more detail below, a reasonable ROE estimate appropriately considers alternative methodologies and the reasonableness of their individual and collective results.

A. Importance of Multiple Analytical Approaches

Q. Why is it important to use more than one analytical approach?

A. Because the cost of equity is not directly observable, it must be estimated based on both quantitative and qualitative information. When faced with the task of estimating the cost of equity, analysts and investors are inclined to gather and evaluate as much relevant data as reasonably can be analyzed. Several models have been developed to estimate the cost of equity, and I use multiple approaches to estimate the cost of equity. As a practical matter, however, all of the models available for estimating the cost of equity are subject to limiting assumptions or other methodological constraints. Consequently, many well-regarded finance texts recommend using multiple approaches when estimating the cost of equity. For example, Copeland, Koller, and Murrin[51] suggest using the CAPM and Arbitrage Pricing Theory model, while Brigham and Gapenski[52] recommend the CAPM, DCF, and Bond Yield Plus Risk Premium approaches.

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51 Tom Copeland, Tim Koller and Jack Murrin, Valuation: Measuring and Managing the Value of Companies, 3rd Ed. (New York: McKinsey & Company, Inc., 2000), at 214.

52 Eugene Brigham, Louis Gapenski, Financial Management: Theory and Practice, 7th Ed. (Orlando: Dryden Press, 1994), at 341.

Q. Is it important, based the current market conditions, to use more than one analytical approach?

A. Yes. Low interest rates and the effects of the investor "flight to quality" can be seen in high utility share valuations, relative to historical levels and relative to the broader market. Higher utility stock valuations produce lower dividend yields and result in lower cost of equity estimates from a DCF analysis. Low interest rates also affect the CAPM in two ways: (1) the risk-free rate is lower, and (2) because the market risk premium is a function of interest rates, (i.e., it is the return on the broad stock market less the risk-free interest rate), the risk premium should move higher when interest rates are lower. Therefore, it is important to use multiple analytical approaches to moderate the impact that the current low interest rate environment is having on the ROE estimates for the proxy group and, where possible, consider using projected market data in the models to estimate the return for the forward-looking period.

Q. Are you aware of any regulatory commissions that have recognized that recent conditions in capital markets are causing ROE recommendations based on DCF models to be unreasonable?

A. Yes, several regulatory commissions have addressed the effect of capital market conditions on the DCF model, including the Federal Energy Regulatory Commissions ("FERC"), the Illinois Commerce Commission ("ICC"), and the Pennsylvania PUC ("PPUC").

Q. Please summarize how the FERC has responded to the effect of market conditions on the DCF model.

A. FERC's review of its ROE estimation methodology began with understanding the important role that dividend yields play in the DCF model and how market conditions had affected this assumption in the models. In Opinion No. 531, the FERC noted:

> There is 'model risk' associated with the excessive reliance or mechanical application of a model when the surrounding conditions are outside of the normal range. 'Model risk' is the risk that a theoretical model that is used to value real world transactions fails to predict or represent the real phenomenon that is being modeled.[53]

In Opinion No. 531, the FERC also noted that the low interest rates and bond yields that persisted throughout the analytical period that was relied on (study period) had affected the results of the DCF model, and therefore the FERC recognized the need to move away from the midpoint of the DCF analysis. This order began the FERC's review of multiple ROE estimation methodologies that have been discussed in several subsequent opinions. FERC explained its reasons for moving away from sole reliance on the DCF model, recognizing that the DCF model may not singularly reflect how investors make decisions. Further, the FERC recognized, after reviewing the DCF, CAPM, Risk Premium and Expected Earnings methodologies that the DCF results do not capture the results of the other models.

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53 FERC Docket No. EL11-66-001, Opinion No. 531 (June 19, 2014), fn 286.

Therefore, it was important to review more than one methodology in setting the ROE.[54]

The FERC has considered the use of several combinations of models since its initial determination in Opinion 531 that the DCF could not be used in isolation.[55] Most recently, in a May 21, 2020 Order on Rehearing of its November 2019 order (Opinion No. 569-A), the FERC reconsidered its reliance on the two-model approach FERC adopted in Opinion No. 569 by reviving the Risk Premium model.[56] In reiterating the importance of relying on multiple methods, the FERC cited Dr. Morin:

> In the absence of any hard evidence as to which method outdoes the other, all relevant evidence should be used and weighted equally, in order to minimize judgmental error, measurement error, and conceptual infirmities. A regulator should rely on the results of a variety of methods applied to a variety of comparable groups, and not on one particular method. There is no guarantee that a single DCF result is necessarily the ideal predictor of the stock price and of the cost of equity reflected in that price, just as there is no guarantee that a single CAPM or Risk Premium result constitutes the perfect explanation of that stock price.[57]

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54 Federal Energy Regulatory Commission, Docket No. EL 11-66-001, et al., Order Directing Briefs, issued October 16, 2018, at P 40. [Figure 2 was omitted]

55 See, e.g., Federal Energy Regulatory Commission, Docket No. EL 11-66-001, et al., Order Directing Briefs, issued October 16, 2018; Federal Energy Regulatory Commission, Docket Nos. EL14-12-003 and EL15-45-000, Order on Briefs, Rehearing, and Initial Decision, 169 FERC ¶ 61,129, issued November 21, 2019; Federal Energy Regulatory Commission, Docket Nos. EL14-12-004 and EL15-45-013, Order on Rehearing, 171 FERC ¶ 61,154, issued May 21, 2020.

56 Federal Energy Regulatory Commission, Docket Nos. EL14-12-004 and EL15-45-013, Order on Rehearing, 171 FERC ¶ 61,154, issued May 21, 2020, PP 2, 45.

57 *Id.*, at P 43.

In May 2021, in Opinion No. 575, the FERC upheld its reliance on three model approaches (i.e., DCF, CAPM, and Risk Premium model).[58]

Q. How have the PPUC and the ICC addressed the effect of market conditions on the DCF?

A. In a 2012 decision for PPL Electric Utilities, the PPUC noted that it had traditionally relied primarily on the DCF method to estimate the cost of equity for regulated utilities, but the PPUC recognized that market conditions were causing the DCF model to produce results that were much lower than other models such as the CAPM and Bond Yield Plus Risk Premium. The PPUC's Order supported the consideration of multiple ROE estimation methodologies.[59]

The PPUC ultimately concluded:

> As such, where evidence based on the CAPM and [Risk Premium] methods suggest that the DCF-only results may understate the utility's current cost of equity capital, we will give consideration to those other methods, to some degree, in determining the appropriate range of reasonableness for our equity return determination.[60]

In a recent ICC case, Docket No. 16-0093, Staff relied on a DCF analysis that resulted in average returns for their proxy groups of 7.24 percent to 7.51 percent.

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58 Federal Energy Regulatory Commission, Docket No. ER13-1508-001, et.al., Order on Briefs and Initial Decision, 175 FERC ¶ 61,136, issued May 20, 2021, P 55.

59 Pennsylvania Public Utility Commission, PPL Electric Utilities, R-2012-2290597, meeting held December 5, 2012, at 80 [Clarification added].

60 *Id.*, at 81.

