Oakland	Replace 19 ft. of 2" PE, 638 ft. of 1.25" Bare Steel, 2,515 ft. of 2" Bare Steel, 1,038 ft. of 2" Epoxy, 143 ft. of 2" Hot Tar, 25 ft. of 2" Mill Wrap, 210 ft. of 1.25" Epoxy, 54 ft. of 1.25" Hot Tar. Install 1,300 ft. of 2" and 2,700 ft. of 4" IP HDPE. Replace TBS. 27 Services	27	462,822			$24,359					
	Contractor			82,850			4,361				
	Material			10,260	4,077						
	Overhead			27,793	1,217		1,302				
PRP.2735.Rowletts	Replace 3,060 ft. of 2" Bare Steel, 372 ft. of 2" Hot Tar, 987 ft. of 2" Mill Wrap, 105 ft. of 2" PE, 837 ft. of 2" Epoxy IP. Install 5,360 ft. of 2" IP HDPE. 42 Services	42	436,494			$22,973					
	Contractor			128,877			6,783				
	Material			15,960	6,342						
	Overhead			43,234	1,893		2,025				
PRP.2737.Danville Ave	Replace 394 ft. of 2" PE, 487 ft. of 4" Steel Unknown Coating, 7,188 ft. of 2" Mill Wrap Bare joint, 261 ft. of 2" Epoxy, 1,046 ft. of 2" Fusion Bond Epoxy, and 99 ft. of 2" Mill Wrap IP. Install 3,468 ft. of 2" and 5,266 ft. of 4" IP HDPE. 102 Services	102	900,123			$47,375					
	Contractor			312,987			16,473				
	Material			38,760	15,402						
	Overhead			104,996	4,597		4,917				
PRP.2737.Hill Ct Lancaster	Replace 1,566 ft. of 2" Mill Wrap Bare Joint, 9 ft. of 2" HDPE, and 541 ft. of 4" Mill Wrap Bare Joint. Install 2,117 ft. of 2" IP HDPE. 43 services	43	248,881			$13,099					
	Contractor			131,946			6,945				
	Material			16,340	6,493						
	Overhead			44,263	1,938		2,073				
PRP.2737.Ledford Ln Lancaster	Replace 310 ft. of 2" unknown coating, 49 ft. of 2" Mill Wrap, 158 ft. of 2" Bare Stl., 40 ft. of 1.25" PE, 246 ft. of Epoxy, 3,433 ft. of 2" Painted and 302 ft. of 1.25" Epoxy IP. Install 1,038 ft. of 2" and 3,348 ft. of 4" IP HDPE. 48 services	48	488,042			$25,686					
	Contractor			147,288			7,752				
	Material			18,240	7,248						
	Overhead			49,410	2,164		2,314				
PRP.2737.W Broadway	Replace 261 ft. of 4" bare Stl., 105 ft. of 2" Hot Tar, 835 ft. of 2" Epoxy, 260 ft. of Mill Wrap Bare Joint, 209 ft. of 4" Epoxy, 217 ft. of 2" Bare Stl., 545 ft. of Mill Wrap Bare Joint IP. Install 2,340 ft. of 2" IP HDPE. 30 Services	30	420,092			$22,110					
	Contractor			92,055			4,845				
	Material			11,400	4,530						
	Overhead			30,881	1,352		1,446				
PRP.2738.Perryville Rd	Replace 695 ft. of 1.25" Epoxy, 5,829 ft. of 2" Painted Steel, 441 ft. of 3" painted, 1,516 ft. of 2" Mill Wrap, 527 ft. of 2" Epoxy, 420 ft. of 3" Epoxy, 1,539 ft. of 4" Painted, 75 ft. of 2" Hot Tar, 417 ft. of 1.25" Hot Tar IP. Install 6,677 ft. of 2" and 5,029 ft. of 4" IP HDPE. 211 Services	211	1,126,874			$59,309					
	Contractor			647,454			34,077				
	Material			80,180	31,861						
	Overhead			217,199	9,511		10,172				
	Total specific budgeted projects & bare steel functional		**16,583,188**	**9,354,286**	**409,598**	**872,799**	**438,079**				
	Non specfic bare steel functional			329,948	14,447		15,452				
	Total budgeted 2021 projects		**16,583,188**	**9,684,233**	**424,045**	**872,799**	**453,532**		**$4,105,719**	**2,352,236**	**152,091**

