STATE OF NEW JERSEY
BOARD OF PUBLIC UTILITIES

IN THE MATTER OF THE PETITION OF PUBLIC SERVICE ELECTRIC AND GAS COMPANY FOR APPROVAL OF ITS CLEAN ENERGY FUTURE-ENERGY CLOUD ("CEF-EC") PROGRAM ON A REGULATED BASIS

BPU Docket No. EO18101115

REBUTTAL TESTIMONY
OF
ANN E. BULKLEY

Submitted on Behalf
of
PUBLIC SERVICE ELECTRIC AND GAS COMPANY

October 5, 2020

P-4

TABLE OF CONTENTS

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
REBUTTAL TESTIMONY
OF
ANN E. BULKLEY
SENIOR VICE PRESIDENT, CONCENTRIC ENERGY ADVISORS, INC.

Q. Please state your name and business address.

A. My name is Ann E. Bulkley. I am employed by Concentric Energy Advisors, Inc. ("Concentric") as a Senior Vice President. My business address is 293 Boston Post Road West, Suite 500, Marlborough, Massachusetts 01752.

Q. Please describe your educational background and your experience in the energy and utilities industries.

A. I hold a Bachelor's degree in Economics and Finance from Simmons College and a Master's degree in Economics from Boston University, and have more than 25 years of experience consulting to the energy industry. I have advised numerous energy and utility clients on a wide range of financial and economic issues with primary concentrations in valuation and utility rate matters. Many of these assignments have included the determination of the cost of capital for valuation and ratemaking purposes. I have included my resume and a summary of testimony that I have filed in other proceedings as Attachment A.

Q. On whose behalf are you submitting this testimony?

A. I am submitting this Rebuttal Testimony on behalf of Public Service Electric and Gas Company ("Public Service" or the "Company"), a wholly-owned subsidiary of Public Service Enterprise Group, Inc. ("PSEG").

Q. Please describe Concentric's activities in energy and utility engagements.

A. Concentric provides regulatory, financial, and economic advisory services to a large number of energy and utility clients across North America. Our regulatory, economic, and market analysis services include utility ratemaking and regulatory advisory services; energy market assessments; market entry and exit analysis; corporate and business unit strategy development; demand forecasting; resource planning; and energy contract negotiations. Our financial advisory activities include buy and sell-side merger, acquisition, and divestiture assignments; due diligence and valuation assignments; project and corporate finance services; and transaction support services. In addition, we provide litigation support services on a wide range of financial and economic issues for clients throughout North America.

I. PURPOSE AND OVERVIEW

Q. What is the purpose of your Rebuttal Testimony?

A. The purpose of my Rebuttal Testimony is to respond to the Direct Testimony of Mr. Matthew I. Kahal on behalf of the Division of Rate Counsel ("Rate Counsel") related

to the just and reasonable return on equity ("ROE") and the appropriate capital structure to be relied upon for the Company's Advanced Metering Infrastructure ("AMI") investments that are proposed to be recovered under the State of New Jersey Board of Public Utilities ("BPU") Infrastructure Investment Program ("IIP") rules.

Q. Are you sponsoring any schedules as part of your Rebuttal Testimony?

A. Yes, I am sponsoring Schedules AEB-1 through AEB-3.

Q. How is the remainder of your Rebuttal Testimony organized?

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

- In Section II, I provide a summary of my Rebuttal Testimony and the important factors to be considered in establishing the ROE for the Company's proposed AMI investments.
- In Section III, I respond to Mr. Kahal's risk assessment of the Company's proposed AMI investment program and cost recovery mechanism.
- In Section IV, I discuss current and prospective capital market conditions and their implications for the ROE in this proceeding.
- In Section V, I review recent authorized ROEs in other jurisdictions as benchmarks for the ROE in this proceeding.
- In Section VI, I respond to Mr. Kahal's ROE model analysis and results.
- Finally, in Section VII, I summarize my conclusions and recommendations.

II. SUMMARY OF CONCLUSIONS

Q. What are your key conclusions and recommendations regarding the appropriate ROE and capital structure to be used for the Company's AMI investments?

A. My key conclusions are as follows:

1) The fundamental premise of Mr. Kahal's current recommendation—that the Company's ROE should be reduced by 0.80 percent compared to the currently-authorized ROE from the 2018 base rate proceeding—is not supported by Mr. Kahal's own analytical results. As I discuss in Section VI, Mr. Kahal's current ROE recommendation (8.80 percent) is only 20 basis points below the ROE he recommended in 2018 (9.00 percent), and the majority of that 20 basis point change is not due to a change in model results, but rather to his post hoc judgment as to where in the range of model results the recommended ROE should fall. The fact is that Mr. Kahal's own DCF model results *have not meaningfully changed* from the time in 2018 when the Rate Counsel and other parties agreed to a Settlement authorizing a 9.60 percent ROE.

2) The New Jersey Administrative Code, at section 14:3-2A, indicates that the purpose of the Infrastructure Investment Program (IPP) is to provide a rate recovery mechanism that encourages and supports necessary accelerated construction, installation and rehabilitation of certain utility plant and equipment that are needed for continued system safety, reliability, resiliency

and sustained economic growth in the State of New Jersey.[1] Therefore, the issue that is to be determined in this proceeding is whether or not the BPU considers the investment in AMI to meet these requirements. To the extent that the BPU determines that the investment in AMI meets the standards established by the N.J.A.C., then there is a requirement that the rate recovery mechanism encourage and support those investments. As discussed in more detail in the remainder of my Rebuttal Testimony, Mr. Kahal's recommended ROE, which is 80 basis points lower than the ROE determined in the Company's base rate proceeding and in other more recent rate case decisions established by the BPU, fails to meet the standards established by the N.J.A.C. and therefore should be rejected.

3) Mr. Kahal bases his recommended ROE solely on the output of his Constant Growth DCF model, without consideration of how his model results are affected by recent market conditions. In fact (as I discuss in detail in Section IV), recent market conditions have been extremely volatile and, by all accounts, today's market has *higher risk* compared to 2018. Despite this, Mr. Kahal's recommendation of an ROE lower than the one he recommended in 2018 suggests he believes that today's market has *lower risk* compared to 2018. But

1 N.J.A.C. 14:3-2A.1.

this view actually runs counter to Mr. Kahal's own analysis of utility Betas, which indicate increased risk (as I discuss in Section VI-C). Moreover, this view runs counter to the views of credit rating agencies since the start of the COVID-19 pandemic. For example, Moody's currently expects that "regulators will be hesitant to significantly reduce allowed returns given the uncertain market environment".[2]

4) Mr. Kahal's risk assessment of the AMI program is incomplete, in that he does not consider the special recovery mechanisms that have been implemented by the proxy group companies. The BPU sets the ROE for a utility based on data provided for a proxy group of risk-comparable companies. Therefore, as I discuss in Section III, the relevant question is not whether the Company has less risk in absolute terms (e.g., as a result of a tracking mechanism), but rather whether the Company has less risk *relative to the proxy group*. In the 2018 base rate proceeding, data was provided demonstrating that the proxy group companies have implemented investment tracking mechanisms that are generally similar to what is being proposed by Public Service in the current proceeding. If Public Service relies on the same type of tracking mechanism as

[2] Moody's Investors Service, "Regulated Electric and Gas Utilities – US: Continued decline in ROEs to heighten pressure on financial metrics," April 17, 2020, at 3.

do the proxy companies then, by definition, Public Service's risk relative to the proxy companies is not reduced by the AMI investment recovery proposal.

5) Mr. Kahal's risk assessment of the AMI program furthermore appears to be premised on a faulty assumption that regulatory lag and prudence disallowances are necessary parts of the regulatory compact. He appears to believe that correction of regulatory lag (via use of a tracking mechanism) justifies an ROE for the AMI investments that is sharply lower than the currently-authorized ROE. However, as I explain in Section III, the fundamental purpose of a tracking mechanism is precisely to correct regulatory lag between rate cases, in order to promote deployment of capital into important projects to the benefit of customers. Use of an individual tracking mechanism has no bearing on the utility's overall cost of equity, and does not justify a lower authorized ROE.

6) In the Company's 2018 extension of the Gas System Modernization Program and Associated Cost Recovery Mechanism ("GSMP II") proceeding in which I was involved, all parties (including Rate Counsel) agreed to rely on the authorized ROE to be established in the 2018 rate case. As I discuss in Section III, the investments made in the GSMP II programs are not different than the investments proposed in the CEF-EC AMI program. In both frameworks, the return is allowed to be recovered between rate cases. It is inconsistent and

unreasonable to expect that incremental investments proposed in the AMI program would receive a lower ROE than the currently-authorized ROE when the Company is requesting essentially the same regulatory recovery for these investments as was proposed and agreed to by Rate Counsel in the GSMP II proceeding.

7) The 8.80 percent ROE proposed by Rate Counsel witness Mr. Kahal is unreasonably low in the context of recently-authorized ROEs across jurisdictions nationally. As shown in Section V, Mr. Kahal mishandles the ROE benchmark data by considering only the average and failing to consider the distribution of individual observations that the average represents. As a result, Mr. Kahal has recommended—perhaps unwittingly—an ROE that falls at the lowest end of the range of recently-authorized ROEs.

Q. Please summarize Mr. Kahal's ROE and capital structure recommendations in this proceeding.

A. Mr. Kahal disagrees with the Company's proposal to rely on the WACC that was established in Public Service's last base rate proceeding, suggesting that the ROE that was established in the Settlement in that case does not reflect the current cost of equity. Mr. Kahal proposes that the Company be authorized an ROE of 8.80 percent, which he suggests is the market cost of equity based on the results of his Constant Growth DCF model. In addition, Mr. Kahal suggests that this ROE is reasonable when considering recently-

authorized ROEs, his interpretation of the risks of the AMI investments, and his view that the current market environment presents a low cost of capital for utilities.

Regarding the capital structure, Mr. Kahal suggests that the Company's actual equity ratio should be relied on but that the equity ratio should be no higher than the 54 percent ratemaking equity ratio established in Public Service's last base rate proceeding.

Q. Do you agree with Mr. Kahal's recommended ROE?

A. No, I do not agree. Mr. Kahal has not demonstrated that his recommended ROE meets the standards established by the Hope and Bluefield decisions: financial integrity, capital attraction, and comparable returns. At the current time, market conditions have recently exceeded the volatility experienced in the 2008/2009 financial market collapse. In addition, risks to the utility industry have been sufficiently concerning to cause Standard and Poor's ("S&P") to downgrade its outlook on the entire industry. But, despite this *higher* risk market context, Mr. Kahal has recommended a *lower* ROE in this case than the ROE he recommended in the Company's 2018 base rate proceeding. Mr. Kahal's recommendation of 8.80 percent on the AMI investments does not meet the comparability standards and would likely be viewed by rating agencies as credit negative.

Q. What is your recommendation with respect to the ROE in this proceeding?

A. I am recommending that the ROE in this proceeding be consistent with the 9.6 percent ROE established in the 2018 base rate proceeding. As I discuss further in Section

III, the authorized ROE that was established in the context of a full base rate case should be relied on for the capital invested through a tracking mechanism. There is no evidence that has been presented by Mr. Kahal in this proceeding that suggests there is any basis to deviate from that precedent.

While Mr. Kahal suggests that there is lower risk associated with the AMI investments due to the timely recovery through a capital tracker, the capital recovery mechanism that is being proposed here is consistent with the approach being taken in PSE&G's ES II, GSMP II, and recently-approved CEF-EE cost recovery mechanisms. There is no reasonable basis to justify a different return on equity for the AMI investments than the investments made through these other programs. Furthermore, as discussed in the remainder of my testimony, the proxy companies have also implemented similar tracker mechanisms. Therefore, comparing the relative risk of Public Service to the proxy group demonstrates that there is no basis for an adjustment to the ROE as a result of perceived differences in risk from that group attributable to approval of cost recovery for the CEF-EC program; if anything, it is clear that approval of this significant investment under these conditions (that is, under conditions consistent with those governing similar PSE&G investments) results in no impact on the Company's ROE, and the rate case WACC should apply to CEF-EC.

Mr. Kahal's updated analysis does not demonstrate that market conditions result in a lower cost of equity. In fact, his range of DCF results suggest a moderate increase in the

midpoint of the range of results. Therefore, Mr. Kahal's suggestion that the Company's current ROE should be reduced on the basis of his own analysis is false.

Q. Do you agree that the accelerated recovery mechanism that PSE&G's proposes is inherently less risky than PSE&G's base investment?

A. No, I do not. Capital tracker mechanisms are a response by regulatory commissions to correct for the recovery lag that is inherent in the traditional cost of service regulatory process. There is no reason that the implementation of such mechanisms, which are designed to create a reasonable opportunity for a company to earn its authorized ROE, should be assigned a return on capital that differs from the return that is authorized on the remainder of the company's rate base.

Q. Is it appropriate to re-consider PSE&G's return on equity in this proceeding?

A. No, it is not. The BPU has historically established an ROE through the base rate proceeding and has applied that ROE to significant infrastructure and other investment programs like Energy Strong II, GSMP II, and CEF-EE. Not only is Mr. Kahal incorrect about the current risk environment versus the environment in 2018, in addition, if Mr. Kahal's proposal to reconsider the ROE in this proceeding were adopted, it would shift the discussion of the ROE out of the base rate proceeding into each tracker case that is brought before the BPU. This suggests that a different ROE could be determined for a company's investments in each individual tracker case as well as the base rate case. It is important to recognize that credit rating agencies value the stability and predictability of returns. As

discussed in more detail later in my Rebuttal Testimony, Moody's recently noted its expectation ROEs would likely remain stable during this period of market uncertainty. Therefore, changes to the ROE, in particular of the magnitude suggested by Mr. Kahal and inconsistent with recent determinations in these types of cases before the New Jersey BPU, would likely be viewed negatively by rating agencies at this time.

III. RESPONSE TO RATE COUNSEL WITNESS KAHAL'S RISK ASSESSMENT OF THE PROPOSED AMI INVESTMENT PROGRAM AND IIP TRACKER

Q. Please explain the precedent for applying the Company's currently-authorized rate base ROE of 9.60 percent to its proposed AMI investments.