The company demonstrated that these results were uncharacteristically low, by comparing the results of Staff's models to recently authorized ROEs for regulated utilities and the return on the S&P 500.[61] In Order No. 16-0093, the ICC agreed with the company that Staff's proposed ROE of 8.04 percent was anomalous and recognized that a return that is not competitive will deter investment in Illinois.[62] In setting the return in that proceeding, the ICC recognized that it was necessary to consider other factors beyond the outputs of the financial models, particularly whether or not the return is sufficient to attract capital, to maintain financial integrity, and to produce returns commensurate with returns for companies of comparable risk, while balancing the interests of customers and shareholders.[63]

Q. What are your conclusions about the results of the DCF and CAPM models?

A. Recent market data that is used as the basis for the assumptions for both models have been affected by market conditions. As a result, relying exclusively on historical assumptions in these models, without considering whether these assumptions are consistent with investors' future expectations, will underestimate the cost of equity that investors would require over the period that the Company's renewed RSP and resulting rates will be in effect. To the extent the proxy companies underperform in the near-term as noted above, dividend yields may

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61 State of Illinois Commerce Commission, Docket No. 16-0093, Illinois-American Water Company Initial Brief, August 31, 2016, at 10.

62 Illinois Staff's analysis and recommendation in that proceeding were based on its application of the multi-stage DCF model and the CAPM to a proxy group of water utilities.

63 State of Illinois Commerce Commission Decision, Docket No. 16-0093, Illinois-American Water Company, 2016 WL 7325212 (2016), at 55.

increase and the current DCF results will underestimate the ROE for CenterPoint Energy Arkla.

The use of recent historical Treasury bond yields in the CAPM also tends to underestimate the projected cost of equity. Recent experience indicates that interest rates will increase over the near-term. The expectation that bond yields will not remain at currently low levels means that the expected cost of equity would be higher than is suggested by the CAPM using historical average yields. The use of projected yields on Treasury bonds results in CAPM estimates that are more reflective of the market conditions that investors expect during the period that the Company's renewed RSP and resulting rates will be in effect.

B. Constant Growth DCF Model

Q. Please describe the DCF approach.

A. The DCF approach is based on the theory that a stock's current price represents the present value of all expected future cash flows. In its most general form, the DCF model is expressed as follows:

$$P_0 = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \ldots + \frac{D_\infty}{(1+k)^\infty} \quad [1]$$

Where P_0 represents the current stock price, D1…D∞ are all expected future dividends, and k is the discount rate, or required ROE. Equation [1] is a standard

present value calculation that can be simplified and rearranged into the following form:

$$k = \frac{D_0(1+g)}{P_0} + g \qquad [2]$$

Equation [2] is often referred to as the Constant Growth DCF model in which the first term is the expected dividend yield and the second term is the expected long-term growth rate.

Q. What assumptions are required for the Constant Growth DCF model?

A. The Constant Growth DCF model requires the following four assumptions: (1) a constant growth rate for earnings and dividends; (2) a stable dividend payout ratio; (3) a constant price-to-earnings ratio; and (4) a discount rate greater than the expected growth rate. To the extent that any of these assumptions are violated, considered judgment and/or specific adjustments should be applied to the results.

Q. What market data did you use to calculate the dividend yield in your Constant Growth DCF model?

A. The dividend yield in my Constant Growth DCF model is based on the proxy companies' current annualized dividend and average closing stock prices over the 30-, 90-, and 180-trading days ended June 30, 2021.

Q. Why did you use 30-, 90-, and 180-day averaging periods?

A. In my Constant Growth DCF model, I use an average of recent trading days to calculate the term P_0 in the DCF model to ensure that the ROE is not skewed by anomalous events that may affect stock prices on any given trading day. The averaging period should also be reasonably representative of expected capital market conditions over the long-term. However, the averaging periods that I use rely on historical data that may not be consistent with the forward-looking market expectations. Therefore, the results of my Constant Growth DCF model using historical data may underestimate the forward-looking cost of equity. As a result, I place more weight on the mean to mean high results produced by my Constant Growth DCF model.

Q. Did you make any adjustments to the dividend yield to account for periodic growth in dividends?

A. Yes, I did. Because utility companies tend to increase their quarterly dividends at different times throughout the year, it is reasonable to assume that dividend increases will be evenly distributed over calendar quarters. Given that assumption, it is reasonable to apply one-half of the expected annual dividend growth rate for purposes of calculating the expected dividend yield component of the DCF model. This adjustment ensures that the expected first-year dividend yield is, on average, representative of the coming twelve-month period, and does not overstate the aggregated dividends to be paid during that time.

Q. Why is it important to select appropriate measures of long-term growth in applying the DCF model?

A. In its Constant Growth form, the DCF model (*i.e.*, Equation [2]) assumes a single growth estimate in perpetuity. To reduce the long-term growth rate to a single measure, one must assume that the payout ratio remains constant and that earnings per share, dividends per share and book value per share all grow at the same constant rate. Over the long run, however, dividend growth can only be sustained by earnings growth. Therefore, it is important to incorporate a variety of sources of long-term earnings growth rate projections into the Constant Growth DCF model.

Q. Which sources of long-term earnings growth rates did you use?

A. My Constant Growth DCF model incorporates three sources of long-term earnings growth rate projections: (1) Zacks Investment Research; (2) Thomson First Call (provided by Yahoo!Finance); and (3) Value Line Investment Survey.

C. Discounted Cash Flow Model Results

Q. How did you calculate the range of results for the Constant Growth DCF model?

A. I calculated the low result for my DCF models using the minimum growth rate (*i.e.*, the lowest of the First Call, Zacks, and Value Line earnings growth rates) for each of the proxy group companies. Thus, the low result reflects the minimum DCF result for the proxy group. I used a similar approach to calculate the high results,

using the highest growth rate for each proxy group company. The mean results were calculated using the average growth rates from all sources.

Q. Have you excluded any of the DCF results for individual companies in your proxy group?

A. Yes, I have. It is appropriate to exclude Constant Growth DCF results below a specified threshold at which equity investors would consider such returns to provide an insufficient return increment above long-term debt costs. The average credit rating for the companies in my proxy group is BBB+/A3. The average yield on Moody's A-rated utility bonds for the 30 trading days ending June 30, 2021, was 3.20 percent.[64] As shown in Exhibit AEB-4, I have eliminated Constant Growth DCF results lower than 7.00 percent because such returns would provide equity investors a risk premium only 380 basis points above A-rated utility bonds. While I believe it is appropropriate to consider outliers, as a practical matter, only the low DCF result for New Jersey Resources, Inc. was excluded from my analysis. There were no observations that were excluded from the mean and mean high DCF results.

Q. What were the results of your DCF analyses?

A. Figure summarizes the results of my DCF analyses. As shown in Figure , the mean DCF results range from 9.73 percent to 9.96 percent, and the mean high results are

[64] Source: Bloomberg Professional.

in the range of 11.88 percent to 12.11 percent. While I also summarize the mean low DCF results, I do not believe that the low DCF results provide a reasonable spread over the expected yields on Treasury bonds to compensate investors for the incremental risk related to an equity investment.