ATMOS ENERGY CORPORATION
KENTUCKY PIPE REPLACEMENT PROGRAM
SURCHARGE CALCULATION OF FORCASTED ACTIVITY

2022 PROJECT DETAILS

			Installation			Cost of Removal			Retirements		
Projects	Project Description	No. of services	Main	Services	Meters	Main	Services	Meters	Main	Services	Meters
Adyl.2635.2nd St	Replace 149 ft of 1.25" PE, 1,340 ft of 2" Adyl A, 1,488 ft of 1.25" Adyl A, and 1,145 ft of 2" PE. Install 4,645 ft of 2" HDPE. 64 services	64	297,732			$15,670					
	Contractor			208,544			10,976				
	Material			24,320	9,770						
	Overhead			58,612	2,459		2,763				
Adyl.2635.Hillview Dr	Replace 2,176 ft. of 2" PE, 2,581 ft of 2" Adyl A and 2,453 ft of 1.25" Adyl A. Install 7,209 ft of 2" HDPE. 59 Services	59	455,049			$23,950					
	Contractor			192,252			10,119				
	Material			22,420	9,007						
	Overhead			54,033	2,267		2,547				
Adyl.2635.Sunset Circle	Replace 11 ft of 2" PE, 20 ft of 1.25" PE, 3,155 ft of 2" Adyl A, and 2,585 ft of 1.25" Adyl A. Install 5,777 ft of 2" HDPE. 70 Services	70	361,026			$19,001					
	Contractor			228,095			12,005				
	Material			26,600	10,686						
	Overhead			64,107	2,690		3,022				
Adyl.2635.Westend St	Replace 1,636 ft of 2" PE and 4,060 ft of 2" Adyl A. Install 5,696 ft of 2" HDPE. 47 Services	47	354,380			$18,652					
	Contractor			153,150			8,061				
	Material			17,860	7,175						
	Overhead			43,043	1,806		2,029				
PRP.2634. US 41 Hanson	Replace 1,992 ft of 2" Bare Stl., 1,018 ft of 2" Mill Wrap, 175 ft of 1.25" PE, 15 ft of Epoxy, 25 ft of 2" Stl, unknown coating, 384 ft of Fusion Bond Epoxy. Install 3,000 ft of 2" HDPE; 39 services.	39	205,667			$10,825					
	Contractor			127,082			6,689				
	Material			14,820	5,954						
	Overhead			35,717	1,499		1,683				
PRP.2634.Robards Phase 1	Replace 984 ft of 2" PE, 500 ft of 2" Mill Wrap Bare Joint, 167 ft of 1" Mill Wrap, 891 ft of 2" Mill Wrap, 71 ft of 1.25" Mill Wrap, 2,339 ft of 2" Bare Stl., 857 ft of 2" Epoxy, 236 ft of 2" Unkown coating. Install 5,238 ft of 2" HDPE; 61 services.	61	334,106			$17,585					
	Contractor			198,769			10,462				
	Material			23,180	9,312						
	Overhead			55,864	2,344		2,633				
PRP.2634.Robards Phase 2	Replace 2,618 ft of 2" Bare Stl., 288 ft of 2" Mill Wrap, 14 ft of Fusion Bond Epoxy, 517 ft of 2" Epoxy, 112 ft of Fusion Bond Epoxy. Install 3,548 ft of 2" HDPE; 28 services	28	245,756			$12,935					
	Contractor			91,238			4,802				
	Material			10,640	4,274						
	Overhead			25,643	1,076		1,209				
PRP.2634.Slaughters.FY22	Replace 539 ft of 2" Mill Wrap, 442 ft of 2" Unknown coating, 117 ft of 1" Epoxy, 48 ft of 2" PE, 18 ft of 2" Epoxy, 309 ft of 1.25" PE, 231 ft of 2" Mill Wrap Bare joint, 352 ft of 1" Bare Stl, 4214 ft of 2" Bare Stl. Install 6,270 ft of 2" HDPE; 35 services	35	363,503			$19,132					
	Contractor			114,048			6,003				
	Material			13,300	5,343						
	Overhead			32,053	1,345		1,511				