A. In the Company's 2018 Gas System Modernization Program and Associated Cost Recovery Mechanism ("GSMP II") proceeding, all parties (including Rate Counsel) agreed to rely on the authorized ROE that was to be established in the 2018 rate case. Not only did all parties agree that this "tracker" would use the same ROE as the ROE from the Company's base rate case, but they agreed to this while the base rate case was ongoing, and the base rate ROE had not yet been set.

The investments made in the GSMP II programs are not different from the investments now proposed in the AMI program. In both frameworks, the return is allowed to be recovered between rate cases. It is inconsistent and unreasonable for Mr. Kahal to suggest that incremental investments proposed in the AMI program would receive a lower ROE than the currently-authorized ROE, when the Company is requesting essentially the same regulatory recovery for these investments as it is receiving on investments under the

GSMP II and Energy Strong II programs. The trackers operate in the same way in both cases, and the tracker ROEs should logically be set the same way in both cases. Please also see the Rebuttal Testimony of Mr. Swetz for a further discussion on why it is inappropriate to reduce the ROE for IIP programs.

Q. What is Mr. Kahal's position with respect to the use of the BPU's IIP cost recovery mechanism for the AMI program?

A. Mr. Kahal does not support the use of a "single-issue cost recovery mechanism" for the AMI program.[3] He claims that the proposed IIP tracker lowers the Company's risk relative to the proxy group and relative to its normal operations, and he suggests that the proposed IIP tracker serves to circumvent the prudence review process. He then relies on those assumptions as the foundation for his recommendation of a low ROE for the AMI program.

Q. Do you agree with Mr. Kahal's characterization of the effect of the proposed IIP tracker on Company risk relative to the proxy group?

A. No, I do not agree. Mr. Kahal's risk assessment of the AMI program is incomplete, in that he does not consider the risk of implementing the program nor does he consider special recovery mechanisms that have also been implemented by the proxy group companies.

[3] Direct Testimony of Matthew I. Kahal, at 9.

Mr. Kahal mistakenly conflates absolute risk with relative risk. The return on equity for public utilities has traditionally been set with some consideration for the market return on a proxy group of risk comparable companies. In addition to reviewing the results of the traditional ROE estimation models for that comparable group, it is important to consider what type of risk-mitigating mechanisms had been implemented by the proxy group to determine whether or not the market data for the proxy companies reflects similar risk mitigation resulting from the AMI tracking mechanism. Mr. Kahal provides no such analysis.

The BPU sets the ROE for a utility based on data provided for a proxy group of risk-comparable companies. Therefore, the relevant question is not whether the Company has less risk in absolute terms (e.g., as a result of a tracking mechanism), but rather whether the Company has less risk *relative to the proxy group*. Schedule AEB-2 summarizes the tracking mechanisms that had been implemented by the proxy group in the 2018 base rate proceeding. Schedule AEB-3 updates the data provided as of the base rate proceeding for more current information for the proxy group companies. The data that is summarized in these exhibits demonstrates that the proxy group companies had implemented investment tracking mechanisms that are generally similar to what is being proposed by Public Service in the current proceeding at the time of the base rate proceeding, and that the proxy companies continue to rely on these mechanisms today. Therefore, if Public Service relies on the same type of tracking mechanisms that are already employed by the proxy

companies, then, Public Service's risk relative to the proxy companies is not reduced by the AMI investment recovery proposal.

Q. How prevalent are capital cost recovery mechanisms in the U.S?

A. Standard & Poor's published a report in November of 2019 to review which jurisdictions had adjustment mechanisms to reduce regulatory lag and provide greater revenue stability. Regarding capital cost recovery mechanisms, S&P found that over 55 percent of utilities across the U.S. have a tracking mechanism in place to recover costs associated with capital expenditures between rate cases.[4] Therefore, a majority of jurisdictions across the U.S. have some form of capital cost recovery mechanism in place for electric and natural gas utilities, and the majority of electric utilities have implemented these mechanisms. As a result, any risk mitigation that may be considered as resulting from the implementation of a capital tracker would already be included in the market data for these companies. Therefore, when relying on market data for a proxy group of companies, or the broader group of recently-authorized electric utility ROEs, it is important to recognize that the effects of capital trackers have been considered already in those determinations.

---

4 S&P Global Market Intelligence, "RRA Regulatory Focus: Adjustment Clauses – A State-by-State Overview", November 12, 2019, at 3.

Q. Do you agree with Mr. Kahal's characterization of the effect of the proposed IIP tracker on Company risk relative to its normal operations?

A. No, I do not agree. Mr. Kahal claims that the proposed IIP tracker is "far lower [risk] than conventional base rate recovery".[5] While the tracking mechanism is providing recovery of the investment between rate proceedings, there are also risks associated with the implementation of the significant capital program that are not addressed through the tracking mechanism. Therefore, in my opinion, it cannot be determined that there is necessarily less risk for the Company due to the implementation of the AMI tracker, because there is also incremental risk associated with the capital program.

Furthermore, the recovery mechanism that is proposed in this proceeding for the AMI investments is consistent with mechanism applied to several other PSE&G investments, all of which are currently authorized to earn an ROE equal to the ROE established in the base rate proceeding. It would be unexpected—and likely viewed negatively by equity and debt investors—for the AMI investments to be authorized a lower return than investments made in numerous programs that provide for recovery on the same terms proposed in this proceeding.

5 Direct Testimony of Matthew I. Kahal, at 8.

Q. Do you agree with Mr. Kahal's implication that the proposed IIP tracker circumvents the prudence process?

A. No, I do not agree. Mr. Kahal argues that the Company's proposed AMI program leaves little prudence disallowance risk exposure for the Company.[6] Mr. Kahal relies on this as the foundation for his recommendation of a low ROE for the AMI program.

Mr. Kahal's risk assessment of the AMI program appears to be premised on a faulty assumption that regulatory lag and prudence disallowances are necessary parts of the regulatory compact. His argument suggests that correction of the regulatory lag (via use of a tracking mechanism)—that can otherwise result when large capital programs cannot be recovered between rate proceedings—justifies a lower authorized ROE.

It is important to note that the AMI program is proposed by the Company under N.J.A.C 14:3-2A, which is the Infrastructure Investment Program (IPP). This statute provides for regulatory mechanisms that allow a utility to accelerate its investment in the construction, installation and rehabilitation of certain non-revenue producing utility plant and facilities that meet safety, reliability or resiliency standards. As stated in the N.J.A.C "[t]he Board shall require frequent and detailed reporting of expenditures during all phases of an Infrastructure Investment Program, as set forth in this subchapter, in order to ensure prudent investment and compliance with this subchapter".[7] Based on the stated purpose

6 *Id*., at 12 and 25.

7 N.J.A.C. 14:3-2A.1

and general provisions of the N.J.A.C, the IPP requires ongoing prudence review throughout the program and is intended to provide a rate recovery mechanism that supports the investment that is contemplated in the program. Therefore, Mr. Kahal's suggestion that it is necessary to review the investments in an IPP program in a general rate case run counter to the provisions of the N.J.A.C. that establishes the recovery mechanisms.

The *Hope* and *Bluefield* principles established that utilities were to be provided a reasonable opportunity to earn a return that is comparable with the return on other investments of similar risk. There is nothing in the principles established by the Supreme Court that suggest that regulatory lag should be inherent in the return for regulated utility investments. Therefore, correcting regulatory lag via an investment tracking mechanism does not create a windfall circumstance for the utilities that should be addressed through a reduced ROE. Rather, a tracking mechanism is implemented to provide a solution to regulatory lag, so that the utility is afforded a reasonable opportunity to earn its return when extensive capital programs are necessary. Failure to address the regulatory lag resulting from large capital programs erodes the utility's opportunity to earn its authorized return. Furthermore, as established in the N.J.A.C. "[t]he purpose of an Infrastructure Investment Program is to provide a rate recovery mechanism that encourages and supports necessary accelerated construction, installation, and rehabilitation of certain utility plants and

equipment."[8] Therefore, to the extent that the BPU determines that the AMI program satisfies the requirements of the N.J.A.C., the Code establishes that the mechanism should encourage and support the investments. A reduction in the ROE from what was established for other rate base investments in the base rate proceeding, as is proposed by Mr. Kahal, would not meet the standards established in the N.J.A.C.

Q. How important is the AMI program proposed by Public Service?

A. Deployment of Advanced Metering Infrastructure (aka "smart meters") is a critical path aspect of grid modernization. As of 2019, there were more than 98 million AMI meters installed in the United States—though New Jersey was home to fewer than 100,000 of them. [9]

AMI is necessary to achieve the important goals of grid decarbonization, integration of utility-scale distributed energy resources, and improved system reliability. Indeed, the BPU's "Energy Master Plan" issued in 2019 asserts that "AMI is a foundational component of a modernized electric distribution grid" and that "statewide AMI installation is a prerequisite of many additional clean energy objectives".[10] The BPU's bold vision of "100% clean energy by 2050" would be hindered by regulatory decisions that effectively disincentivize or delay the Company's AMI investment program.

---

[8] N.J.A.C. 14:3-2A.1.

[9] https://www.eei.org/issuesandpolicy/finance/wsb/Documents/2020_Wall_Street_Final_Slides_Web.pdf, p. 13

[10] 2019 New Jersey Energy Master Plan: Pathway to 2050 (Goal 5.3.1), at 184.

IV. CAPITAL MARKET CONDITIONS AND IMPLICATIONS FOR THE COST OF EQUITY

Q. Please summarize Mr. Kahal's position on capital market conditions and the implications for the cost of equity.

A. Rate Counsel witness Mr. Kahal provides a history of the actions of the Federal Reserve from the end of its Quantitative Easing program in 2015 to the most recent market events.[11] Mr. Kahal acknowledges that the COVID-19 pandemic created a dramatic change in market conditions in February and March 2020, including the market sell-off, spike in unemployment, and threats to the health of the financial system. Furthermore, Mr. Kahal recognizes the "sudden and dramatic" intervention of the Federal Reserve that was aimed at stabilizing credit and supporting financial markets. In addition, he acknowledges that the Federal Reserve went much further in this crisis than in the Great Recession of 2008/09 financial crisis.[12] Mr. Kahal concludes that:

> [t]he economic forces mentioned above that lead to lower interest rates also tend to exert downward pressure on the utility cost of equity. After all, many investors tend to view utility stocks and bonds as alternative investment vehicles for portfolio allocation purposes, and [in] that manner utility stocks and long-term bonds are related by market forces.[13]

---

11 Direct Testimony of Matthew I. Kahal, at 15-17.

12 *Id.*, at 16.

13 *Id.*, at 17.

Q. Do you agree with Mr. Kahal's conclusions on the effect of current market conditions on the cost of equity?

A. No, I do not agree. Mr. Kahal's conclusions are inconsistent with how utility stocks have performed in current market conditions. Furthermore, the assumptions used in his ROE estimation models also appear to be divorced from current market conditions. While Mr. Kahal acknowledges the dramatic market events that unfolded in the equity markets, his focus remains on how those conditions affect the cost of debt—not the cost of equity. Mr. Kahal recognizes that recent market conditions were extraordinary and that the response was extraordinary, even as compared with the financial market collapse and Great Recession of 2008/09. While all of the volatility and the crisis conditions described by Mr. Kahal present obvious risks to equity holders, Mr. Kahal recommends an ROE in this proceeding of only 8.80 percent, which is 20 basis points lower than the ROE he recommended in the Company's most recent base rate proceeding, in 2018. Furthermore, despite the sudden market turmoil that he describes, Mr. Kahal relies on a market risk premium in his CAPM analysis that is (inappropriately) consistent with the premium that he relied on in Public Services' base rate proceeding.[14] Mr. Kahal's failure to update his market risk premium assumption means that his overall analysis and recommendation are completely divorced from current market events.

[14] BPU Docket No. EO1810115, Schedule MIK-5 and BPU Docket Nos. GR18010029 and GR18010030, Schedule MIK-6.

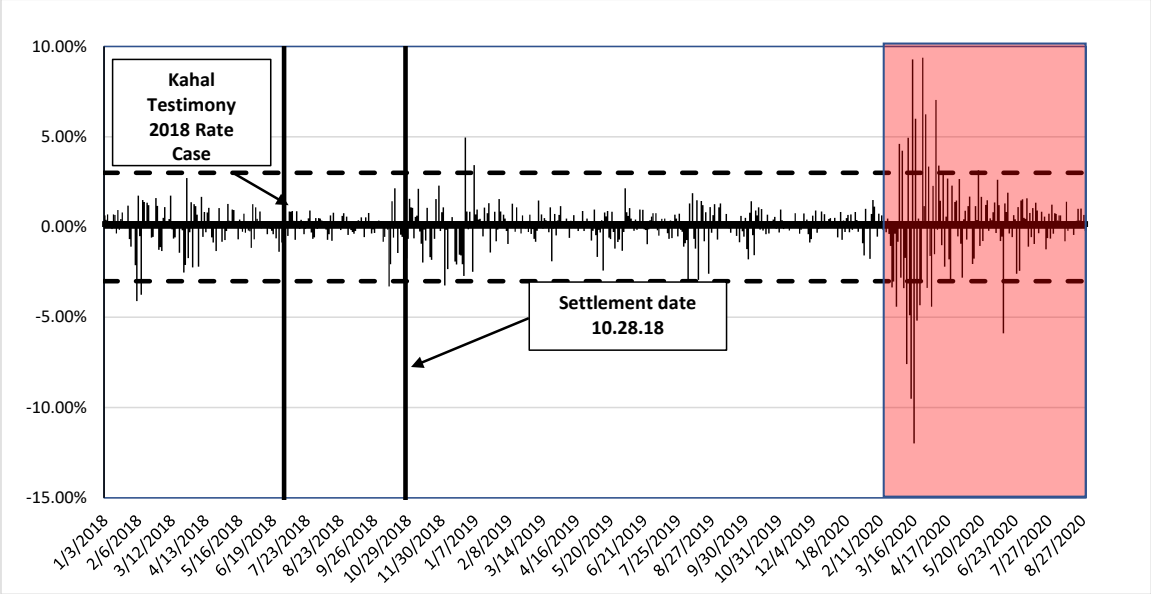
Q. Have market conditions changed since the time-period that was used to establish rates in Public Service's most recent basic rate case?