Figure 6: Discounted Cash Flow Results[65]

	Mean Low	Mean	Mean High
30-Day Average	8.36%	9.73%	11.88%
90-Day Average	8.40%	9.77%	11.92%
180-Day Average	8.57%	9.96%	12.11%

Q. What are your conclusions about the results of the DCF models?

A. As discussed previously, one primary assumption of the DCF models is a constant P/E ratio. That assumption is heavily influenced by the market price of utility stocks. At times when utility valuations are high and may not be sustainable, it is important to consider the results of the DCF models with caution. The dividend yield on the 30-day average DCF analysis was 3.43 percent, lower than the long-term average average dividend yield of 3.84 percent for natural gas utilities since the year 2000.[66] These data points demonstrate that the results of the current DCF models may be understated.

The Company's current authorized midpoint ROE of 9.95 percent falls between the mean and mean high DCF results. As noted earlier, it is important to consider the

[65] *See* Exhibit AEB-4, excluding outliers.
[66] As measured by the proxy group calculated as an index. Source: S&P Global Market Intelligence.

results of multiple methodologies. Therefore, I also considered the results of the CAPM, ECAPM, and Bond Yield Plus Risk Premium analyses when assessing the reasonableness of CenterPoint Energy Arkla's current authorized midpoint ROE.

D. CAPM Analyses

Q. Please briefly describe the Capital Asset Pricing Model.

A. The CAPM is a risk premium approach that estimates the cost of equity for a given security as a function of a risk-free return plus a risk premium to compensate investors for the non-diversifiable or "systematic" risk of that security. This second component is the product of the market risk premium and the Beta coefficient, which measures the relative riskiness of the security being evaluated.

The CAPM is defined by four components, each of which must theoretically be a forward-looking estimate:

$$K_e = r_f + \beta(r_m - r_f) \quad [3]$$

Where:

K_e = the required market ROE;

β = Beta coefficient of an individual security;

r_f = the risk-free rate of return; and

r_m = the required return on the market.

In this specification, the term $(r_m - r_f)$ represents the market risk premium. According to the theory underlying the CAPM, because unsystematic risk can be

diversified away, investors should only be concerned with systematic or non-diversifiable risk. Non-diversifiable risk is measured by Beta, which is defined as:

$$\beta = \frac{Covariance(r_e, r_m)}{Variance(r_m)} \quad [4]$$

The variance of the market return (i.e., Variance (r_m)) is a measure of the uncertainty of the general market, and the covariance between the return on a specific security and the general market (i.e., Covariance (r_e, r_m)) reflects the extent to which the return on that security will respond to a given change in the general market return. Thus, Beta represents the risk of the security relative to the general market.

Q. What risk-free rate did you use in your CAPM analysis?

A. I relied on three sources for my estimate of the risk-free rate: (1) the current 30-day average yield on 30-year U.S. Treasury bonds, which is 2.20 percent;[67] (2) the average projected 30-year U.S. Treasury bond yield for the fourth quarter of 2021 through the fourth quarter of 2022, which is 2.62 percent;[68] and (3) the average projected 30-year U.S. Treasury bond yield for 2023 through 2027, which is 3.50 percent.[69] In determining the security most relevant to the application of the CAPM, it is important to select the term (or maturity) that best matches the life of the underlying investment. As noted by Morningstar:

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67 Bloomberg Professional, as of June 30, 2021.
68 Blue Chip Financial Forecasts, Vol. 40, No. 7, July 1, 2021, at 2.
69 Blue Chip Financial Forecasts, Vol. 40, No. 1, June 1, 2021, at 14.

> The traditional thinking regarding the time horizon of the chosen Treasury security is that it should match the time horizon of whatever is being valued... Note that the horizon is a function of the investment, not the investor. If an investor plans to hold stock in a company for only five years, the yield on a five-year Treasury note would not be appropriate since the company will continue to exist beyond those five years.[70]

Because utility companies represent long-duration investments, it is appropriate to use yields on long-term Treasury bonds as the risk-free rate component of the CAPM. In my view, the 30-year Treasury bond is the appropriate security for that purpose. Because the cost of capital is intended to be forward-looking, it is appropriate to consider projected measures of the market risk premium and interest rates

Q. Does your use of the 30-year Treasury bond yield suggest that all investors have an investment horizon of 30 years?

A. No, it does not. As discussed above, the appropriate factor to consider in determining what duration bond to use is the expected life of the underlying assets. As noted by Morningstar, the use of the 30-year Treasury bond best matches the life of the assets being valued, not the time horizon of the investor.

Q. Would you place more weight on one of these scenarios?

A. Yes, I would. Based on current market conditions, I place more weight on the results of the projected yields on the 30-year Treasury bonds. As discussed

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[70] Morningstar Inc., Ibbotson SBBI 2013 Valuation Yearbook, at 44.

previously, the estimation of the cost of equity in this case should be forward-looking because it is the return that investors would receive over the future rate period. Therefore, the inputs and assumptions used in the CAPM analysis should reflect the expectations of the market at that time. While I have included the results of a CAPM analysis that relies on the current average risk-free rate, this analysis fails to take into consideration the effect of the market's expectations for interest rate increases on the cost of equity.

Q. What Beta coefficients did you use in your CAPM analyses?

A. As shown on Exhibit AEB-5, I used the Beta coefficients for the proxy group companies as reported by Bloomberg and Value Line. The Beta coefficients reported by Bloomberg were calculated using ten years of weekly returns relative to the S&P 500 Index. Value Line's calculation is based on five years of weekly returns relative to the New York Stock Exchange Composite Index.

Additionally, as shown in Exhibit AEB-5, page 3, I also considered an additional CAPM analysis which relies on the long-term average utility Beta coefficient for the companies in the proxy group. The long-term average utility Beta coefficient was calculated as an average of the Value Line Beta coefficients for the proxy group companies from 2011 through 2020.

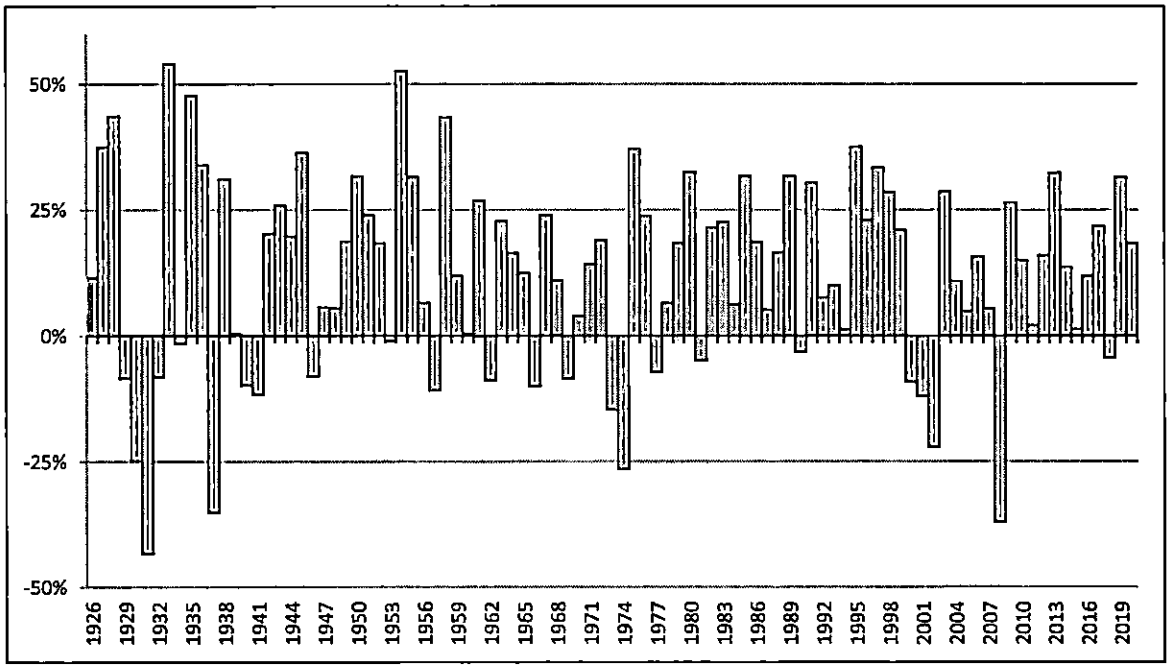
Q. How did you estimate the market risk premium in the CAPM?