ATMOS ENERGY CORPORATION
KENTUCKY PIPE REPLACEMENT PROGRAM
SURCHARGE CALCULATION OF FORCASTED ACTIVITY

2022 PROJECT DETAILS

Projects	Project Description	No. of services	Installation			Cost of Removal			Retirements		
			Main	Services	Meters	Main	Services	Meters	Main	Services	Meters
PRP.2635.S. Jefferson	Replace 311 ft of 4" Bare Stl., 86 ft of 4" PE, 172 ft of 4" Fusion Bond Epoxy, 107 ft of 1.25" PE, 83 ft of 2" Stl. Unknown coating, 171 ft of 2" Epoxy, 3,048 ft of 2" Bare Stl., 1,820 ft of 3" Bare Stl., 191 ft of 1.25" Bare Stl., 90 ft of 4" Stl. unkown coating, 324 ft of 4" MIll Wrap, 106 ft of 2" PE. Install 2,849 ft of 2" and 1,215 ft of 4" HDPE; 60 services	60	932,368			$49,072					
	Contractor			195,510			10,290				
	Material			22,800	9,160						
	Overhead			54,949	2,305		2,590				
PRP.2636.Bluff Avenue	Replace 133 ft. of 1.25" PE, 2,935 ft. of 4" Hot Tar, 1,187 ft. of 2" Hot Tar, 1,474 ft. of 2" Epoxy IP. Install 2,467 ft. of 2" HDPE and 3,357 ft. of 4" IP HDPE. 142 Services	142	518,615			$27,296					
	Contractor			462,707			24,353				
	Material			53,960	21,678						
	Overhead			130,045	5,456		6,130				
PRP.2636.E 4th St.FY22	Replace 523 ft of 2" Mill Wrap, 1,991 ft of 6" Stl., unknown coating, 46 ft of 6" Mill Wrap, 1,899 ft of 6" Mill Wrap Bare joint. Install 523 ft of 2" and 3,936 ft of 6" HDPE; 29 services.	29	583,168			$30,693					
	Contractor			94,497			4,974				
	Material			11,020	4,427						
	Overhead			26,559	1,114		1,252				
PRP.2636.Legion - Allen.FY22	Replace 2,998 ft. of 4" Bare Stl. Install 2,998 ft. of 4" HDPE; 38 services	38	299,001			$15,737					
	Contractor			123,823			6,517				
	Material			14,440	5,801						
	Overhead			34,801	1,460		1,640				
PRP.2636.McClarty Ave.FY22	Retire 967 ft of 4" Mill Wrap Bare Joint, 17 ft of 1.25" Epoxy, 184 ft of 2" Mill Wrap Tie back Main to existing 6" Main with 125 ft of 2" IP HDPE. 2 Services	2	99,695			$5,247					
	Contractor			6,517			343				
	Material			760	305						
	Overhead			1,832	77		86				
PRP.2636.Oak Avenue	Replace 2,372 ft. of 4" Hot Tar and 945 ft. of 2" Hot Tar IP. Install 2,879 ft. of 2" HDPE. 87 Services	87	297,935			$15,681					
	Contractor			283,490			14,921				
	Material			33,060	13,281						
	Overhead			79,676	3,343		3,755				
PRP.2637.Hayes Ave	Replace 5,453 feet of 2" Mill Wrap Bare joint, 754 feet of 2" Mill Wrap, 1,094 feet of 1.25" Mill Wrap with 7,300 feet of 2" HDPE; 103 services	103	534,798			$28,147					
	Contractor			335,626			17,665				
	Material			39,140	15,724						
	Overhead			94,328	3,958		4,446				
PRP.2637.Leiberman St	Replace 3,876 feet of 2" Mill Wrap Bare Joint, 1 foot of 4" Epoxy, 440 feet of 3/4" PE, 3 feet of 4" Mill Wrap, 842 feet of 2" PE, 2,245 feet of 6" Mill Wrap Bare Joint, 1,286 feet of 1.25" PE, 5 feet of 2" PE with 6,477 feet of 2" and 2,221 feet of 6" HDPE; 98 Services	98	695,885			$36,626					
	Contractor			319,333			16,807				
	Material			37,240	14,961						
	Overhead			89,749	3,766		4,230				