A. Yes, they have. Public Service reached a Settlement in its most recent basic rate case in September 2018 using data through July 31, 2018. The BPU approved the Settlement by order dated October 29, 2018. Since that time, there have been significant changes in overall market conditions and the risks to equity.

Q. Has Mr. Kahal adequately considered current market conditions?

A. No, he has not. Mr. Kahal relied on six months of data ending July 31, 2020 in his ROE estimation models, yet did not adequately address the conditions that occurred over that time period and how those conditions have affected the risk to equity. In 2020, market conditions have been extremely volatile, creating increased risk to investors in equities. There has been very significant volatility in both the prices of utility stocks and the yields on Treasury bonds that would affect the assumptions used in the ROE estimation models. For example, utility stock prices reached a high in mid-February followed by a significant decline in the overall market and utility stocks. As shown in Figure 1 below, the S&P 500 Index swung more than three percent in 16 of the 22 trading days in the month of March. Moreover, as shown in Figure 1, prices during recent market conditions are much more volatile than during the conditions prevailing at the time that the ROE models were developed for Public Service's 2018 base rate proceeding; this, again, demonstrates greater risk to equity.

Figure 1: S&P 500 Index – Daily Price Change – January 2018 - July 2020



Q. Please explain the importance of market volatility and the implications for the cost of equity.

A. Volatility in the equity market demonstrates heightened risk in the market. As shown in Figure 1 above, when the market experiences significant gains and losses from one day to the next, the risk to holding equities increases. I reviewed two other measures of volatility in financial markets: the CBOE Volatility Index ("VIX"), and the U.S. Treasury Note Volatility Index ("TYVIX"). The VIX measures investors' expectation of volatility in the S&P 500 over the next 30 days. The TYVIX, also published by CBOE, measures investors' expectation of volatility in the 10-year Treasury Bond over the next 30 days. The VIX and TYVIX recently reached levels not seen since the Great Recession of 2008/09. For example, the VIX was 82.69 on March 16, 2020. The VIX has not reached

80.00 since November of 2008; however, it is important to note that the highest level reached during the Great Recession of 2008/09 was 80.86.[15] Similarly, the TYVIX was 16.39 on March 19, 2020. Since at least January 2003, the TYVIX has never exceeded 15.00 including during the Great Recession of 2008/09.[16] These indicators show that the COVID-19 pandemic has caused an increase in the level of uncertainty and volatility in the market even greater than during the Great Recession of 2008/09. Furthermore, as shown in Figure 2 below, the VIX is currently at levels that far exceed the levels of the VIX at the time that Mr. Kahal and I developed the analyses that were used to inform the Settlement in the 2018 base rate proceeding.

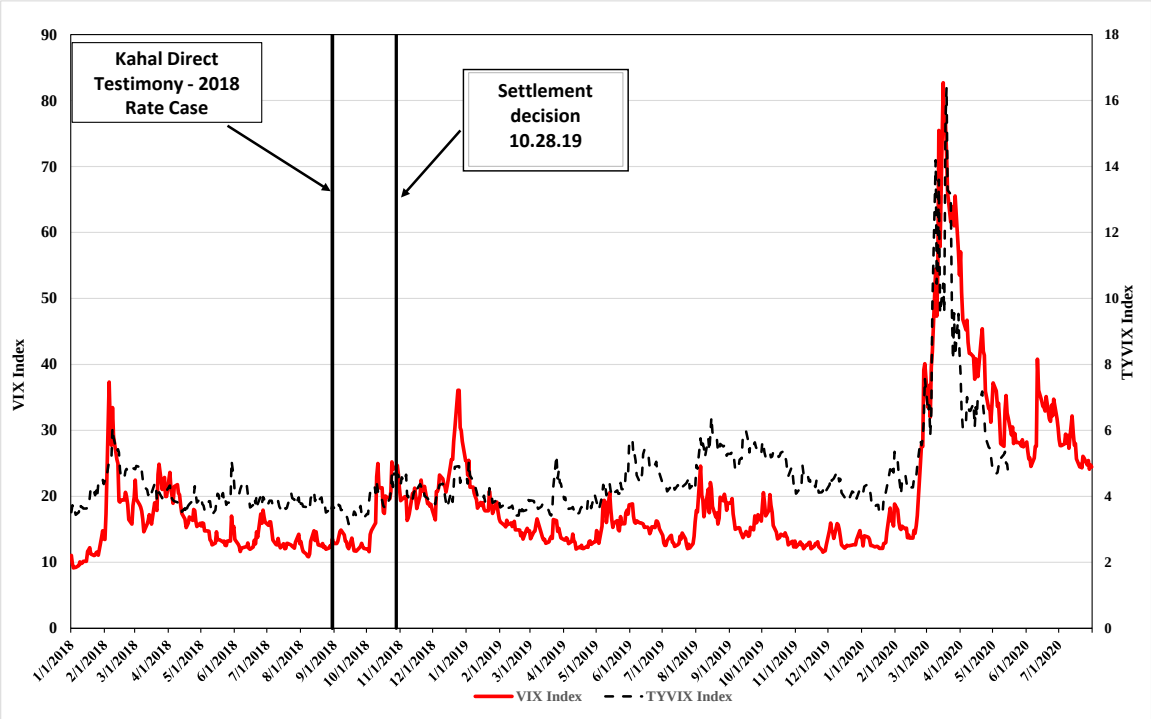
Finally, as shown in Figure 2, while the VIX has declined in May through July, this measure of volatility remains well above levels seen prior to the COVID-19 pandemic in January 2020. It is important to view the declines in the VIX in the context of the unprecedented response by the Federal Reserve and Congress. As discussed in more detail below, the Federal Reserve's corporate bond buying programs are providing liquidity to bond markets and therefore reducing some of the uncertainty that was driving the volatility seen in March. However, there is still much uncertainty regarding the near-term effect of the COVID-19 pandemic on the economy and the financial markets, which is why the VIX is still above its long-term average. Comparing the level of volatility in the market today

15 Source: Bloomberg Professional.

16 *Ibid.*

to that existing in 2018 demonstrates that the current market presents greater risk to equity, which would suggest that a decrease in Public Service's ROE for its AMI investments is not warranted.

Figure 2: CBOE VIX and TYVIX – January 1, 2018 – July 31, 2020[17]



Q. Please describe the magnitude of the intervention that was required by the Federal Reserve to support the financial system in March 2020.

A. In response to effects of the COVID-19 pandemic, the Federal Reserve met on March 15, 2020 and acknowledged that the spread of the COVID-19 pandemic posed

17 The CBOE did not renew the contract for the TYVIX, therefore the data for this index is not available after May 15, 2020.

increased risks to economic activity in the U.S. In response, the Federal Reserve reduced the federal funds rate by 100 basis points, resulting in a target range of 0.00 percent to 0.25 percent.[18] This was the second unscheduled meeting in March 2020, with the first occurring on March 3rd, when the Federal Reserve reduced the federal funds rate by 50 basis points. In addition to the reduction in the federal funds rate, the Federal Reserve also announced plans to increase its holdings of both Treasury and mortgage-backed securities.[19] On March 23, 2020, the Federal Reserve began expansive programs to support credit to large employers; the Primary Market Corporate Credit Facility ("PMCCF") to provide liquidity for new issuances of corporate bonds, and the Secondary Market Corporate Credit Facility ("SMCCF") to provide liquidity for outstanding corporate debt issuances. Further, the Federal Reserve supported the flow of credit to consumers and businesses through the Term Asset-Backed Securities Loan Facility ("TALF").[20]

In addition to the Federal Reserve, the U.S. Congress has also passed fiscal stimulus programs. On March 27, 2020, the Coronavirus Aid, Relief, and Economic Security ("CARES") Act was signed into law which is a large fiscal stimulus package aimed at also mitigating the economic effects of the coronavirus. While these expansive programs have

---

18 FOMC, Federal Reserve Board Press Release, March 15, 2020, at 1.

19 *Id.*, at 2.

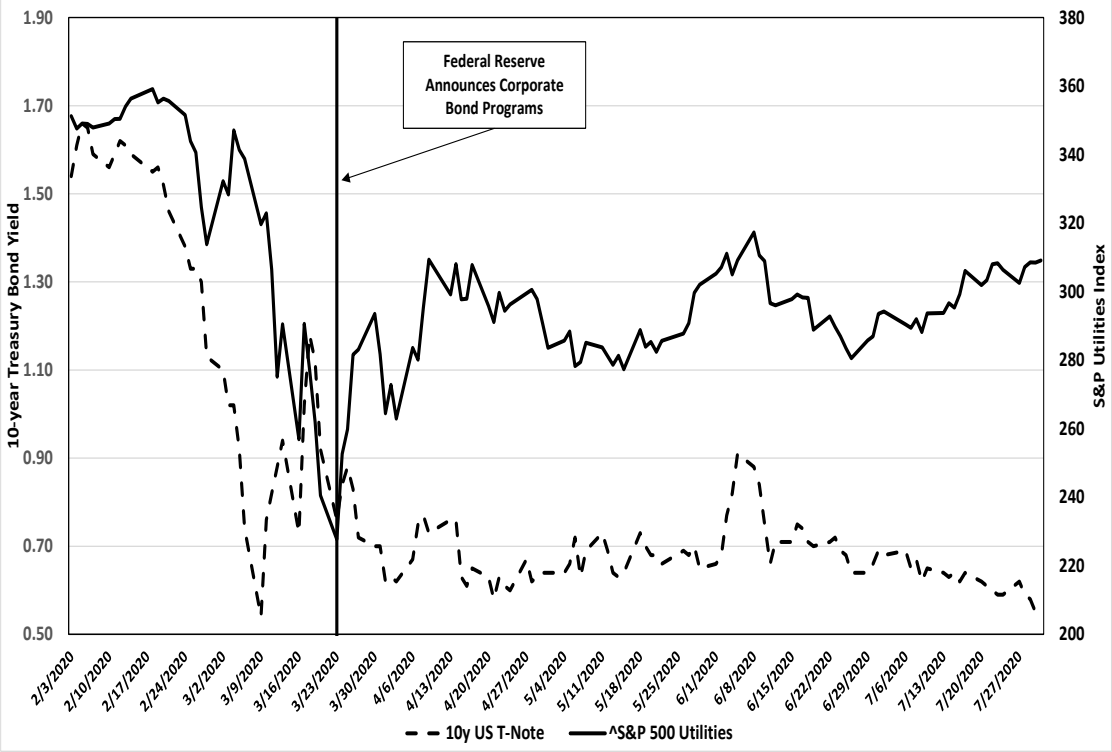
20 Federal Reserve Board Press Release, "Federal Reserve announces extensive new measures to support the economy", March 23, 2020.

provided for greater price stability, as shown in Figure 2 above, both the VIX and the TYVIX remained well above long-term historical normal levels.

Q. Do you agree with Mr. Kahal's interpretation of how the unprecedented intervention by the Federal Reserve has affected financial markets?

A. No, I do not agree. As discussed above, the Federal Reserve's expansive programs greatly increased the money supply which resulted in lower borrowing costs for corporate firms and thus continued access to the capital needed to offset the economic effects of the COVID-19 pandemic. As a result, interest rates on debt have remained low, and stability has been restored in the corporate bond market. For investors, this led to allocating more funds to equities. As shown in Figure 3 below, the yield on the 10-year Treasury Bond has been in range of 0.55 percent to 0.91 percent between March 23, 2020 and July 31, 2020. However, the S&P Utilities Index increased drastically following the Federal Reserve's announcement on March 23, 2020. Therefore, the polices of the Federal Reserve, while resulting in stability in the bond markets, have resulted in inflated equity prices as investors search for returns given the current low interest rate environment.

Figure 3: 10-year U.S. Treasury Bond Yield and S&P Utilities Index



Q. Is Mr. Kahal's expectation that utility stocks will act as safe haven investments correct in the current market conditions?

A. No, it is not correct. Several equity analysts have recognized that utility stock valuations are very high relative to historical levels even after the decline in share prices that occurred as a result of the economic effects of COVID-19. In a recent electric utilities industry report, Value Line noted the following:

> Utilities are usually seen as a safe haven when the markets are in turmoil. Most of these stocks have declined far less than the broader market averages, but have been much more volatile than their high Price Stability Indexes suggest. Even a Safety rank of 1 (Highest) does not necessarily mean that a sharp decline cannot occur.

> Additionally, there has been a wide variance in the performance of these equities. The stock of Xcel Energy has advanced modestly in price this year, but the stock of Edison International has fallen more than 20% in price. The average dividend yield of stocks in this industry has risen to 3.55% after having fallen below 3% before the market tumbled in late February. Because the broader market has declined far more than the Electric Utility Industry, the median yield of dividend-paying stocks in The Value Line Investment Survey is not considerably lower than the median of the equities in this group.[21]

Q. Did Mr. Kahal acknowledge the rating agency response to the pandemic's effect on the authorized ROEs for utilities?

A. No, he did not. Mr. Kahal's only references to rating agency reports are to Company ratings that predate the pandemic period.[22]

Q. How have rating agencies responded to the effect of current market conditions on regulated utilities?

A. In April 2020, Standard & Poor's ("S&P") downgraded its outlook on the entire North American utilities sector, indicating that 25 percent of the industry was previously on a negative outlook or CreditWatch with negative implications and that S&P expected that COVID-19 would create incremental pressure and that a recession would lead to an increasing number of downgrades and negative outlooks.[23] In May 2020, S&P also noted

---

21 Value Line Investment Survey, Electric Utility (West) Industry, April 24, 2020, at 2214.

22 Direct Testimony of Matthew I Kahal, at 29.

23 Standard & Poor's Ratings Direct, COVID-19: The Outlook for North American Regulated Utilities Turns Negative, April 2, 2020.

that many utilities already faced ratings pressure due to several factors including the adverse effects of tax reform of 2019 and historically high capital spending. S&P noted that, as a result of these types of factors, there is an unusually high number of negative outlooks for utilities.[24]

Q. What are the rating agencies' expectations with respect to utility ROEs during this pandemic period?

A. In April 2020, Moody's Investors Service noted that it expects regulators to be hesitant to reduce authorized ROEs in response to the COVID-19 pandemic-related decline in the yield on 30-year Treasury Bonds. Specifically, Moody's noted that regulators will be hesitant to significantly reduce allowed returns given the uncertain market environment.[25]

Q. What are your conclusions regarding the recent market volatility and its effect on the cost of equity since Public Service's 2018 base rate case Settlement?