A. I estimated the market risk premium based on the expected return on the S&P 500 Index less the yield on the 30-year Treasury bond. I calculated the expected return on the S&P 500 Index using publicly available data: S&P's published dividend yield and five-year projected growth rate for the entire S&P 500 Index. As shown in Exhibit AEB-5, pages 5-11, based on Value Line's five-year growth rate for the S&P 500 of 12.50 percent and dividend yield of 1.41 percent, the expected return on the S&P 500 Index is 14.00 percent. As a result, the implied market risk premium over the current 30-day average of the 30-year U.S. Treasury bond yield, and over projected yields on the 30-year U.S. Treasury bond, ranges from 10.50 percent to 11.80 percent.

Q. How does the current expected market return of 14.00 percent compare to historical observed market returns?

A. Given the range of annual equity returns that have been observed over the past century (shown in Figure 7 below), a current expected return of 14.00 is not unreasonable. In 48 out of the past 95 years (or 51 percent of observations), the realized equity return was at least 14.00 or greater.

Figure 7: Realized U.S. equity market returns 1926-2020[71]



Q. Have other regulators endorsed the use of a forward-looking market risk premium?

A. Yes. The FERC has supported the forward-looking market risk premium. In Opinion No. 569 and 569-A, the FERC specifically endorsed a method that is similar to the method I have used to calculate the forward-looking market risk premium (i.e., applying a Constant Growth DCF analysis to the S&P 500 and using the 30-year Treasury bond yields).[72]

The FERC rejected arguments to use other methodologies including a two-step DCF analysis for estimating the expected market return and found that the use of a

71 Depicts total annual returns on large company stocks, as reported in the 2020 Duff & Phelps SBBI Yearbook.

72 Opinion No. 569, 119 FERC ¶ 61,129 at P 260.

long-term growth rate estimate in a two-step DCF analysis does not apply to the DCF analysis of a broad representative market index with a wide variety of companies that is regularly updated to include new companies for the purpose of determining the required return on the market.[73]

> The purpose of the DCF analysis in the CAPM is to determine the "required return on the overall market" that will be used to determine the market risk premium.[74] In Opinion No. 569, the Commission stated that, while it may be unreasonable to expect an individual company to sustain high short-term growth rates in perpetuity, the same cannot be said for a broad representative market index that is regularly updated to include new companies (i.e., a portfolio of companies behaves differently than an individual company).[75] Therefore, we exclude from consideration any two-step expected market return analyses.[76]

Q. Did you consider another form of the CAPM in your analysis?

A. Yes. I have also considered the results of an Empirical CAPM ("ECAPM")[77] in estimating the cost of equity for CenterPoint Energy Arkla. The ECAPM calculates the product of the adjusted Beta coefficient and the market risk premium and applies a weight of 75 percent to that result. The model then applies a 25 percent weight to the market risk premium, without any effect from the Beta coefficient. The results of the two calculations are summed, along with the risk-free rate, to produce the ECAPM result, as noted in Equation [5] below:

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73 Opinion No. 569, 169 FERC ¶ 61,129 at PP 85, 265. *See also* Docket No. ER-18-1639-000, Order Setting Base ROE, July 15, 2021, at P 56.

74 *See* Opinion No. 531-B, 150 FERC ¶ 61,165 at P 113.

75 Opinion No. 569, 169 FERC ¶ 61,129 at P 266.

76 FERC Docket No. ER18-1639-000, Order Setting Base ROE, July 15, 2021, at PP 67, 68.

77 *See e.g.*, Roger A. Morin, New Regulatory Finance, Public Utilities Reports, Inc., 2006, at 189.

$$k_e = r_f + 0.75\beta(r_m - r_f) + 0.25(r_m - r_f) \quad [5]$$

Where:

k_e = the required market ROE;

β = Adjusted Beta coefficient of an individual security;

r_f = the risk-free rate of return; and

r_m = the required return on the market as a whole.

In essence, the Empirical form of the CAPM addresses the tendency of the "traditional" CAPM to underestimate the cost of equity for companies with low Beta coefficients such as regulated utilities. In that regard, the ECAPM is not redundant to the use of adjusted Betas; rather, it recognizes the results of academic research indicating that the risk-return relationship is different (in essence, flatter) than estimated by the CAPM, and that the CAPM underestimates the "alpha," or the constant return term.[78]

As with the CAPM, my application of the ECAPM uses the forward-looking market risk premium estimates, the three yields on 30-year Treasury securities noted earlier as the risk-free rate, and the Bloomberg and Value Line Beta coefficients.

[78] *Id.*, at 191.

Q. What are the results of your CAPM analyses?

A. As shown in Figure 8 (see also Exhibit AEB-5), my traditional CAPM analysis produces a range of returns from 10.76 percent to 12.88 percent for the proxy group. The ECAPM analysis results range from 11.57 percent to 13.16 percent for the proxy group. Thus, the range established for the proxy group by the traditional CAPM and the ECAPM is 10.76 percent to 13.16 percent with a mean of 12.09 percent.

Figure 8: CAPM Results

	Current Risk-Free Rate (2.20%)	Q4 2021–Q4 2022 Projected Risk-Free Rate (2.62%)	2023-2027 Projected Risk-Free Rate (3.50%)
CAPM			
Value Line Beta	12.74%	12.79%	12.88%
Bloomberg Beta	11.62%	11.71%	11.88%
Long-Term Avg. Beta	10.76%	10.88%	11.12%
ECAPM			
Value Line Beta	13.06%	13.09%	13.16%
Bloomberg Beta	12.21%	12.28%	12.41%
Long-Term Avg. Beta	11.57%	11.66%	11.84%

E. Bond Yield Plus Risk Premium Analysis

Q. Please describe the Bond Yield Plus Risk Premium approach.

A. In general terms, this approach is based on the fundamental principle that equity investors bear the residual risk associated with equity ownership and therefore require a premium over the return they would have earned as a bondholder. That is, because returns to equity holders have greater risk than returns to bondholders, equity investors must be compensated to bear that risk. Risk premium approaches,

therefore, estimate the cost of equity as the sum of the equity risk premium and the yield on a particular class of bonds. In my analysis, I used actual authorized returns for natural gas utility companies as the historical measure of the cost of equity to determine the risk premium.