ATMOS ENERGY CORPORATION
KENTUCKY PIPE REPLACEMENT PROGRAM
SURCHARGE CALCULATION OF FORCASTED ACTIVITY

2022 PROJECT DETAILS

			Installation			Cost of Removal			Retirements		
Projects	Project Description	No. of services	Main	Services	Meters	Main	Services	Meters	Main	Services	Meters
PRP.2637.Locust St	Replace 2,008 ft of 2" Mill Wrap Bare Joint, 1,911 ft of 2" Mill Wrap, 5 ft of 4" Mill Wrap, 350 ft of Fusion Bond Epoxy, 39 ft of 4" Epoxy, 3,077 ft of 4" Mill Wrap Bare Joint, 224 ft of 2" Stl unknown coating, Install 3,865 ft of 2" and 3,749 ft of 4" HDPE; 42 services	42	547,034			$28,791					
	Contractor			136,857			7,203				
	Material			15,960	6,412						
	Overhead			38,464	1,614		1,813				
PRP.2637.Myers St	Replace 41 feet of 2" Bare Stl., 348 feet of 2" PE, 3,313 feet of 2" Mill Wrap Bare Joint, 385 feet of 2" Mill Wrap, 399 feet of 2" Fusion Bond Epoxy. Install 4,487 feet of 2" HDPE; 35 services.	35	283,140			$14,902					
	Contractor			114,048			6,003				
	Material			13,300	5,343						
	Overhead			32,053	1,345		1,511				
PRP.2637.Schneidman Rd.FY22	Replace 7,376 ft of 2" Mill Wrap Bare Joint, 913 ft of 2" Mill Wrap, 1,131 ft of 2" Bare Steel, 5 ft of 4" Mill Wrap, 13 ft of 2" Epoxy, 131 ft of 2" PE, 1,010 ft of 4" Mill Wrap Bare Joint IP. Install 7,449 ft of 2" and 1,056 ft of 4" IP HDPE; 119 Services	119	586,875			$30,888					
	Contractor			387,762			20,409				
	Material			45,220	18,167						
	Overhead			108,981	4,573		5,137				
PRP.2734.Avery Dr	Replace 1,234 ft. of 4" Bare Steel, 190 ft of 3" Bare Steel 1,285 ft of 2" Bare Steel, 373 ft of 1.25" Epoxy and 307 ft of 2" Epoxy. Install 1,501 ft of 2" and 882 ft of 4" IP HDPE. 38 Services	38	222,575			$11,714					
	Contractor			123,823			6,517				
	Material			14,440	5,801						
	Overhead			34,801	1,460		1,640				
PRP.2734.Centerline	Replace 30,800 ft of 8" HPD Bare Steel Main with 30,800 ft of 8" Fusion Bond Epoxy HPD Steel main and 3,382 ft of 2" and 4,150 ft of 4" HDPE, also replace 2 Town Border Stations; 8 services	8	9,645,710			$507,669					
	Contractor			26,068			1,372				
	Material			3,040	1,221						
	Overhead			7,326	307		345				
PRP.2737. W Walnut	Replace 9 ft of 4" Mill Wrap, 327 ft of 2" Mill Wrap, 2,520 ft of 2" Bare Stl., 2,242 ft of 2" PE, 125 ft of 2" Hot Tar, 390 ft of 4" Mill Wrap Bare joint. Install 700 ft of 2" and 2,923 ft of 4" HDPE; 27 services.	27	630,934			$33,207					
	Contractor			87,980			4,631				
	Material			10,260	4,122						
	Overhead			24,727	1,037		1,165				
PRP.2737.Buford St.FY22	Replace 283 ft of 2" Mill Wrap, 485 ft of 4" Epoxy, 198 ft of 2" PE, 215 ft of 1.25" of Bare stl., 676 ft of 2" Painted, 579 ft of 4" Mill Wrap, 106 ft of 2" Stl unknown coating, 1,489 ft of 4" Mill Wrap bare Joint, 265 ft of 1.25 Mill Wrap, 537 ft of 2" Mill Wrap Bare Joint, 4 ft of 2" Epoxy, 192 ft of 2" Bare Stl., 110 ft of 1.25" Epoxy. Install 3,246 ft of 2" and 1,893 ft of 4" HDPE. 54 services.	54	560,608			$29,506					