A. Market conditions have changed significantly since the record closed in the Company's base rate proceeding in 2018. Furthermore, it is important to recognize that market conditions changed dramatically in a very short period of time. From mid-February to the end of March 2020, markets and utility stocks, in particular, went from all-time highs to significant market corrections across all sectors and heightened concerns about liquidity

---

24 Standard & Poor's Ratings Direct: North American Regulated Utilities Face Tough Financial Policy tradeoffs To Avoid Ratings Pressure Amid The COVID-19 Pandemic, May 11, 2020, p. 3.

25 Moody's Investors Service, "Regulated Electric and Gas Utilities – US: Continued decline in ROEs to heighten pressure on financial metrics," April 17, 2020, at 3. (Emphasis added)

for investment grade corporations. This demonstration of the overall risk to equity and how quickly and dramatically market conditions can change is important in the consideration of the cost of equity. These indicators suggest that current market conditions would require a higher equity return than at the time of the Settlement of Public Service's 2018 base rate proceeding. Based on this data, Mr. Kahal's proposal to reduce the ROE for the Company's AMI investments by 80 basis points from the currently-authorized ROE does not reflect the current market cost of equity and is inconsistent with the *Hope* and *Bluefield* principles.

V. NATIONAL AUTHORIZED ROE'S AS A BENCHMARK RANGE

Q. Are authorized returns in other jurisdictions a relevant benchmark that investors consider?

A. Yes, they are relevant. The regulatory decisions of other commissions provide a basic test of reasonableness and serve as a benchmark that investors consider when assessing an authorized ROE against the returns available from other regulated utilities with comparable risk. It is a fundamental regulatory principle that authorized ROEs must be comparable to other investments with commensurate risk. Mr. Kahal cites authorized returns in other jurisdictions as a relevant consideration in setting the ROE for Public Service in this proceeding.[26]

[26] *See* Direct Testimony of Matthew I. Kahal, at 13.

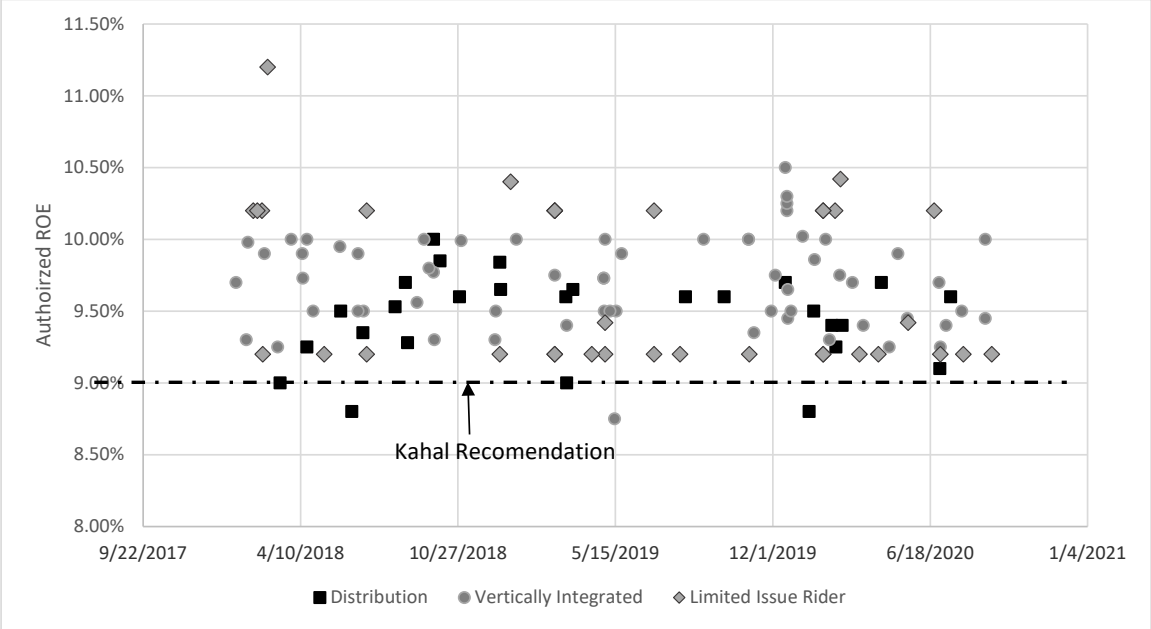
Q. Do you agree with Mr. Kahal's analysis of recently-authorized ROEs?

A. No, I do not agree. While Mr. Kahal considers the recently-authorized ROEs for transmission and distribution utilities, he is only considering the average authorized ROE without consideration of the individual cases for which those returns have been authorized.

Figure 4 below shows the distribution of authorized returns for transmission and distribution electric utility companies from January 2018 through August 2020. While Mr. Kahal references authorized ROEs in his testimony, he fails to consider the wide distribution of those results. As shown on Figure 4, Mr. Kahal's recommendation falls at the lowest end of the range of recently-authorized ROEs.[27]

[27] Excluding the authorized ROEs for the Illinois electric utilities, which are established using a formula rate that is a different regulatory construct than is relied on to develop the ROEs for the remainder of the state jurisdictional electric utilities. The chart also excludes Vermont tariff filings under a multi-year rate plan for Green Mountain Power, which were not base rate proceedings.

Figure 4: Authorized ROEs January 2010 – August 2020[28]



Q. Do you have additional concerns about Mr. Kahal's use of this entire data set?

A. Yes, I have concerns. By relying on only the average returns, without reviewing the data contained in the Regulatory Research Associates ("RRA" or "S&P Global") report that Mr. Kahal referenced, Mr. Kahal fails to remove data points that should not be included in a data set to be used for comparison with Public Service's ROE. For example, the data relied on by RRA includes in the averages for 2020 a recently-authorized ROE for Central Maine Power of 8.25 percent. A review of the facts in this case demonstrates that the market ROE in the case was 100 basis points higher than the ROE reported by RRA, with the

28 Source: SNL Financial. Rate case decisions from January 1, 2010 through August 30, 2020. The chart excludes Illinois formula ROEs.

difference (100 basis points) being a penalty that was imposed by the commission for management performance that was implemented for a twelve month period. Furthermore, the RRA data set includes certain Virginia and West Virginia "Limited Issue Rider" cases, which are typically excluded from a review of recently-authorized ROEs. Finally, the RRA data set includes the Illinois returns, which are established on a formulaic basis, which is very different from the approach used by the BPU; it is common practice to remove the Illinois observations from the comparison group, due to the differences in the methodology used to set the ROE. Figure 4 above eliminates the "Limited Issue Rider" cases, corrects the ROE for Central Maine Power to exclude the performance penalty, and excludes the Illinois observations.

Q. What are your conclusions regarding recently-authorized ROEs for electric transmission and distribution utilities?

A. The averages developed by RRA cannot be relied on for comparison purposes. As shown in Figure 4, recently-authorized ROEs have been greater than Mr. Kahal's recommendation for Public Service in this rate proceeding—with the exception of the ROEs established for Consolidated Edison in New York (a distribution utility) and Otter Tail Power (a vertically integrated utility).[29] Furthermore, Public Service's currently-

[29] The ROE in the Otter Tail case was the only issue that was not included in a settlement that was presented to the Commission. Therefore, it is important to recognize that this was the only issue on which the Commission made an independent determination in that proceeding.

authorized ROE of 9.60 percent is consistent with the majority of returns that have been recently authorized by the BPU.[30] This data demonstrates that recently-authorized ROE data does not support a return of only 8.80 percent as reasonable or appropriate for Public Service.

VI. RESPONSE TO RATE COUNSEL WITNESS KAHAL'S ROE MODEL ANALYSIS AND RESULTS

Q. Please summarize Mr. Kahal's testimony and recommendations.

A. Mr. Kahal suggests that the Company's proposal to rely on the ROE that was established in the base rate proceeding is inconsistent with current market conditions. Mr. Kahal suggests that his cost of equity study results in this case take into account current and recent favorable conditions of low capital costs in the financial markets. Mr. Kahal

30 *See*, *I/M/O the Petition of Atlantic City Electric Company for Approval of Amendments to its Tariff to Provide for an Increase in Rates and Charges for Electric Service Pursuant to N.J.S.A 48:2-21 and N.J.S.A. 48:2, 21.1., and for Other Appropriate Relief*, BPU Docket No. ER18080925, Decision and Order Adopting Initial Decision and Stipulation of Settlement at 2-3 (March 13, 2019); *I/M/O the Petition of Elizabethtown Gas Company for Approval of Increased Base Tariff Rates and Charges for Gas Service, Changes to Depreciation Rates and Other Tariff Revisions*, BPU Docket No. GR-19040486, Decision and Order Adopting Initial Decision and Stipulation at 4 (November 13, 2019); *I/M/O the Petition of New Jersey Natural Gas Company for Approval of an Increase in Gas Base Rates and for Changes in its Tariff for Gas Service Pursuant to N.J.S.A. 48:2-21 and 48:2-21.1, and for Changes to Depreciation Rates for Gas Property Pursuant to N.J.S.A. 48:2-18*, BPU Docket No. GR19030420, Decision and Order Adopting Initial Decision and Stipulation of Settlement at 6 (November 13, 2019); *I/M/O the Petition of South Jersey Gas Company for Approval of Increased Base Tariff Rates and Charges for Gas Service, Changes to Depreciation Rates and Other Tariff Revisions*, BPU Docket No. GR20030243, Decision and Order Adopting Initial Decision and Stipulation at 2 (September 23, 2020).

suggests that the current market conditions support a reduction in Public Service's ROE of 0.80 percent, from 9.60 percent to 8.80 percent.[31]

In the current case, Mr. Kahal develops a Constant Growth DCF analysis using the proxy groups that were established in the 2018 rate proceeding in my testimony and in Mr. Kahal's testimony. Using these proxy groups, he presents a range of equity returns from 8.50 percent to 9.00 percent and recommends an ROE at the approximate midpoint of his range: 8.80 percent.[32] The upper end of Mr. Kahal's range (i.e., 9.00 percent) is based on his Constant Growth DCF analysis using an estimated growth rate of 5.50 percent,[33] and the lower end (i.e., 8.50 percent) based on an estimated growth rate of 5.00 percent.[34]

Mr. Kahal also develops a range of equity return estimates using the CAPM. The CAPM is specified using a six-month average yield on the long-term treasury bond of 1.50 percent and a range of market risk premiums from 5.00 to 9.00 percent. (Notably, his selected market risk premium range is sourced from a vintage corporate finance textbook, rather than based on analysis of current market behavior.) His CAPM results range from 5.70 percent to 9.10 percent.[35]

---

31 Direct Testimony of Matthew I. Kahal, at 10.

32 Direct Testimony of Matthew I. Kahal, at 8. *See* also Schedule MIK-4, at 1.

33 *Id.*, at 40-41.

34 Schedule MIK-4, at 1.

35 Schedule MIK-5, at 1.

All of the results produced by Mr. Kahal's financial models fall well below the average authorized ROEs for electric utilities in 2018 through 2020, the period over which he reviews recently-authorized ROEs. Furthermore, the majority of Mr. Kahal's results are lower than the lowest authorized ROE for an electric utility during that period.

Q. How have Mr. Kahal's analytical results changed between his testimony in the 2018 proceeding and his testimony in the current proceeding?

A. Mr. Kahal's analytical results and recommended ROE have not changed meaningfully since his testimony in the Company's last rate case, in 2018. As shown in Figure 5 below, in the last rate case, Mr. Kahal's range of results was 8.10 to 9.10 percent. Within that range, Mr. Kahal selected the 90th percentile figure for his recommended ROE: 9.00 percent. Now, in the current proceeding, the low end of Mr. Kahal's range (8.50 percent) is 40 basis points higher than in 2018; and the high end of Mr. Kahal's range (9.00 percent) is 10 basis points lower than in 2018. Within this new range, Mr. Kahal has selected the 60th percentile figure for his recommended ROE: 8.80 percent. (Mr. Kahal refers to his 8.80 percent figure as the "midpoint",[36] though it represents the 60th percentile rather than the precise 50th percentile midpoint.)

[36] Direct Testimony of Matthew I. Kahal, at 8.

Figure 5: Summary of Rate Counsel Witness Mr. Kahal's
ROE Recommendations in the Current and Prior Proceedings

	Range of Results Considered	**Recommendation**
2018 rate base proceeding	8.10 - 9.10 % (Midpoint = 8.60%)	9.00 % (90th percentile of range)
Current proceeding	8.50 - 9.00 % (Midpoint = 8.75%)	8.80 % (60th percentile of range)

In this case, where the change in Mr. Kahal's recommendation is based on how he positions the recommendation within the range, the absolute value of this change is not a meaningful indicator of the change in the market cost of equity. Moreover, the midpoint of Mr. Kahal's results range has in fact shifted slightly upward (from 8.60 to 8.75 percent), even though his recommended ROE has shifted slightly downward.

Furthermore, had Mr. Kahal exercised his judgement in selecting an ROE from his current range of results in the same manner that he did in the 2018 rate case, the difference would in his final results would be further narrowed. If he were to select the 90th percentile value from his current range of results (to be consistent with having chosen the 90th percentile value from his range of results in 2018), he would now be recommending an ROE of 8.95 percent rather than 8.80 percent. Thus, 15 basis points of the 20 basis point difference (or 75 percent of the difference) between Mr. Kahal's 2018 and current

recommended ROE arises solely from his post hoc judgment and not directly from his model output.

Q. Should any decisions in this proceeding be based on the difference between Mr. Kahal's model results in the 2018 base rate proceeding and his updated results in the current proceeding?