Q. Are there other considerations that should be addressed in conducting this analysis?

A. Yes. It is important to recognize both academic literature and market evidence indicating that the equity risk premium (as used in this approach) is inversely related to the level of interest rates. That is, as interest rates increase (decrease), the equity risk premium decreases (increases). Consequently, it is important to develop an analysis that: (1) reflects the inverse relationship between interest rates and the equity risk premium; and (2) relies on recent and expected market conditions. Such an analysis can be developed based on a regression of the risk premium as a function of U.S. Treasury bond yields. If we let authorized ROEs for natural gas utilities serve as the measure of required equity returns and define the yield on the long-term U.S. Treasury bond as the relevant measure of interest rates, the risk premium simply would be the difference between those two points.[79]

[79] *See e.g.*, S. Keith Berry, *Interest Rate Risk and Utility Risk Premia during 1982-93*, Managerial and Decision Economics, Vol. 19, No. 2 (March, 1998), in which the author used a methodology similar to the regression approach described below, including using allowed ROEs as the relevant data source, and came to similar conclusions regarding the inverse relationship between risk premia and interest rates. *See also* Robert S. Harris, *Using Analysts' Growth Forecasts to Estimate Shareholders Required Rates of Return*, Financial Management, Spring 1986, at 66.

Q. Is the Bond Yield Plus Risk Premium analysis relevant to investors?

A. Yes. Investors are aware of ROE awards in other jurisdictions, and they consider those awards as a benchmark for a reasonable level of equity returns for utilities of comparable risk operating in other jurisdictions. Because my Bond Yield Plus Risk Premium analysis is based on authorized ROEs for utility companies relative to corresponding Treasury yields, it provides relevant information to assess the return expectations of investors.

Q. What did your Bond Yield Plus Risk Premium analysis reveal?

A. As shown in Figure 9 below, from 1992 through June 2021, there was a strong negative relationship between risk premia and interest rates. To estimate that relationship, I conducted a regression analysis using the following equation:

$$RP = a + b(T) \quad [6]$$

Where:

RP = Risk Premium (difference between authorized ROEs for natural gas utilities and the yield on 30-year U.S. Treasury bonds)

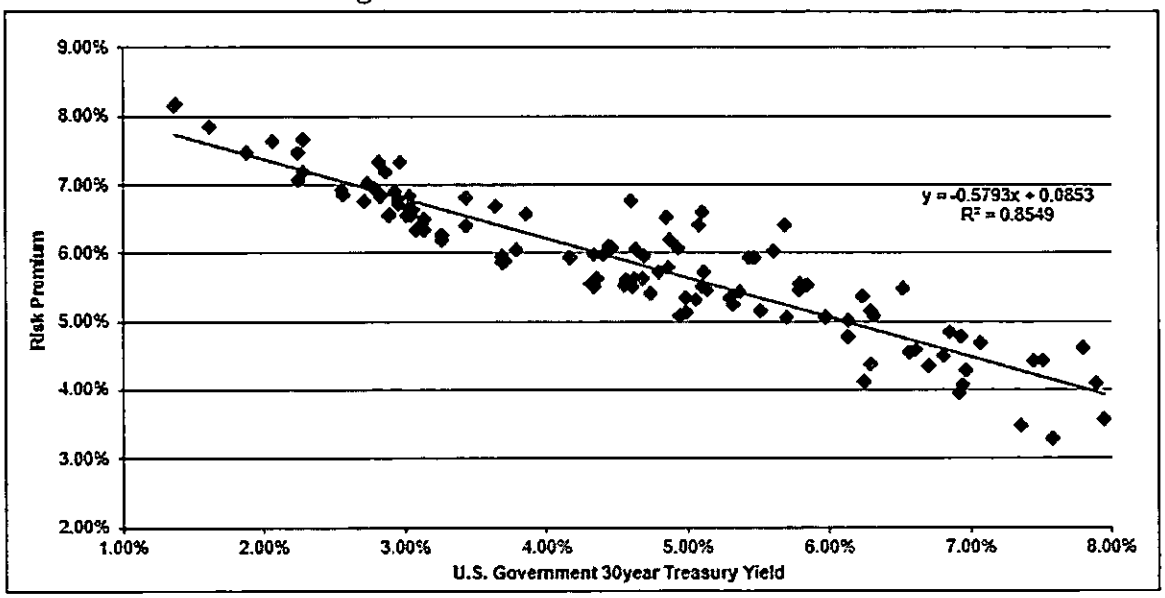
a = intercept term

b = slope term

T = 30-year U.S. Treasury bond yield

Data regarding allowed ROEs were derived from 689 natural gas utility rate cases from January 1992 through June 2021 as reported by Regulatory Research Associates ("RRA").[80] This equation's coefficients were statistically significant at the 99.00 percent level.

Figure 9: Risk Premium Results



As shown on Exhibit AEB-6, based on the current 30-day average of the 30-year U.S. Treasury bond yield (i.e., 2.20 percent), the risk premium would be 7.25 percent, resulting in an estimated ROE of 9.46 percent. Based on the near-term (Q4 2021 – Q4 2022) projections of the 30-year U.S. Treasury bond yield (i.e., 2.62 percent), the risk premium would be 7.01 percent, resulting in an estimated ROE of 9.63 percent. Based on longer-term (2023-2027) projections of the 30-year U.S.

[80] This analysis began with a total of 1,100 cases and was screened to eliminate limited issue rider cases, transmission-only cases, and cases that were silent with respect to the authorized ROE. After applying those screening criteria, the analysis was based on data for 689 cases.

Treasury bond yield (i.e., 3.50 percent), the risk premium would be 6.50 percent, resulting in an estimated ROE of 10.00 percent.

Q. How did the results of the Bond Yield Risk Premium inform your recommended ROE for CenterPoint Energy Arkla?

A. I have considered the results of the Bond Yield Risk Premium analysis in setting my recommended ROE for CenterPoint Energy Arkla. The results of my Bond Yield Risk Premium analysis support the reasonableness of Company's current authorized midpoint ROE of 9.95 percent. Also, as noted above, investors consider the ROE award of a company when assessing the risk of that company as compared to utilities of comparable risk operating in other jurisdictions. The risk premium analysis takes into account this comparison by estimating the return expectations of investors based on the current and past ROE awards of natural gas utilities across the U.S.

VII. REGULATORY AND BUSINESS RISKS

Q. Do the mean DCF, CAPM, ECAPM, and Risk Premium results for the proxy group, taken alone, provide an appropriate estimate of the cost of equity for CenterPoint Energy Arkla?

A. No. These results provide only a range of the appropriate estimate of the Company's cost of equity. There are several additional factors that must be taken into consideration when determining where the Company's cost of equity falls

within the range of results. These factors, which are discussed below, should be considered with respect to their overall effect on the Company's risk profile.

F. Small Size Risk

Q. Please explain the risk associated with small size.

A. Both the financial and academic communities have long accepted the proposition that the cost of equity for small firms is subject to a "size effect." While empirical evidence of the size effect often is based on studies of industries other than regulated utilities, utility analysts also have noted the risk associated with small market capitalizations. Specifically, an analyst for Ibbotson Associates noted:

> For small utilities, investors face additional obstacles, such as a smaller customer base, limited financial resources, and a lack of diversification across customers, energy sources, and geography. These obstacles imply a higher investor return.[81]

Q. How does the smaller size of a utility affect its business risk?

A. In general, smaller companies are less able to withstand adverse events that affect their revenues and expenses. The impact of weather variability, the loss of large customers to bypass opportunities, or the destruction of demand as a result of general macroeconomic conditions or fuel price volatility will have a proportionately greater impact on the earnings and cash flow volatility of smaller utilities. Similarly, capital expenditures for non-revenue producing investments, such as system maintenance and replacements, will put proportionately greater

[81] Michael Annin, Equity and the Small-Stock Effect, Public Utilities Fortnightly, October 15, 1995.

pressure on customer costs, potentially leading to customer attrition or demand reduction. Taken together, these risks affect the return required by investors for smaller companies.