ATMOS ENERGY CORPORATION
KENTUCKY PIPE REPLACEMENT PROGRAM
SURCHARGE CALCULATION OF FORCASTED ACTIVITY

2022 PROJECT DETAILS

Projects	Project Description	No. of services	Installation			Cost of Removal			Retirements		
			Main	Services	Meters	Main	Services	Meters	Main	Services	Meters
	Contractor			175,959			9,261				
	Material			20,520	8,244						
	Overhead			49,454	2,075		2,331				
PRP.2737.Lancaster St	Replace 929 ft of 2" Bare Stl., 6 ft of 4" PE, 261 ft of 2" Mill Wrap, 341 ft of 2" Stl unknown coating, 358 ft of 2" Fusion Bond Epoxy, 365 ft of 2" Epoxy, 1,256 ft of 2" Mill Wrap Bare Joint, 1,117 ft of 4" Mill Wrap Bare Joint. Install 3,580 ft of 2" and 953 ft of 4" HDPE; 37 services.	37	608,308			$32,016					
	Contractor			120,565			6,346				
	Material			14,060	5,648						
	Overhead			33,885	1,422		1,597				
PRP.2737.Pleasantwood Dr.FY22	Replace 100 ft of 2" Hot Tar, 309 ft of 2" Mill Wrap, 2,112 ft of 4" Bare Stl., 1,148 ft of 3" Bare Stl., 216 ft of 4" Hot Tar, 257 ft of 2" PE, 2,193 ft of 2" Bare Stl. Install 5,534 ft of 2" and 1,471 ft of 4" HDPE; 80 services.	80	514,984			$27,104					
	Contractor			260,680			13,720				
	Material			30,400	12,213						
	Overhead			73,265	3,074		3,453				
PRP.2737.Totten Ave.FY22	Replace 1,037 ft of 4" Mill Wrap, 6,283 ft of 2" Painted, 659 ft of 2" Mill Wrap, 231 ft of 2" Stl unknown coating. Install 5,950 ft of 2" and 1,045 ft of 4" HDPE; 120 services.	120	656,477			$34,551					
	Contractor			391,020			20,580				
	Material			45,600	18,319						
	Overhead			109,897	4,611		5,180				
PRP.2738.S Harrison St.FY22	Replace 321 ft of 2" Stl unknown coating, 25 ft of 2" Hot Tar, 1,510 ft of 2" Mill Wrap, 947 ft of 2" Mill Wrap Bare Joint, 11 ft of 4" Mill Wrap, 40 ft of 4" PE, 84 ft of 1.25" Stl unkown coating, 520 ft of 6" Epoxy, 230 ft of 1.25" Mill Wrap, 44 ft of 4" Painted Stl., 406 ft of 2" Bare Stl., 85 ft of 4" Bare Stl., 397 ft of 2' Painted Stl., 58 ft of 2" Epoxy, 683 ft of 6" Painted Stl. Install 4,291 ft of 2" and 1,170 ft of 4" HDPE main; 83 services.	83	493,456			$25,971					
	Contractor			270,456			14,235				
	Material			31,540	12,671						
	Overhead			76,012	3,189		3,583				
	Total specific budgeted projects & bare steel functional		**21,328,783**	**7,309,668**	**306,691**	**1,122,568**	**344,540**				
	Non specfic bare steel functional			386,534	16,218		18,219				
	Total budgeted 2022 projects		**21,328,783**	**7,696,203**	**322,908**	**1,122,568**	**362,759**		**4,002,298**	**1,916,352**	**117,794**