A. No, they should not. Mr. Kahal's analyses presented in his Direct Testimony in this case do not demonstrate any meaningful change in the Company's cost of equity from his analyses he presented in the 2018 rate case. Indeed, Mr. Kahal's recommendation in this proceeding is only 20 basis points lower than his recommendation in the 2018 base rate proceeding, and (as I explained above) most of that difference is attributable solely to Mr. Kahal's arbitrary choice about where within the range of his results his recommended ROE should fall.

Despite that fact, Mr. Kahal suggests that a difference in market conditions supports a 0.80 percent reduction in the ROE.[37] However, Mr. Kahal's recommendation of 9.00 percent in the 2018 base rate proceeding differed significantly from the ROE of 9.60 percent that was ultimately agreed to by Rate Counsel and other parties in that case. While it cannot be determined by Mr. Kahal or myself exactly what the factors were that resulted in an agreed-upon return of 9.60 percent in that 2018 proceeding, it is necessary to

37 *Id.*, at 10.

recognize that the ROE was not agreed to by only considering the results of Mr. Kahal's Constant Growth DCF model.

Therefore, it is simply not logical for Mr. Kahal to compare his current DCF results to the settled ROE from the prior rate case, or to interpret any difference between them as related to changes in market conditions. It is similarly illogical for Mr. Kahal to suggest that, when his current models produce returns at about the same level as they did in the 2018 rate case, the ROE for Public Service should nonetheless be significantly decreased in this proceeding.

Q. Do you agree with Mr. Kahal's view that the currently-authorized ROE of 9.60 percent does not reflect the Company's current cost of equity?

A. No, I do not agree. As part of his argument in favor of a reduction in the Company's currently-authorized ROE of 9.60 percent, Mr. Kahal states that he does not believe 9.60 percent to be the Company's going-forward cost of equity.[38] However, as shown in Figure 5 above, Mr. Kahal's own cost of equity study filed in the current proceeding indicates a slight upward shift in the Company's cost of equity (as measured by the midpoint of the range of DCF results Mr. Kahal presents), compared to 2018. Moreover, as I explain in detail in Section IV of this Rebuttal Testimony, market risk has increased substantially since the time in 2018 when the 9.60 percent ROE was authorized, following a full review of arguments as to the Company's cost of equity.

38 *Id*., at 26.

Finally, the current proceeding is not the appropriate venue to re-open a full review of the Company's cost of equity. A capital tracker case is not intended to serve as a base rate case. If a utility's cost of equity were to be re-argued in every proceeding outside of the base rate case and, accordingly, a separate authorized ROE set in each of those proceedings, subject to expert testimony on DCF, CAPM and risk premium models, among other technical subjects, that would not only be burdensome from an administrative and accounting perspective, but it could produce irrational instability in the returns across comparable risk investments. In such a scenario, the return on an investment would be a function simply of which particular tracker the investment is recovered under, or whether the investment has been included in base rates. Such instability may be viewed negatively by investors, making capital attraction more difficult or costly for PSE&G on a going-forward basis.

A. Proxy Group Composition

Q. What is the composition of Mr. Kahal's proxy group?

A. Mr. Kahal does not screen a proxy group using current market data. Instead, Mr. Kahal uses the same proxy group of combination electric and gas companies that I used in my 2018 Direct Testimony, except that he excludes CenterPoint Energy due to its recent dividend cut. Mr. Kahal also relies on a second proxy group that is the same as his first,

except it includes Duke Energy and Alliant Energy because they are both combination electric and gas utilities that Mr. Kahal believes are risk-comparable to Public Service.[39]

Q. Do you agree with Mr. Kahal's proxy group?

A. I believe it is appropriate to screen a proxy group using current market data, rather than relying on a group that was developed using the composition of the companies as of more than two years ago. Furthermore, as discussed in my Rebuttal Testimony in the 2018 base rate case, Alliant Energy and Duke Energy did not meet my screening criteria for the amount of gas operations. For the purposes of comparing market conditions today to market conditions in 2018, it is reasonable to review the same proxy groups that were relied upon in that base rate case.

Q. Do you agree with Mr. Kahal's assertion that the Company faces less risk than the proxy group due to not owning generation assets?

A. No, I do not agree. In his testimony, Mr. Kahal repeatedly asserts that Public Service faces less risk than the proxy group, on the basis that PSE&G does not own generation assets.[40] Mr. Kahal uses this assumption to support his argument in favor of a low ROE. However, Mr. Kahal's assumption is not supported by the data in this case. In

39 *Id*., at 35-36.

40 *Id*., at 10, 12-13, and 28.

fact, observed equity returns for the proxy group companies do not clearly demonstrate a difference in risk on the basis of vertical integration or lack thereof.

Q. Can you provide some examples that undermine Mr. Kahal's assumption?

A. Yes, I can. As shown in Schedule AEB-1, the DCF results that result from Mr. Kahal's updated assumptions for both Avangrid and Eversource are above the mean DCF results for the proxy group, even though these companies do not own generation assets. Given the axiom that market returns reflect investor perception of risk, one cannot conclude that the Company's lack of generation assets is causing investors to perceive it as lower risk at this time. Therefore, the Company's lack of generation assets does not currently support an argument for a lower ROE.

B. DCF Analysis

Q. Please summarize Mr. Kahal's DCF analysis.

A. Mr. Kahal uses a Constant Growth DCF model (one using analyst growth rates and another using sustainable growth). Mr. Kahal concludes that his DCF study supports an ROE within a range from 8.50 percent to 9.00 percent, depending on the growth rate that he has selected.[41] From within that range, Mr. Kahal recommends an ROE of 8.80 percent,

41 *Id*., at 40-41.

which is lower than the vast majority of authorized ROEs for electric utility companies in the last 30 years.[42]

Q. Have Mr. Kahal's DCF results changed significantly since the 2018 rate case?

A. No, they have not. As discussed previously in this section, Mr. Kahal's recommended ROE has only changed by 20 basis points, and the majority of that change is due to his choice of where to select the ROE from within his range of results.

Q. Does Mr. Kahal present DCF results for each individual company in his proxy group?

A. No, Mr. Kahal does not provide DCF results for each individual company in his proxy group. Instead, he derives an average growth rate and an average dividend yield for his proxy group to develop a single DCF result for each proxy group.[43] As shown in Schedule AEB-1, if Mr. Kahal had developed individual DCF results for each company in his proxy group, and used earnings per share growth rates, it would be readily apparent that some of the results are too low to be considered reasonable estimates of the cost of equity. For example, the mean return estimate for Consolidated Edison is 6.77 percent. This is significantly below any authorized ROE for any regulated utility in any state or federal jurisdiction.

---

42 Source: SNL Financial.

43 Schedule MIK-4, at 2-5.

Q. What are your concerns with the dividend yield that Mr. Kahal has used in his Constant Growth DCF analyses?

A. I have two concerns with Mr. Kahal's dividend yield calculation. First, his dividend yield is calculated by dividing the current annualized dividend for each company by the closing share price on the last day of each month from January through June 2020. Second, Mr. Kahal's adjusted dividend yield is not consistent with the methodology that the BPU has relied on in prior cases.

Q. Please elaborate on your concern regarding the method Mr. Kahal has used to compute the dividend yield in the DCF analysis.

A. Rather than using an average daily share price for each company in his proxy group to compute dividend yield or using monthly high and low share prices, Mr. Kahal has chosen to use closing share prices on the last day of the month for each of the six months in his DCF study period. He then averages the dividend yields for each month to arrive at his unadjusted dividend yield of 3.36 percent.[44] As shown in Figure 1 in Section IV of this Rebuttal Testimony, over the time period relied upon by Mr. Kahal, the market has been very volatile. By using the month-end closing share price, rather than the average of prices over time, Mr. Kahal's analysis may be biased.

[44] Schedule MIK-4, at 1.

Q. Please explain your concern regarding how Mr. Kahal adjusted the dividend yield for future growth in dividends.

A. Mr. Kahal adjusted the dividend yield to account for future growth in dividends by multiplying the average dividend yield for the proxy group by 0.5 times the average growth rate for the proxy group. The BPU has historically adjusted the dividend yield by applying a full year growth rate to the dividend yield.[45] As shown in Schedule AEB-1, if Mr. Kahal followed this precedent, his adjusted DCF results would have been approximately 9 basis points higher.

Q. What growth rates has Mr. Kahal relied on his Constant Growth DCF analysis?

A. As he did in his testimony in PSE&G's 2018 base rate proceeding, Mr. Kahal summarizes forecast earnings per share growth rates from industry analysts as one source of growth rates, and "sustainable growth" calculated using Value Line data as well as Value Line's dividend, book value and earnings retention growth rates.[46] Based on this summary of growth rates, Mr. Kahal selects, in this case, growth rates of 5.00 percent and 5.50 percent to be used in the DCF model.[47]

---

45 *See* the Initial Decision of the State of New Jersey Office of Administrative Law, In the Matter of the Petition of Suez Water Arlington Hills, Inc. for Approval of an Increase in Rates for Wastewater Service and Other Tariff Charges, OAL DKT. No. PUC 09261-15, p. 8.

46 Schedule MIK-4, at 2-5.

47 Direct Testimony of Matthew I. Kahal, at 40.

Q. What are your conclusions about Mr. Kahal's growth rate estimates?

A. Comparing the growth rates that Mr. Kahal selected in the current case with the growth rates that he relied on in the 2018 rate case does not suggest a substantial shift in the expected growth of the proxy group over time. As shown in Schedule MIK-5 to Mr. Kahal's testimony in the 2018 rate case, the growth rate range that he selected from the data sources that he relied on at that time were from 4.50 percent to 5.50 percent.[48] Considering that Mr. Kahal is selecting a growth rate estimate—rather than relying exclusively on the data that is developed—this change in growth rates cannot be considered meaningful. However, it is notable that based on the range established in the 2018 case and today, it appears that Mr. Kahal is expecting stronger growth for the proxy group today than in the 2018 base rate proceeding.

Q. If reasonable adjustments are made to Mr. Kahal's DCF analysis, does the model produce reliable ROE estimates under current market conditions?

A. No, it does not. As I discussed in the 2018 base rate case, even with reasonable adjustments, DCF models are not producing reasonable or reliable estimates of the cost of equity at this time, and federal and state regulatory agencies around the country have recognized that fact, and are regularly relying on a broader range of financial models and evidence. The results of DCF models are being distorted by the low interest rate environment. It is not appropriate to base the authorized ROE for Public Service in this

48 BPU Docket Nos. ER18010029 and GR18010030, p. 39.

proceeding on the results of a Constant Growth DCF model without consideration of how those results are affected by current market conditions and whether the results are corroborated by other models, such as a forward-looking CAPM analysis and a Bond Yield Plus Risk Premium model.

Q. What is your conclusion regarding Mr. Kahal's Constant Growth DCF analysis?

A. My primary conclusion is that Mr. Kahal's use of a Constant Growth DCF analysis in this case understates the Company's cost of equity, similar to the circumstances in the 2018 rate case. As shown previously in Figure 4 (in Section V of this testimony), Mr. Kahal's recommended ROE of 8.80 percent is at the lowest end of the range of ROEs recently authorized in other state jurisdictional proceedings. Consequently, Mr. Kahal's recommended ROE of 8.80 percent is not just and reasonable; and, moreover, Mr. Kahal's recommended ROE does not meet the comparable return standard of *Hope* and *Bluefield*, which requires that the authorized return for Public Service be comparable to returns available to investors in companies with commensurate risk.

In contrast, a review of recently-authorized ROEs demonstrates that Public Service's currently-authorized ROE of 9.60 percent is in fact slightly below the mean of what has been recently authorized to electric utilities by other state jurisdictions.

C. CAPM

Q. Please summarize Mr. Kahal's CAPM analysis.

A. Mr. Kahal develops his CAPM analysis using current yields on 30-year Treasury bonds as the risk free rate, Beta coefficients reported by Value Line, and a market risk premium of 5.00 to 8.00 percent derived from a finance textbook. Mr. Kahal's CAPM analyses produce return estimates of 5.70 to 8.20 percent, with an approximate midpoint of 7.00 percent.[49]

Q. Please comment on the results of Mr. Kahal's CAPM analysis.

A. Mr. Kahal's CAPM results of 5.70 to 8.20 percent are entirely inconsistent with the returns required by equity investors for companies with commensurate risk, and are 140 to 390 basis points below the Company's currently-authorized ROE of 9.60 percent. Furthermore, even the high end of Mr. Kahal's CAPM results range has never been observed as an authorized ROE for any electric or gas utility in at least the past 35 years.

Q. Does Mr. Kahal place any emphasis on the results of his CAPM analysis?

A. No, he does not. Mr. Kahal states that he has not relied on this approach, due to the difficulty in measuring the market risk premium and his view that the DCF is a more reliable methodology for relatively stable utility companies.[50]

---

49 Direct Testimony of Matthew I. Kahal, at 46.

50 *Id.*, at 46-47.

Q. Have you compared Mr. Kahal's current CAPM analysis to the analysis that he prepared in the 2018 rate case proceeding?

A. Yes, I have. While Mr. Kahal does not rely on his CAPM because of his own concerns about the measurement of the risk premium, I compared the utility Betas used in his analysis in the 2018 rate case to the Betas that he has relied on in this proceeding. As noted by Mr. Kahal, the average Beta that he relied on in his CAPM in the 2018 rate case was 0.63, whereas he is currently relying on a Beta of 0.84 for the same proxy companies.[51] In his discussion of Beta, Mr. Kahal summarizes what can be implied by Beta:

> firm-specific risk measure which is computed as the movements in a company's stock price (or market return) relative to contemporaneous movements in the broadly defined market (e.g., the S&P 500 or the New York Stock Exchange Composite). This measures the investment risk that cannot be reduced or eliminated through asset diversification (i.e., holding a broad portfolio of assets). The overall market, by definition, has a beta of 1.0, and a company with a lower than average investment risk (e.g., a utility company) would have a beta below 1.0.

Comparing the "firm-specific" risk that existed in the market for his proxy group in 2018 (i.e., a Beta of 0.63) to the firm-specific risk for that same proxy group in the current market environment (i.e., a Beta of 0.84), shows that there is greater risk in the current market environment than in the 2018 rate case.

---

[51] BPU Docket Nos. GR1810029 and GR18010030, Schedule MIK-6, p. 1. *See* also Direct Testimony of Matthew I. Kahal, at 45.