Q. How does CenterPoint Energy Arkla's business in Louisiana compare in size to the proxy group companies?

A. As noted previously, CenterPoint Energy Arkla serves approximately 131,000 residential, commercial, industrial, and transportation customers in ten parishes in Louisiana and, as of year-end 2020, had net utility natural gas plant in Louisiana of approximately $170.76 million.[82] CenterPoint Energy Arkla's operations in Louisiana are substantially smaller than the mean for the proxy group companies in terms of market capitalization. Exhibit AEB-7 provides the actual market capitalization for the proxy group companies and estimates the implied market capitalization for CenterPoint Energy Arkla (i.e., the implied market capitalization if its natural gas operations in Louisiana were a stand-alone publicly-traded entity). To estimate the size of the Company's market capitalization relative to the proxy group, I multiplied CenterPoint Energy Arkla's 2020 net utility plant in service of approximately $170.76 million by its requested common equity ratio of 52 percent to calculate an implied equity component of $88.8 million. I then applied the median market-to-book ratio for the proxy group of 1.75 to CenterPoint Energy Arkla's implied common equity balance and arrived at an implied market

[82] Company provided data.

capitalization of approximately $155.12 million, or 3.93 percent of the median market capitalization for the proxy group.

Q. How did you estimate the size premium for CenterPoint Energy Arkla?

A. Given this relative size information, it is possible to estimate the impact of size on the ROE for CenterPoint Energy Arkla using Duff & Phelps data that estimates the stock risk premia based on the size of a company's market capitalization. As shown in Exhibit AEB-7, the median market capitalization of the proxy group of approximately $3.94 billion falls in the 4th decile of the Duff & Phelps market capitalization data and corresponds to a size premium of 0.75 percent (i.e., 75 basis points). CenterPoint Energy Arkla's implied market capitalization of approximately $155.12 million falls within the tenth decile, which comprises market capitalization levels up to $189.83 million and corresponds to a size premium of 5.01 percent (i.e., 501 basis points). The difference between those size premia is 426 basis points (i.e., 5.01 percent minus 0.75 percent).

Q. Are utility companies included in the size premium study conducted by Duff & Phelps?

A. Yes, they are. As shown in Exhibit 7.2 of Duff & Phelps' 2019 Valuation Handbook, OGE Energy Corp. had the largest market capitalization of the

companies contained in the fourth decile.[83] Therefore, Duff & Phelps includes utility companies in its size risk premium study.

Q. Is the size premium applicable to companies in regulated industries such as natural gas utilities?

A. Yes, it is. In the article "Cost of Equity for Energy Utilities: Beyond the CAPM",[84] Stéphane Chretien and Frank Coggins studied the CAPM and its ability to estimate the risk premium for the utility industry in particular subgroups of utilities. One of the subgroups was a group of natural gas distribution companies that contained many of the same natural gas distribution companies included in my proxy group.[85] The article considered the CAPM, the Fama-French three-factor model, and a model similar to the ECAPM that I considered above. In the article, the Fama-French three-factor model explicitly included an adjustment to the CAPM for risk associated with size. As Chretien and Coggins show, the Beta coefficient on the size variable for the U.S. natural gas utility group was positive and statistically significant indicating that small size risk was relevant for regulated natural gas

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83 Source: Duff & Phelps, Valuation Handbook: Guide to Cost of Capital, 2019, Exhibit 7.2.

84 Chrétien, Stéphane, and Frank Coggins. "Cost Of Equity For Energy Utilities: Beyond The CAPM." *Energy Studies Review*, vol. 18, no. 2, 2011, doi:10.15173/esr.v18i2.531.

85 The U.S. natural gas utility group included: AGL Resources Inc., Atmos Energy Corp., Laclede Group, New Jersey Resources Corp., Northwest Natural Gas Co., Piedmont Natural Gas Co., South Jersey Industries, Southwest Gas Corp. and WGL Holdings Inc.

utilities.[86] This demonstrates that the traditional CAPM model does not account for risk associated with small size.

Q. Have regulators in other jurisdictions made a specific risk adjustment to the ROE results based on a company's small size?

A. Yes, they have. In Order No. 15, the Regulatory Commission of Alaska ("RCA") concluded that Alaska Electric Light and Power Company ("AEL&P") was riskier than the proxy group companies due to small size as well as other business risks. The RCA did "not believe that adopting the upper end of the range of ROE analyses in this case, without an explicit adjustment, would adequately compensate AEL&P for its greater risk." [87] Thus, the RCA awarded AEL&P an ROE of 12.875 percent which was 108 basis points above the highest return on equity estimate from any model presented in the case.[88] Similarly, in Order No. 19, the RCA noted that small size as well as other business risks such as structural regulatory lag, weather risk, alternative rate mechanisms, gas supply risk, geographic isolation and

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86 Chrétien, Stéphane, and Frank Coggins. "Cost Of Equity For Energy Utilities: Beyond The CAPM." *Energy Studies Review*, vol. 18, no. 2, 2011, doi:10.15173/esr.v18i2.531, at 31.

87 Docket No. U-10-29, In the Matter of the Revenue Requirement and Cost of Service Study Designated as TA381-1 Filed by Alaska Electric Light and Power Company, Order entered September 2, 2011 (Order No. 15), at 37.

88 *Id.*, at 32 and 37.

economic conditions increased the risk of ENSTAR Natural Gas Company.[89] Ultimately, the RCA concluded that:

> Although we agree that the risk factors identified by ENSTAR increase its risk, we do not attempt to quantify the amount of that increase. Rather, we take the factors into consideration when evaluating the remainder of the record and the recommendations presented by the parties. After applying our reasoned judgment to the record, we find that 11.875% represents a fair ROE for ENSTAR.[90]

Additionally, in Docket No. E017/GR-15-1033 for Otter Tail Power Company ("Otter Tail"), the Minnesota Public Utilities Commission ("Minnesota PUC") selected an ROE above the mean DCF results, as a result of multiple factors including Otter Tail's small size. The Minnesota PUC stated:

> The record in this case establishes a compelling basis for selecting an ROE above the mean average within the DCF range, given Otter Tail's unique characteristics and circumstances relative to other utilities in the proxy group. These factors include the company's relatively smaller size, geographically diffuse customer base, and the scope of the Company's planned infrastructure investments.[91]

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89 Docket No. U-16-066, In the Matter of the Tariff Revision Designated as TA285-4 Filed by ENSTAR Natural Gas Company, A Division of SEMCO Energy, Inc., Order entered September 22, 2017 (Order No. 19), at 50-52.

90 *Id.*

91 Order in Docket No. E017/GR-15-1033, In the Matter of the Application of Otter Tail Power Company for Authority to Increase Rates for Electric Service in the State of Minnesota (August 16, 2016), at 55.