Q. What do you conclude from that analysis?

A. The increase in Beta documented by Mr. Kahal indicates that there is *higher* risk for the companies in the proxy group in the current market environment, compared to when the group was relied upon in the 2018 base rate proceeding. Therefore, Mr. Kahal's recommendation of a *lower* ROE than what he recommended in the 2018 base rate proceeding—and a much lower ROE than what was ultimately agreed to by the parties at that time—is entirely inconsistent with the direction of changes in market conditions since that time, as evidenced by utility Betas.

VII. SUMMARY AND RECOMMENDATION

Q. Please summarize your conclusions and recommendation.

A. For the reasons discussed in this Rebuttal Testimony, I recommend that the ROE in this proceeding be consistent with the ROE established in the 2018 base rate proceeding. There is no evidence that has been presented by Mr. Kahal in this proceeding that suggests there is any basis to deviate from that precedent. The results of Mr. Kahal's DCF model (the sole basis for his determination of the appropriate cost of equity for Public Service) are extensively influenced by his judgement. That being the case, comparing his analysis in this proceeding to that which he prepared in the 2018 base rate proceeding demonstrates that the midpoint of his results has actually *increased*, which is inconsistent with his recommendation that the ROE for Public Service should *decrease* to 8.80 percent. In fact,

recently-authorized ROEs, both in New Jersey and nationwide, demonstrate that Mr, Kahal's recommendation is, at best, a low-end outlier—not the mainstream investor-expected return.

Recent market conditions have been extremely volatile and have resulted in greater risk to holding utility equity than in 2018 when the base rate case was settled. S&P has downgraded its outlook on the industry as a whole. Moody's is expecting regulators not to reduce ROEs in this uncertain time. Even if Mr. Kahal's evidence had demonstrated a lower cost of equity, which it does not, the concerns expressed by the rating agencies would suggest that this is not the time to reduce the ROE for a company.

Additionally, I disagree with Mr. Kahal's assertion that the proposed AMI investment program poses a lower risk which should be reflected in the authorized ROE. First, the program by itself increases the risk of the Company, absent any recovery mechanism. The use of such a mechanism is consistent with recovery mechanisms implemented by the proxy group companies. Therefore, on a relative basis (which is how the ROE is considered), Mr. Kahal's assertion is false. Furthermore, Public Service's GSMP II and Energy Strong II cases (which provides the same recovery as is proposed for the AMI investments) earn an ROE that is consistent with the ROE established in the base rate proceeding. Mr. Kahal has not made any demonstration that there is lower risk for the AMI investments than for the GSMP II and Energy Strong II investments.

Finally, there are policy implications for the BPU associated with setting the ROE in the context of a capital tracker. Capital trackers have been established to serve as the solution to regulatory lag—not to serve as single-issue rate cases. If a separate ROE were to be set in each individual proceeding outside of the base rate case, that would produce irrational instability in the returns across comparable risk investments; in such a scenario, the return on an investment would be a function simply of which tracker the investment is recovered under, or whether the investment has been included in base rates. Such instability may be viewed negatively by investors, making capital attraction more difficult or costly for utilities on a going-forward basis.

Q. Does this conclude your Rebuttal Testimony?

A. Yes, it does.

ANN E. BULKLEY
Senior Vice President

Ms. Bulkley has more than two decades of management and economic consulting experience in the energy industry. Ms. Bulkley has extensive state and federal regulatory experience on both electric and natural gas issues including rate of return, cost of equity and capital structure issues. Ms. Bulkley has provided expert testimony on the cost of capital in more than 30 regulatory proceedings before regulatory commissions in Arizona, Arkansas, Colorado, Connecticut, Kansas, Massachusetts, Michigan, Minnesota, Missouri, New Jersey, New Mexico, New York, North Dakota, Oklahoma, Pennsylvania, Texas, South Dakota, West Virginia, and the Federal Energy Regulatory Commission. In addition, Ms. Bulkley has prepared and provided supporting analysis for at least forty Federal and State regulatory proceedings. In addition, Ms. Bulkley has worked on acquisition teams with investors seeking to acquire utility assets, providing valuation services including an understanding of regulation, market expected returns, and the assessment of utility risk factors. Ms. Bulkley has assisted clients with valuations of public utility and industrial properties for ratemaking, purchase and sale considerations, ad valorem tax assessments, and accounting and financial purposes. In addition, Ms. Bulkley has experience in the areas of contract and business unit valuation, strategic alliances, market restructuring and regulatory and litigation support. Prior to joining Concentric, Ms. Bulkley held senior expertise-based consulting positions at several firms, including Reed Consulting Group and Navigant Consulting, Inc. where she specialized in valuation. Ms. Bulkley holds an M.A. in economics from Boston University and a B.A. in economics and finance from Simmons College. Ms. Bulkley is a Certified General Appraiser licensed in the Commonwealth of Massachusetts and the State of New Hampshire.

REPRESENTATIVE PROJECT EXPERIENCE

Regulatory Analysis and Ratemaking

Ms. Bulkley has provided a range of advisory services relating to regulatory policy analysis and many aspects of utility ratemaking. Specific services have included: cost of capital and return on equity testimony, cost of service and rate design analysis and testimony, development of ratemaking strategies; development of merchant function exit strategies; analysis and program development to address residual energy supply and/or provider of last resort obligations; stranded costs assessment and recovery; performance-based ratemaking analysis and design; and many aspects of traditional utility ratemaking (e.g., rate design, rate base valuation).

Cost of Capital

Ms. Bulkley has provided expert testimony on the cost of capital in more than 30 regulatory proceedings before regulatory commissions in Arizona, Arkansas, Colorado, Connecticut, Kansas, Massachusetts, Michigan, Minnesota, Missouri, New Jersey, New Mexico, New York, North Dakota, Oklahoma, Pennsylvania, Texas, South Dakota, West Virginia, and the Federal Energy Regulatory Commission. In addition, Ms. Bulkley has prepared and provided supporting analysis for at least forty Federal and State regulatory proceedings in which she did not testify.

Valuation

Ms. Bulkley has provided valuation services to utility clients, unregulated generators and private equity clients for a variety of purposes including ratemaking, fair value, ad valorem tax, litigation and damages, and acquisition. Ms. Bulkley's appraisal practices are consistent with the national standards established by the Uniform Standards of Professional Appraisal Practice.

Representative projects/clients have included:

- Northern Indiana Fuel and Light: Provided expert testimony regarding the fair value of the company's natural gas distribution system assets. Valuation relied on cost approach.
- Kokomo Gas: Provided expert testimony regarding the fair value of the company's natural gas distribution system assets. Valuation relied on cost approach.
- Prepared fair value rate base analyses for Northern Indiana Public Service Company for several electric rate proceedings. Valuation approaches used in this project included income, cost and comparable sales approaches.
- Confidential Utility Client: Prepared valuation of fossil and nuclear generation assets for financing purposes for regulated utility client.
- Prepared a valuation of a portfolio of generation assets for a large energy utility to be used for strategic planning purposes. Valuation approach included an income approach, a real options analysis and a risk analysis.
- Assisted clients in the restructuring of NUG contracts through the valuation of the underlying assets. Performed analysis to determine the option value of a plant in a competitively priced electricity market following the settlement of the NUG contract.
- Prepared market valuations of several purchase power contracts for large electric utilities in the sale of purchase power contracts. Assignment included an assessment of the regional power market, analysis of the underlying purchase power contracts, a traditional discounted cash flow valuation approach, as well as a risk analysis. Analyzed bids from potential acquirers using income and risk analysis approached. Prepared an assessment of the credit issues and value at risk for the selling utility.
- Prepared appraisal of a portfolio of generating facilities for a large electric utility to be used for financing purposes.
- Prepared an appraisal of a fleet of fossil generating assets for a large electric utility to establish the value of assets transferred from utility property.
- Conducted due diligence on an electric transmission and distribution system as part of a buy-side due diligence team.
- Provided analytical support for and prepared appraisal reports of generation assets to be used in ad valorem tax disputes.
- Provided analytical support and prepared testimony regarding the valuation of electric distribution system assets in five communities in a condemnation proceeding.
- Valued purchase power agreements in the transfer of assets to a deregulated electric market.

Ratemaking

Ms. Bulkley has assisted several clients with analysis to support investor-owned and municipal utility clients in the preparation of rate cases. Sample engagements include:

- Assisted several investor-owned and municipal clients on cost allocation and rate design issues including the development of expert testimony supporting recommended rate alternatives.

Worked with Canadian regulatory staff to establish filing requirements for a rate review of a newly regulated electric utility. Analyzed and evaluated rate application. Attended hearings and conducted investigation of rate application for regulatory staff. Prepared, supported and defended recommendations for revenue requirements and rates for the company. Developed rates for gas utility for transportation program and ancillary services.

Strategic and Financial Advisory Services

Ms. Bulkley has assisted several clients across North America with analytically based strategic planning, due diligence and financial advisory services.

Representative projects include:

- Preparation of feasibility studies for bond issuances for municipal and district steam clients.
- Assisted in the development of a generation strategy for an electric utility. Analyzed various NERC regions to identify potential market entry points. Evaluated potential competitors and alliance partners. Assisted in the development of gas and electric price forecasts. Developed a framework for the implementation of a risk management program.
- Assisted clients in identifying potential joint venture opportunities and alliance partners. Contacted interviewed and evaluated potential alliance candidates based on company-established criteria for several LDCs and marketing companies. Worked with several LDCs and unregulated marketing companies to establish alliances to enter into the retail energy market. Prepared testimony in support of several merger cases and participated in the regulatory process to obtain approval for these mergers.
- Assisted clients in several buy-side due diligence efforts, providing regulatory insight and developing valuation recommendations for acquisitions of both electric and gas properties.

PROFESSIONAL HISTORY

Concentric Energy Advisors, Inc. (2002 – Present)
Senior Vice President
Vice President
Assistant Vice President
Project Manager

Navigant Consulting, Inc. (1995 – 2002)
Project Manager

Cahners Publishing Company (1995)
Economist

EDUCATION

Boston University
M.A., Economics, 1995

Simmons College
B.A., Economics and Finance, 1991

CERTIFICATIONS

Certified General Appraiser licensed in the Commonwealth of Massachusetts and the State of New Hampshire.

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Arizona Corporation Commission				
Arizona Public Service Company	10/19	Arizona Public Service Company	Docket No. E-01345A-19-0236	Return on Equity
Tucson Electric Power Company	04/19	Tucson Electric Power Company	Docket No. E-01933A-19-0028	Return on Equity
Tucson Electric Power Company	11/15	Tucson Electric Power Company	Docket No. E-01933A-15-0322	Return on Equity
UNS Electric	05/15	UNS Electric	Docket No. E-04204A-15-0142	Return on Equity
UNS Electric	12/12	UNS Electric	Docket No. E-04204A-12-0504	Return on Equity
Arkansas Public Service Commission				
Arkansas Oklahoma Gas Corporation	10/13	Arkansas Oklahoma Gas Corporation	Docket No. 13-078-U	Return on Equity
Colorado Public Utilities Commission				
Public Service Company of Colorado	02/20	Public Service Company of Colorado	20AL-0049G	Return on Equity
Public Service Company of Colorado	05/19	Public Service Company of Colorado	19AL-0268E	Return on Equity
Public Service Company of Colorado	01/19	Public Service Company of Colorado	19AL-0063ST	Return on Equity
Atmos Energy Corporation	05/15	Atmos Energy Corporation	Docket No. 15AL-0299G	Return on Equity
Atmos Energy Corporation	04/14	Atmos Energy Corporation	Docket No. 14AL-0300G	Return on Equity
Atmos Energy Corporation	05/13	Atmos Energy Corporation	Docket No. 13AL-0496G	Return on Equity
Connecticut Public Utilities Regulatory Authority				
Connecticut Natural Gas Corporation	06/18	Connecticut Natural Gas Corporation	Docket No. 18-05-16	Return on Equity
Yankee Gas Services Co. d/b/a Eversource Energy	06/18	Yankee Gas Services Co. d/b/a Eversource Energy	Docket No. 18-05-10	Return on Equity
The Southern Connecticut Gas Company	06/17	The Southern Connecticut Gas Company	Docket No. 17-05-42	Return on Equity
The United Illuminating Company	07/16	The United Illuminating Company	Docket No. 16-06-04	Return on Equity
Federal Energy Regulatory Commission				
Wisconsin Electric Power Company	08/20	Wisconsin Electric Power Company	Docket No. EL20-57-000	Return on Equity
Panhandle Eastern Pipe Line Company, LP	10/19	Panhandle Eastern Pipe Line Company, LP	Docket Nos. RP19-78-000 RP19-78-001	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Panhandle Eastern Pipe Line Company, LP	08/19	Panhandle Eastern Pipe Line Company, LP	Docket Nos. RP19-1523	Return on Equity
Sea Robin Pipeline Company LLC	11/18	Sea Robin Pipeline Company LLC	Docket# RP19-352-000	Return on Equity
Tallgrass Interstate Gas Transmission	10/15	Tallgrass Interstate Gas Transmission	RP16-137	Return on Equity
Idaho Public Utilities Commission				
PacifiCorp d/b/a Rocky Mountain Power	06/20	PacifiCorp d/b/a Rocky Mountain Power	PAC-E-20-03	Return on Equity
Indiana Utility Regulatory Commission				
Indiana and Michigan American Water Company	09/18	Indiana and Michigan American Water Company	IURC Cause No. 45142	Return on Equity
Northern Indiana Public Service Company	09/17	Northern Indiana Public Service Company	Cause No. 44988	Fair Value
Indianapolis Power and Light Company	12/16	Indianapolis Power and Light Company	Cause No.44893	Fair Value
Northern Indiana Public Service Company	10/15	Northern Indiana Public Service Company	Cause No. 44688	Fair Value
Indianapolis Power and Light Company	09/15	Indianapolis Power and Light Company	Cause No. 44576 Cause No. 44602	Fair Value
Kokomo Gas and Fuel Company	09/10	Kokomo Gas and Fuel Company	Cause No. 43942	Fair Value
Northern Indiana Fuel and Light Company, Inc.	09/10	Northern Indiana Fuel and Light Company, Inc.	Cause No. 43943	Fair Value
Iowa Department of Commerce Utilities Board				
Iowa-American Water Company	08/20	Iowa-American Water Company	Docket No. RPU-2020-0001	Return on Equity
Kansas Corporation Commission				
Atmos Energy Corporation	08/15	Atmos Energy Corporation	Docket No. 16-ATMG-079-RTS	Return on Equity
Kentucky Public Service Commission				
Kentucky American Water Company	11/18	Kentucky American Water Company	Docket No. 2018-00358	Return on Equity
Maine Public Utilities Commission				
Central Maine Power	10/18	Central Maine Power	Docket No. 2018-00194	Return on Equity
Maryland Public Service Commission				
Maryland American Water Company	06/18	Maryland American Water Company	Case No. 9487	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Massachusetts Appellate Tax Board				
Hopkinton LNG Corporation	03/20	Hopkinton LNG Corporation	Docket No.	Valuation of LNG Facility
FirstLight Hydro Generating Company	06/17	FirstLight Hydro Generating Company	Docket No. F-325471 Docket No. F-325472 Docket No. F-325473 Docket No. F-325474	Valuation of Electric Generation Assets
Massachusetts Department of Public Utilities				
Berkshire Gas Company	05/18	Berkshire Gas Company	DPU 18-40	Return on Equity
Unitil Corporation	01/04	Fitchburg Gas and Electric	DTE 03-52	Integrated Resource Plan; Gas Demand Forecast
Michigan Public Service Commission				
Wisconsin Electric Power Company	12/11	Wisconsin Electric Power Company	Case No. U-16830	Return on Equity
Michigan Tax Tribunal				
New Covert Generating Co., LLC.	03/18	The Township of New Covert Michigan	MTT Docket No. 000248TT and 16-001888-TT	Valuation of Electric Generation Assets
Covert Township	07/14	New Covert Generating Co., LLC.	Docket No. 399578	Valuation of Electric Generation Assets
Minnesota Public Utilities Commission				
Allete, Inc. d/b/a Minnesota Power	11/19	Allete, Inc. d/b/a Minnesota Power	E015/GR-19-442	Return on Equity
CenterPoint Energy Resources Corporation d/b/a CenterPoint Energy Minnesota Gas	10/19	CenterPoint Energy Resources Corporation d/b/a CenterPoint Energy Minnesota Gas	G-008/GR-19-524	Return on Equity
Great Plains Natural Gas Co.	09/19	Great Plains Natural Gas Co.	Docket No. G004/GR-19-511	Return on Equity
Minnesota Energy Resources Corporation	10/17	Minnesota Energy Resources Corporation	Docket No. G011/GR-17-563	Return on Equity
Missouri Public Service Commission				
Missouri American Water Company	06/17	Missouri American Water Company	Case No. WR-17-0285 Case No. SR-17-0286	Return on Equity
Montana Public Service Commission				
Montana-Dakota Utilities Co.	09/18	Montana-Dakota Utilities Co.	D2018.9.60	Return on Equity
New Hampshire - Board of Tax and Land Appeals				

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Public Service Company of New Hampshire d/b/a Eversource Energy	11/19 12/19	Public Service Company of New Hampshire d/b/a Eversource Energy	Master Docket No. 28873-14-15-16-17PT	Valuation of Utility Property and Generating Assets
New Hampshire Public Utilities Commission				
Public Service Company of New Hampshire	05/19	Public Service Company of New Hampshire	DE-19-057	Return on Equity
New Hampshire-Merrimack County Superior Court				
Northern New England Telephone Operations, LLC d/b/a FairPoint Communications, NNE	04/18	Northern New England Telephone Operations, LLC d/b/a FairPoint Communications, NNE	220-2012-CV-1100	Valuation of Utility Property
New Hampshire-Rockingham Superior Court				
Eversource Energy	05/18	Public Service Commission of New Hampshire	218-2016-CV-00899 218-2017-CV-00917	Valuation of Utility Property
New Jersey Board of Public Utilities				
New Jersey American Water Company, Inc.	12/19	New Jersey American Water Company, Inc.	WR19121516	Return on Equity
Public Service Electric and Gas Company	04/19	Public Service Electric and Gas Company	EO18060629 GO18060630	Return on Equity
Public Service Electric and Gas Company	02/18	Public Service Electric and Gas Company	GR17070776	Return on Equity
Public Service Electric and Gas Company	01/18	Public Service Electric and Gas Company	ER18010029 GR18010030	Return on Equity
New Mexico Public Regulation Commission				
Southwestern Public Service Company	07/19	Southwestern Public Service Company	19-00170-UT	Return on Equity
Southwestern Public Service Company	10/17	Southwestern Public Service Company	Case No. 17-00255-UT	Return on Equity
Southwestern Public Service Company	12/16	Southwestern Public Service Company	Case No. 16-00269-UT	Return on Equity
Southwestern Public Service Company	10/15	Southwestern Public Service Company	Case No. 15-00296-UT	Return on Equity
Southwestern Public Service Company	06/15	Southwestern Public Service Company	Case No. 15-00139-UT	Return on Equity
New York State Department of Public Service				
Niagara Mohawk Power Corporation	07/20	National Grid USA	Case No. 20-E-0380 20-G-0381	Return on Equity
Corning Natural Gas Corporation	02/20	Corning Natural Gas Corporation	Case No. 20-G-0101	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
New York State Electric and Gas Company Rochester Gas and Electric	05/19	New York State Electric and Gas Company Rochester Gas and Electric	19-E-0378 19-G-0379 19-E-0380 19-G-0381	Return on Equity
Brooklyn Union Gas Company d/b/a National Grid NY KeySpan Gas East Corporation d/b/a National Grid	04/19	Brooklyn Union Gas Company d/b/a National Grid NY KeySpan Gas East Corporation d/b/a National Grid	19-G-0309 19-G-0310	Return on Equity
Central Hudson Gas and Electric Corporation	07/17	Central Hudson Gas and Electric Corporation	Gas 17-G-0460 Electric 17-E-0459	Return on Equity
Niagara Mohawk Power Corporation	04/17	National Grid USA	Case No. 17-E-0238 17-G-0239	Return on Equity
Corning Natural Gas Corporation	06/16	Corning Natural Gas Corporation	Case No. 16-G-0369	Return on Equity
National Fuel Gas Company	04/16	National Fuel Gas Company	Case No. 16-G-0257	Return on Equity
KeySpan Energy Delivery	01/16	KeySpan Energy Delivery	Case No. 15-G-0058 Case No. 15-G-0059	Return on Equity
New York State Electric and Gas Company Rochester Gas and Electric	05/15	New York State Electric and Gas Company Rochester Gas and Electric	Case No. 15-G-0284 Case No. 15-E-0285 Case No. 15-G-0286	Return on Equity
North Dakota Public Service Commission				
Montana-Dakota Utilities Co.	08/20	Montana-Dakota Utilities Co.	C-PU-20-	Return on Equity
Northern States Power Company	12/12	Northern States Power Company	C-PU-12-813	Return on Equity
Northern States Power Company	12/10	Northern States Power Company	C-PU-10-657	Return on Equity
Oklahoma Corporation Commission				
Arkansas Oklahoma Gas Corporation	01/13	Arkansas Oklahoma Gas Corporation	Cause No. PUD 201200236	Return on Equity
Oregon Public Service Commission				
PacifiCorp d/b/a Pacific Power & Light	02/20	PacifiCorp d/b/a Pacific Power & Light	Docket No. UE-374	Return on Equity
Pennsylvania Public Utility Commission				
American Water Works Company Inc.	04/17	Pennsylvania-American Water Company	Docket No. R-2017-2595853	Return on Equity
South Dakota Public Utilities Commission				
Northern States Power Company	06/14	Northern States Power Company	Docket No. EL14-058	Return on Equity
Texas Public Utility Commission				

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Southwestern Public Service Commission	08/19	Southwestern Public Service Commission	Docket No. D-49831	Return on Equity
Southwestern Public Service Company	01/14	Southwestern Public Service Company	Docket No. 42004	Return on Equity
Utah Public Service Commission				
PacifiCorp d/b/a Rocky Mountain Power	05/20	PacifiCorp d/b/a Rocky Mountain Power	Docket No. 20-035-04	Return on Equity
Virginia State Corporation Commission				
Virginia American Water Company, Inc.	11/18	Virginia American Water Company, Inc.	Docket No. PUR-2018-00175	Return on Equity
Washington Utilities Transportation Commission				
Cascade Natural Gas Corporation	06/20	Cascade Natural Gas Corporation	Docket No. UG-200568	Return on Equity
PacifiCorp d/b/a Pacific Power & Light	12/19	PacifiCorp d/b/a Pacific Power & Light	Docket No. UE-191024	Return on Equity
Cascade Natural Gas Corporation	04/19	Cascade Natural Gas Corporation	Docket No. UG-190210	Return on Equity
West Virginia Public Service Commission				
West Virginia American Water Company	04/18	West Virginia American Water Company	Case No. 18-0573-W-42T Case No. 18-0576-S-42T	Return on Equity
Wisconsin Public Service Commission				
Wisconsin Electric Power Company and Wisconsin Gas LLC	03/19	Wisconsin Electric Power Company and Wisconsin Gas LLC	Docket No. 05-UR-109	Return on Equity
Wisconsin Public Service Corp.	03/19	Wisconsin Public Service Corp.	6690-UR-126	Return on Equity
Wyoming Public Service Commission				
PacifiCorp d/b/a Rocky Mountain Power	03/20	PacifiCorp d/b/a Rocky Mountain Power	Docket No. 20000-578-ER-20	Return on Equity
Montana-Dakota Utilities Co.	05/19	Montana-Dakota Utilities Co.	30013-351-GR-19	Return on Equity

Constant Growth DCF (Expected Dividend Yield using 1/2 Growth Rate)
Kahal Proxy Group (2018 case)

Company		Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	CNN	Average Growth Rate	Low ROE	Mean ROE	High ROE
Alliant Energy Corporation	LNT	3.02%	3.10%	6.50%	5.30%	5.54%	5.08%	5.61%	8.26%	8.71%	9.62%
Ameren Corporation	AEE	2.65%	2.74%	6.50%	5.85%	6.75%	6.75%	6.46%	8.67%	9.20%	9.49%
Avangrid, Inc.	AGR	3.88%	3.99%	6.00%	5.20%	5.57%	6.30%	5.77%	9.30%	9.76%	10.30%
Black Hills Corporation	BKH	3.42%	3.51%	3.50%	5.13%	5.76%	5.76%	5.04%	7.07%	8.54%	9.28%
CMS Energy Corporation	CMS	2.74%	2.84%	7.50%	7.16%	6.99%	7.00%	7.16%	9.93%	10.00%	10.34%
Consolidated Edison, Inc.	ED	4.00%	4.05%	3.00%	2.65%	2.00%	3.00%	2.66%	6.09%	6.72%	7.06%
DTE Energy Company	DTE	3.81%	3.92%	5.00%	5.84%	5.53%	6.00%	5.59%	9.01%	9.51%	9.92%
Duke Energy Corporation	DUK	4.57%	4.67%	5.00%	3.86%	4.44%	3.94%	4.31%	8.62%	8.98%	9.68%
Eversource Energy	ES	2.72%	2.81%	6.50%	6.23%	6.13%	6.25%	6.28%	9.02%	9.08%	9.31%
NorthWestern Corporation	NWE	4.04%	4.10%	1.50%	3.70%	3.39%	4.00%	3.15%	5.63%	7.25%	8.12%
Wisconsin Energy Corporation	WEC	2.78%	2.86%	6.00%	5.90%	5.91%	6.48%	6.07%	8.85%	8.94%	9.35%
Xcel Energy	XEL	2.70%	2.78%	6.00%	6.10%	6.05%	6.05%	6.05%	8.87%	8.83%	8.88%
Mean								5.35%	8.28%	8.79%	9.28%

Constant Growth DCF (Expected Dividend Yield using 1/2 Growth Rate)
Bulkley Proxy Group (2018 case)

Company		Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	CNN	Average Growth Rate	Low ROE	Mean ROE	High ROE
Ameren Corporation	AEE	2.65%	2.74%	6.50%	5.85%	6.75%	6.75%	6.46%	8.67%	9.20%	9.49%
Avangrid, Inc.	AGR	3.88%	3.99%	6.00%	5.20%	5.57%	6.30%	5.77%	9.30%	9.76%	10.30%
Black Hills Corporation	BKH	3.42%	3.51%	3.50%	5.13%	5.76%	5.76%	5.04%	7.07%	8.54%	9.28%
CMS Energy Corporation	CMS	2.74%	2.84%	7.50%	7.16%	6.99%	7.00%	7.16%	9.93%	10.00%	10.34%
Consolidated Edison, Inc.	ED	4.00%	4.05%	3.00%	2.65%	2.00%	3.00%	2.66%	6.09%	6.72%	7.06%
DTE Energy Company	DTE	3.81%	3.92%	5.00%	5.84%	5.53%	6.00%	5.59%	9.01%	9.51%	9.92%
Eversource Energy	ES	2.72%	2.81%	6.50%	6.23%	6.13%	6.25%	6.28%	9.02%	9.08%	9.31%
NorthWestern Corporation	NWE	4.04%	4.10%	1.50%	3.70%	3.39%	4.00%	3.15%	5.63%	7.25%	8.12%
Wisconsin Energy Corporation	WEC	2.78%	2.86%	6.00%	5.90%	5.91%	6.48%	6.07%	8.85%	8.94%	9.35%
Xcel Energy	XEL	2.70%	2.78%	6.00%	6.10%	6.05%	6.05%	6.05%	8.87%	8.83%	8.88%
Mean								5.42%	8.24%	8.78%	9.21%

Constant Growth DCF (Expected Dividend Yield using Full Growth Rate)
Kahal Proxy Group (2018 case)