Q. How have you considered the smaller size of CenterPoint Energy Arkla in your recommendation?

A. While I have estimated the effect of CenterPoint Energy Arkla's small size on the ROE, I am not proposing a specific adjustment for this risk factor. Rather, I believe it is important to consider the small size of CenterPoint Energy Arkla's natural gas operations in Louisiana in the determination of where, within the range of analytical results, the Company's required ROE falls. Therefore, the additional risk associated with small size indicates that the Company's ROE should be established above the mean results for the proxy group companies.

G. Capital Expenditures

Q. Please summarize the Company's capital expenditure requirements.

A. The Company's current projections for 2022 through 2026 include approximately $219.41 million in capital investments for the period.[92] Based on the Company's net utility plant of approximately $170.76 million as of December 31, 2020,[93] the $219.41 million of anticipated capital expenditures are approximately 128.5 percent of CenterPoint Energy Arkla's net utility plant as of December 31, 2020.

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92 Data provided by CenterPoint Energy Arkla for planned capital expenditures for the years 2022-2026.

93 Data provided by CenterPoint Energy Arkla.

Q. How is the Company's risk profile affected by its substantial capital expenditure requirements?

A. As with any utility faced with substantial capital expenditure requirements, the Company's risk profile may be adversely affected in two significant and related ways: (1) the heightened level of investment increases the risk of under-recovery or delayed recovery of the invested capital; and (2) an inadequate return would put downward pressure on key credit metrics.

Q. Do credit rating agencies recognize the risks associated with elevated levels of capital expenditures?

A. Yes, they do. From a credit perspective, the additional pressure on cash flows associated with high levels of capital expenditures exerts corresponding pressure on credit metrics and, therefore, credit ratings. To that point, S&P explains the importance of regulatory support for large capital projects:

> When applicable, a jurisdiction's willingness to support large capital projects with cash during construction is an important aspect of our analysis. This is especially true when the project represents a major addition to rate base and entails long lead times and technological risks that make it susceptible to construction delays. Broad support for all capital spending is the most credit-sustaining. Support for only specific types of capital spending, such as specific environmental projects or system integrity plans, is less so, but still favorable for creditors. Allowance of a cash return on construction work-in-progress or similar ratemaking methods historically were extraordinary measures for use in unusual circumstances, but when construction costs are rising, cash flow support could be crucial to maintain credit quality through the spending program. Even more favorable are those jurisdictions that

present an opportunity for a higher return on capital projects as an incentive to investors.[94]

Therefore, to the extent that the ROE bandwidth parameters and midpoint of CenterPoint Energy Arkla's renewed RSP and resuling rates do not permit the opportunity to recover its capital investments on a regular basis, the Company will face increased recovery risk and thus increased pressure on its credit metrics.

Q. How do CenterPoint Energy Arkla's capital expenditure requirements compare to those of the proxy group companies?

A. As shown in CONFIDENTIAL Exhibit AEB-8, I calculated the ratio of expected capital expenditures to net utility plant for CenterPoint Energy Arkla and each of the companies in the proxy group by dividing each company's projected capital expenditures for the period from 2022-2026 by its total net utility plant as of December 31, 2020. As shown in CONFIDENTIAL Exhibit AEB-8 (*see* also Figure below), CenterPoint Energy Arkla's ratio of capital expenditures as a percentage of net utility plant is more than 128 percent, which is approximately 2.13 times the median for the proxy group companies of 60.41 percent. This result indicates significantly greater risk relative to the companies in the proxy group.

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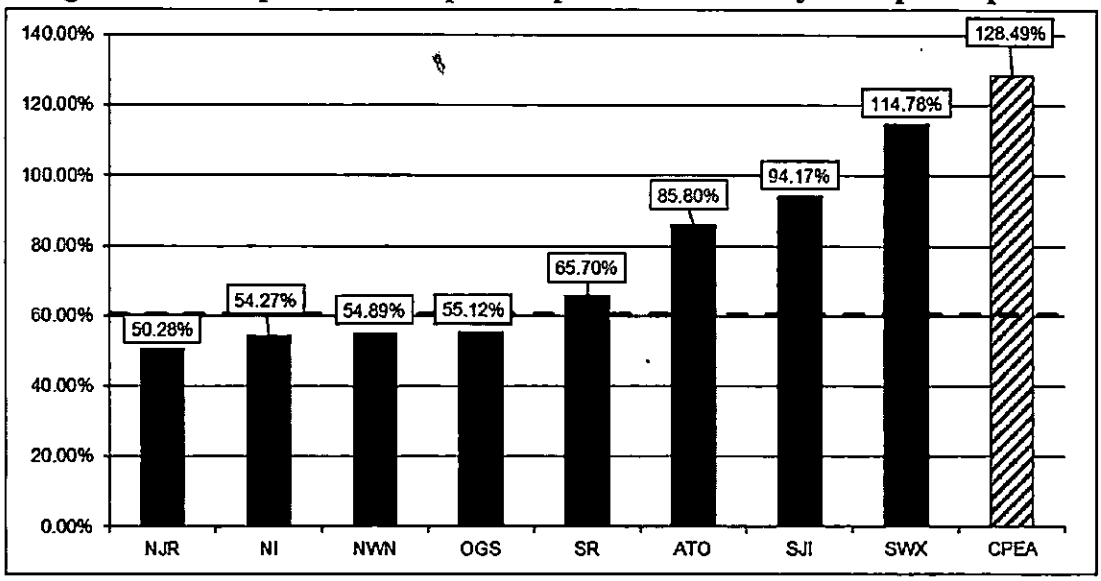
[94] S&P Global Ratings, "Assessing U.S. Investor-Owned Utility Regulatory Environments," August 10, 2016, at 7.

Figure 10: Comparison of Capital Expenditures – Proxy Group Companies



Q. Are mechanisms available to the electric and natural gas utilities in Louisiana that enable timely recovery of incremental capital investment?

A. Yes. Many Louisiana electric and natural gas utilities have been approved for and implemented formula rate plans, such as the Company's RSP. Formula rate plans enable utilities to adjust rates annually if earnings are outside of an approved bandwidth (typically 100 basis points) and typically reflect incremental capital additions.

Q. Does CenterPoint Energy Arkla have a comprehensive mechanism that includes recovery of capital additions between rate cases?

A. Yes. The Company's RSP allows it to adjust rates annually if earnings reflecting total cost of service, including incremental capital investment, are outside of the approved ROE bandwidth of 9.45 percent to 10.45 percent. As shown in Exhibit AEB-9, approximately 79 percent of the proxy group utilities recover costs through

capital tracking mechanisms, which indicates that most of the proxy group companies consider the mechanisms available to them to be effective tools to recover a return of, and on, incremental capital costs. Further, approximately 29 percent of the proxy group companies have formula rate plans, which allow for periodic adjustments to rates. Considering both types of these mechanisms, CenterPoint Energy Arkla has similar risk from a capital cost recovery standpoint as the proxy group companies.

Q. What are your conclusions regarding the effect of the Company's capital spending requirements on its risk profile and cost of capital?

A. The Company's capital expenditure requirements as a percentage of net utility plant are significant and will continue over the next few years. As such, the continuation of the RSP is critical to the Company's ability to recover its capital costs in a timely basis. Because the majority of the proxy companies have a comprehensive capital tracking mechanism to recover their projected capital expenditures, and several have formula rate plans, the Company's RSP renders it comparable in risk to the proxy group.