Company		Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	CNN	Average Growth Rate	Low ROE	Mean ROE	High ROE	Excluding results below 7% Low ROE	Mean ROE	High ROE
Alliant Energy Corporation	LNT	3.02%	3.19%	6.50%	5.30%	5.54%	5.08%	5.61%	8.43%	8.79%	9.72%	8.43%	8.79%	9.72%
Ameren Corporation	AEE	2.65%	2.82%	6.50%	5.85%	6.75%	6.75%	6.46%	8.84%	9.28%	9.58%	8.84%	9.28%	9.58%
Avangrid, Inc.	AGR	3.88%	4.10%	6.00%	5.20%	5.57%	6.30%	5.77%	9.52%	9.87%	10.42%	9.52%	9.87%	10.42%
Black Hills Corporation	BKH	3.42%	3.59%	3.50%	5.13%	5.76%	5.76%	5.04%	7.22%	8.63%	9.38%	7.22%	8.63%	9.38%
CMS Energy Corporation	CMS	2.74%	2.94%	7.50%	7.16%	6.99%	7.00%	7.16%	10.13%	10.10%	10.45%	10.13%	10.10%	10.45%
Consolidated Edison, Inc.	ED	4.00%	4.11%	3.00%	2.65%	2.00%	3.00%	2.66%	6.19%	6.77%	7.12%			7.12%
DTE Energy Company	DTE	3.81%	4.02%	5.00%	5.84%	5.53%	6.00%	5.59%	9.22%	9.62%	10.04%	9.22%	9.62%	10.04%
Duke Energy Corporation	DUK	4.57%	4.77%	5.00%	3.86%	4.44%	3.94%	4.31%	8.81%	9.08%	9.80%	8.81%	9.08%	9.80%
Eversource Energy	ES	2.72%	2.89%	6.50%	6.23%	6.13%	6.25%	6.28%	9.20%	9.17%	9.40%	9.20%	9.17%	9.40%
NorthWestern Corporation	NWE	4.04%	4.17%	1.50%	3.70%	3.39%	4.00%	3.15%	5.73%	7.31%	8.20%		7.31%	8.20%
Wisconsin Energy Corporation	WEC	2.78%	2.95%	6.00%	5.90%	5.91%	6.48%	6.07%	9.02%	9.02%	9.44%	9.02%	9.02%	9.44%
Xcel Energy	XEL	2.70%	2.86%	6.00%	6.10%	6.05%	6.05%	6.05%	9.04%	8.91%	8.96%	9.04%	8.91%	8.96%
Mean								5.35%	8.45%	8.88%	9.38%	8.94%	9.07%	9.38%

Constant Growth DCF (Expected Dividend Yield using Full Growth Rate)
Bulkley Proxy Group (2018 case)

Company		Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	CNN	Average Growth Rate	Low ROE	Mean ROE	High ROE	Excluding results below 7% Low ROE	Mean ROE	High ROE
Ameren Corporation	AEE	2.65%	2.82%	6.50%	5.85%	6.75%	6.75%	6.46%	8.84%	9.28%	9.58%	8.84%	9.28%	9.58%
Avangrid, Inc.	AGR	3.88%	4.10%	6.00%	5.20%	5.57%	6.30%	5.77%	9.52%	9.87%	10.42%	9.52%	9.87%	10.42%
Black Hills Corporation	BKH	3.42%	3.59%	3.50%	5.13%	5.76%	5.76%	5.04%	7.22%	8.63%	9.38%	7.22%	8.63%	9.38%
CMS Energy Corporation	CMS	2.74%	2.94%	7.50%	7.16%	6.99%	7.00%	7.16%	10.13%	10.10%	10.45%	10.13%	10.10%	10.45%
Consolidated Edison, Inc.	ED	4.00%	4.11%	3.00%	2.65%	2.00%	3.00%	2.66%	6.19%	6.77%	7.12%			7.12%
DTE Energy Company	DTE	3.81%	4.02%	5.00%	5.84%	5.53%	6.00%	5.59%	9.22%	9.62%	10.04%	9.22%	9.62%	10.04%
Eversource Energy	ES	2.72%	2.89%	6.50%	6.23%	6.13%	6.25%	6.28%	9.20%	9.17%	9.40%	9.20%	9.17%	9.40%
NorthWestern Corporation	NWE	4.04%	4.17%	1.50%	3.70%	3.39%	4.00%	3.15%	5.73%	7.31%	8.20%		7.31%	8.20%
Wisconsin Energy Corporation	WEC	2.78%	2.95%	6.00%	5.90%	5.91%	6.48%	6.07%	9.02%	9.02%	9.44%	9.02%	9.02%	9.44%
Xcel Energy	XEL	2.70%	2.86%	6.00%	6.10%	6.05%	6.05%	6.05%	9.04%	8.91%	8.96%	9.04%	8.91%	8.96%
Mean								5.42%	8.41%	8.87%	9.30%	9.02%	9.10%	9.30%

COMPARISON OF PUBLIC SERVICE ELECTRIC AND GAS AND PROXY GROUP COMPANIES
RISK ASSESSMENT
Data as of 2018 Base Rate Proceeding

		[1]	[2]	[3]
Company	**Jurisdiction/Service**	**Test Year**	**Revenue Decoupling**	**Capital Cost Recovery Mechanism**
Ameren Corporation	Illinois - Electric	Fully Forecast	No	Yes
	Illinois - Gas	Fully Forecast	Full	Yes
	Missouri - Electric	Partially Forecast	Partial	Yes
	Missouri - Gas	Partially Forecast	No	Yes
Avangrid	Connecticut - Electric	Fully Forecast	Full	No
	Connecticut - Gas	Fully Forecast	Full	Yes
	Connecticut - Gas	Fully Forecast	No	Yes
	Maine - Electric	Fully Forecast	Full	No
	Maine - Gas	Fully Forecast	No	No
	New York - Electric	Fully Forecast	Full	No
	New York - Gas	Fully Forecast	Full	Yes
	New York - Electric	Fully Forecast	Full	No
	New York - Gas	Fully Forecast	Full	Yes
Black Hills Corp	Arkansas - Gas	Partially Forecast	Full	Yes
	Colorado - Electric	Historic	No	Yes
	Colorado - Gas	Historic	No	No
	Iowa - Gas	Historic	No	Yes
	Kansas - Gas	Historic	Partial	Yes
	Nebraska - Gas	Historic	No	Yes
	South Dakota - Electric	Historic	Partial	Yes
	Wyoming - Electric	Historic	Partial	No
	Wyoming - Gas	Historic	Partial	No
CenterPoint Energy, Inc.	Arkansas - Gas	Partially Forecast	Full	Yes
	Louisiana - Gas	Fully Forecast	Partial	No
	Minnesota - Gas	Fully Forecast	Full	No
	Oklahoma - Gas	Historic	Partial	Yes
	Texas - Electric	Historic	No	Yes
	Texas - Gas	Historic	No	Yes
CMS Energy Corporation	Michigan - Electric	Fully Forecast	No	No
	Michigan - Gas	Fully Forecast	No	Yes
Consolidated Edison, Inc.	New Jersey - Electric	Partially Forecast	No	Yes
	New York - Electric	Fully Forecast	Full	Yes
	New York - Gas	Fully Forecast	Full	Yes
	O&R - Electric	Fully Forecast	Full	Yes
	O&R - Gas	Fully Forecast	Full	Yes
DTE Energy Company	Michigan - Electric	Fully Forecast	No	Yes
	Michigan - Gas	Fully Forecast	Partial	Yes
Eversource Energy	Connecticut - Electric	Fully Forecast	Full	Yes
	Connecticut - Gas	Fully Forecast	Pending	Yes
	Massachusetts - Electric	Historic	No	Yes
	Massachuetts - Electric	Historic	Full	Yes
	Massachusetts - Gas	Historic	Full	Yes
	New Hampshire - Electric	Historic	Partial	Yes
NorthWestern Corporation	Montana - Electric	Historic	No	No
	Montana - Gas	Historic	No	No
	Nebraska - Gas	Historic	No	No
	South Dakota - Electric	Historic	No	No
	South Dakota - Gas	Historic	No	No
WEC Energy Group	Illinois - Gas	Fully Forecast	Full	Yes
	Illinois - Gas	Fully Forecast	Full	Yes
	Michigan - Electric	Fully Forecast	No	Yes
	Michigan - Gas	Fully Forecast	No	No
	Minnesota - Gas	Fully Forecast	Full	No
	Wisconsin - Electric	Fully Forecast	No	Yes
	Wisconsin - Gas	Fully Forecast	No	Yes
	Wisconsin - Gas	Fully Forecast	No	Yes
Xcel Energy Inc.	Colorado - Electric	Historic	No	Yes
	Colorado - gas	Historic	Partial	Yes
	Minnesota - electric	Fully Forecast	Full	Yes
	Minnesota - gas	Fully Forecast	No	Yes
	New Mexico	Fully Forecast	No	No
	North Dakota - electric	Fully Forecast	No	Yes
	North Dakota - gas	Fully Forecast	No	No
	South Dakota - electric	Historic	Partial	Yes
	Texas - electric	Historic	No	Yes
	Wisconsin - electric	Fully Forecast	No	Yes
	Wisconsin - gas	Fully Forecast	No	Yes

			Revenue Decoupling		Capital Cost Recovery	
Proxy Group Average	Fully Forecast	38	Full	22	Yes	47
	Partially Forecast	5	Partial	11	No	20
	Historic	24	No	33		
Percentage of Proxy Group with Mechanism		64%		50%		70%
Public Service Electric & Gas	New Jersey - electric	Partially Forecast		No		Yes
	New Jersey - gas	Partially Forecast		Partial		Yes

Notes
[1] Source: "Alternative Regulation for Evolving Utility Challenges," Prepared by Pacific Economics Group Research for Edison Electric Institute, Table 6, Novemb
[2] - [3] Source: "Adjustment Clauses: A State-by-state Overview," Regulatory Research Associates, September 12, 2016

COMPARISON OF PUBLIC SERVICE ELECTRIC AND GAS AND PROXY GROUP COMPANIES
RISK ASSESSMENT
Updated through April 2020

		[1]	[2]	[3]
Company	**Jurisdiction/Service**	**Test Year**	**Revenue Decoupling**	**Capital Cost Recovery Mechanism**
Ameren Corporation	Illinois - Electric	Fully Forecast	No	Yes
	Illinois - Gas	Fully Forecast	Partial	Yes
	Missouri - Electric	Partially Forecast	Partial	Yes
	Missouri - Gas	Partially Forecast	Partial	Yes
Avangrid	Connecticut - Electric	Fully Forecast	Full	No
	Connecticut - Gas	Fully Forecast	Full	Yes
	Maine - Electric	Fully Forecast	Full	No
	Maine - Gas	Fully Forecast	No	No
	New York - Electric	Fully Forecast	Full	No
	New York - Gas	Fully Forecast	Full	Yes
Black Hills Corp	Arkansas - Gas	Partially Forecast	Full	Yes
	Colorado - Electric	Historic	No	Yes
	Colorado - Gas	Historic	No	No
	Iowa - Gas	Historic	No	Yes
	Kansas - Gas	Historic	Partial	Yes
	Nebraska - Gas	Historic	No	Yes
	South Dakota - Electric	Historic	Partial	No
	Wyoming - Electric	Historic	Partial	No
	Wyoming - Gas	Historic	Partial	Yes
CMS Energy Corporation	Michigan - Electric	Fully Forecast	No	No
	Michigan - Gas	Fully Forecast	Partial	Yes
Consolidated Edison, Inc.	New Jersey - Electric	Partially Forecast	No	Yes
	New York - Electric	Fully Forecast	Full	No
	New York - Gas	Fully Forecast	Full	Yes
	O&R - Electric	Fully Forecast	Full	No
	O&R - Gas	Fully Forecast	Full	Yes
DTE Energy Company	Michigan - Electric	Fully Forecast	No	No
	Michigan - Gas	Fully Forecast	Partial	Yes
Eversource Energy	Connecticut - Electric	Fully Forecast	Full	Yes
	Connecticut - Gas	Fully Forecast	Full	Yes
	Massachusetts - Electric	Historic	Full	Yes
	Massachuetts - Electric	Historic	Full	Yes
	Massachusetts - Gas	Historic	Full	Yes
	New Hampshire - Electric	Historic	Partial	Yes
NorthWestern Corporation	Montana - Electric	Historic	No	No
	Montana - Gas	Historic	No	No
	Nebraska - Gas	Historic	No	No
	South Dakota - Electric	Historic	No	No
	South Dakota - Gas	Historic	No	No
WEC Energy Group	Illinois - Gas	Fully Forecast	Partial	Yes
	Illinois - Gas	Fully Forecast	Partial	Yes
	Michigan - Electric	Fully Forecast	No	No
	Michigan - Gas	Fully Forecast	No	No
	Minnesota - Gas	Fully Forecast	Partial	Yes
	Wisconsin - Electric	Fully Forecast	No	Yes
	Wisconsin - Gas	Fully Forecast	No	Yes
	Wisconsin - Gas	Fully Forecast	No	Yes
Xcel Energy Inc.	Colorado - Electric	Historic	No	Yes
	Colorado - gas	Historic	Partial	Yes
	Minnesota - electric	Fully Forecast	Partial	No
	Minnesota - gas	Fully Forecast	No	Yes
	New Mexico	Fully Forecast	No	No
	North Dakota - electric	Fully Forecast	No	Yes
	North Dakota - gas	Fully Forecast	No	No
	South Dakota - electric	Historic	Partial	Yes
	Texas - electric	Historic	No	Yes
	Wisconsin - electric	Fully Forecast	No	No
	Wisconsin - gas	Fully Forecast	No	No

			Revenue Decoupling		Capital Cost Recovery	
Proxy Group Average	Fully Forecast	33	Full	15	Yes	35
	Partially Forecast	4	Partial	16	No	23
	Historic	21	No	27		
Percentage of Proxy Group with Mechanism		64%		53%		60%
Public Service Electric & Gas	New Jersey - electric	Partially Forecast		Yes		Yes
	New Jersey - gas	Partially Forecast		Partial		Yes

Notes
[1] Source: "Alternative Regulation for Evolving Utility Challenges," Prepared by Pacific Economics Group Research for Edison Electric Institute, Table 6, Nove
[2] - [3] Source: "Adjustment Clauses: A State-by-state Overview," Regulatory Research Associates, Noember 21, 2019, Operating subsidiaries not covered i