H. Severe Weather Risk

Q. Please describe the risk associated with severe weather activity in the Company's service territory.

A. CenterPoint Energy Arkla faces the risk of sudden, unexpected damage from severe storms due to the geographic location of its operations. The propensity for

hurricanes and severe weather in the Company's operating area renders it a high-risk region for incurring weather-related infrastructure repair costs and service disruptions. In addition to the need to fund repair costs, severe weather causes the Company to incur unplanned expenses (such as labor costs that may not be recovered in existing rates or unanticipated increases in fuel and commodity prices) and results in lower sales. Together, these effects can reduce the Company's revenue and put strain on its operating cash flow.

As capital-intensive operations, utilities often are cash flow neutral or negative entities, requiring access to short-term credit markets to fund day-to-day operations. In the event of significant storm damage, the Company may not have a reserve needed to fund restoration activities and its internal cash flow may not be sufficient to fund ongoing restoration activities. In that case, the need to efficiently access short-term capital would be heightened. That access will depend on a strong financial profile. In short, regulatory support for storm cost recovery is important to maintain the Company's financial integrity.

Q. Have the credit rating agencies commented on weather related risks?

A. Yes. A November 8, 2018 article by S&P stressed the importance of regulatory mechanisms as one means of mitigating risk due to adverse weather conditions, noting "[w]ithout the appropriate regulatory compact and other risk mitigation, the

financial aftermath of these events could be devastating to any individual utility, adding another layer of unpredictability that utilities must effectively manage."[95]

Q. What are your conclusions regarding the risk associated with severe weather?

A. The Company's operations are in an area prone to hurricanes and severe weather events. As such, a strong financial profile that enables access to capital on reasonable terms, as well as a supportive regulatory environment that provides timely recovery of costs is critical to the financial health of the Company. To the extent that the proxy companies operate in areas that are less prone to significant adverse weather events, a higher ROE for CenterPoint Energy Arkla is required.

I. Regulatory Risk

Q. Please explain how the regulatory environment affects investors' risk assessments.

A. The ratemaking process is premised on the principle that, for investors and companies to commit the capital needed to provide safe and reliable utility service, the subject utility must have the opportunity to recover the return of, and the market-required return on, invested capital. Regulatory authorities recognize that because utility operations are capital intensive, regulatory decisions should enable the utility to attract capital at reasonable terms when needed and under various market conditions; doing so balances the long-term interests of investors and customers. Utilities must finance their operations and require the opportunity to

[95] S&P Global Ratings, *Can US. Utilities Weather The Storm?* November 8, 2018, at 1 [clarification added].

earn a reasonable return on their invested capital to maintain their financial profiles. CenterPoint Energy Arkla is no exception. In that respect, the regulatory environment is one of the most important factors considered in both debt and equity investors' risk assessments.

From the perspective of debt investors, the authorized return should enable the utility to generate the cash flow needed to meet its near-term financial obligations, make the capital investments needed to maintain and expand its systems, and maintain the necessary levels of liquidity to fund unexpected events. This financial liquidity must be derived not only from internally generated funds, but also by efficient access to capital markets. Moreover, because fixed income investors have many investment alternatives, even within a given market sector, the utility's financial profile must be adequate on a relative basis to ensure its ability to attract capital under a variety of economic and financial market conditions.

Equity investors require that the authorized return be adequate to provide a risk-comparable return on the equity portion of the utility's capital investments. Because equity investors are the residual claimants on the utility's cash flows (which is to say that the equity return is subordinate to interest payments), they are particularly concerned with the strength of regulatory support and its effect on future cash flows.

Q. Please explain how credit rating agencies consider regulatory risk in establishing a company's credit rating.

A. Both S&P and Moody's consider the overall regulatory framework in establishing credit ratings. Moody's establishes credit ratings based on four key factors: (1) regulatory framework; (2) the ability to recover costs and earn returns; (3) diversification; and (4) financial strength, liquidity and key financial metrics. Of these criteria, regulatory framework and the ability to recover costs and earn returns are each given a broad rating factor of 25 percent. Therefore, Moody's assigns regulatory risk a 50 percent weighting in the overall assessment of business and financial risk for regulated utilities.[96]

S&P also identifies the regulatory framework as an important factor in credit ratings for regulated utilities, stating: "One significant aspect of regulatory risk that influences credit quality is the regulatory environment in the jurisdictions in which a utility operates."[97] S&P identifies four specific factors that it uses to assess the credit implications of the regulatory jurisdictions of investor-owned regulated utilities: (1) regulatory stability; (2) tariff-setting procedures and design; (3) financial stability; and (4) regulatory independence and insulation.[98]

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96 Moody's Investors Service, Rating Methodology: Regulated Electric and Gas Utilities, June 23, 2017, at 4.

97 Standard & Poor's Global Ratings, Ratings Direct, U.S. and Canadian Regulatory Jurisdictions Support Utilities' Credit Quality—But Some More So Than Others, June 25, 2018, at 2.

98 *Id.*, at 1.

Q. How does the regulatory environment in which a utility operates affect its access to and cost of capital?

A. The regulatory environment can significantly affect both the access to, and cost of capital in several ways. First, the proportion and cost of debt capital available to utility companies are influenced by the rating agencies' assessment of the regulatory environment. As noted by Moody's, "[f]or rate regulated utilities, which typically operate as a monopoly, the regulatory environment and how the utility adapts to that environment are the most important credit considerations."[99] Moody's further highlighted the relevance of a stable and predictable regulatory environment to a utility's credit quality, noting: "[b]roadly speaking, the Regulatory Framework is the foundation for how all the decisions that affect utilities are made (including the setting of rates), as well as the predictability and consistency of decision-making provided by that foundation."[100]

Q. Have you analyzed the regulatory framework in Louisiana relative to the jurisdictions in which the companies in your proxy group operate?

A. Yes. I have evaluated the regulatory framework in Louisiana on four factors that are important in terms of providing a regulated utility an opportunity to earn its authorized ROE. These are: (1) test year convention (i.e., forecast vs. historical); (2) method for determining rate base (i.e., average vs. year-end); (3) use of revenue

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99 Moody's Investors Service, Rating Methodology: Regulated Electric and Gas Utilities, June 23, 2017, at 6.

100 *Id.*

decoupling mechanisms or other clauses that mitigate volumetric risk; and (4) prevalence of capital cost recovery between rate cases. The results of this regulatory risk assessment are shown in Exhibit AEB-9 and are summarized below.

Test year convention: CenterPoint Energy Arkla uses a historical test year in Louisiana. As shown in Exhibit AEB-9, approximately 57 percent of the companies in the proxy group use forecasted or partially forecasted test years. All else equal, the use of a historical test year tends to increase regulatory lag, increasing regulatory risk.

Rate Base: The majority of the Company's rate base in Louisiana is determined based on a 13-month average original cost, while approximately 61 percent of the operating companies held by proxy group are allowed to use year-end rate base, meaning that the rate base includes capital additions that occurred in the second half of the test year and is more reflective of net utility plant going forward. The combination of an average rate base methodology and a historical test year can contribute significantly to regulatory lag. As shown in Exhibit AEB-9, only two of 28 proxy group operating companies employ both an average rate base and historical test year methodology. Therefore, I conclude the Company has greater risk than the proxy group on average based on its use of both a 13-month average rate base and a historical test year.