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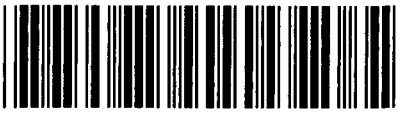

Item Number: 513

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**SOAH DOCKET NO. 473-19-3864**
**PUC DOCKET NO. 49421**

| | | |
|---|---|---|
| **APPLICATION OF CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC FOR AUTHORITY TO CHANGE RATES** | **§ § §** | **BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS** |


# DIRECT TESTIMONY OF

# JORGE ORDONEZ

## RATE REGULATION DIVISION

## PUBLIC UTILITY COMMISSION OF TEXAS

## JUNE 12, 2019

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## I. PROFESSIONAL QUALIFICATIONS

**Q. Please state your name and business address.**

A. My name is Jorge Ordonez. My business address is 1701 N. Congress Avenue, Austin, TX 78711-3326.

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

A. I am employed by the Public Utility Commission of Texas (Commission) as a Financial Analyst in the Rate Regulation Division.

**Q. What are your principal responsibilities at the Commission?**

A. I perform financial and economic analyses of utilities under the jurisdiction of the Commission. My duties include determining compliance with Commission requirements. I prepare and present testimony as an expert witness on issues related to rate of return, rates, pricing, tariff provisions, cost allocation, and rate design in docketed proceedings before the Commission and the State Office of Administrative Hearings (SOAH).

**Q. Please describe your educational background and professional experience.**

A. In 1998, I graduated from San Antonio Abad University in Peru with a Bachelor of Science in Mechanical Engineering. In 2005, as a Fulbright Scholar, I graduated with a Master in Business Administration, with a concentration in Finance, from Willamette University in Salem, Oregon. My professional experience includes 18 years working within the energy industry, energy regulation, and academia. From 1999 to 2008, I worked for a power generation company in Peru in various roles such as Shift Operations Engineer, Manager of Economic Planning, and Vice-President of Power Operations and Marketing. From 2009 to 2016, I worked as a Senior Financial Economist for the Public Utility Commission of Oregon. From 2017 to 2018, I taught *Accounting for Decision Makers* and *Introduction*

*to Finance* to undergraduate students of business administration as a professor at the Sichuan International Studies University in Chongqing, China. I have been employed at the Commission since August 2018.

**Q. Have you previously testified before the Commission or SOAH?**

A. Yes. Attachment JO-10 contains a list of testimony and memoranda, in lieu of testimony, that I have filed with the Commission.

## II. PURPOSE AND SCOPE OF TESTIMONY

**Q. What is the purpose of your testimony in this proceeding?**

A. The purpose of my testimony in this proceeding is twofold: (1) to recommend a fair rate of return on invested capital for CenterPoint Energy Houston Electric, LLC ("CEHE" or "the Company"), and (2) to recommend the addition of carrying costs to the system restoration costs associated with Hurricane Harvey (Hurricane Harvey carrying costs).

My recommendation for CEHE's fair rate of return on investment capital is based on an estimate of the cost of equity and an assessment of the Company-proposed cost of debt and capital structure. I use my recommended cost of equity, cost of debt, and capital structure to calculate my recommended return on invested capital for the Company.

**Q. What issues identified in the Preliminary Order does your testimony address?**

A. My testimony addresses the following issues from the Commission's Preliminary Order in this proceeding filed on May 9, 2019:

- Issue No. 7: What is the appropriate debt-to-equity capital structure for CenterPoint?;
- Issue No. 8: What is the appropriate overall rate of return, return on equity, and cost of debt for CenterPoint? When answering this issue, please address how

the factors specified in Public Utility Regulatory Act[1] (PURA) § 36.052 and 16 TAC § 25.231(c)(1) should affect CenterPoint's rate of return; and

- Issue No. 55: What is the appropriate rate of interest and calculation period for any carrying costs on CenterPoint's claimed hurricane restoration costs?[2]

**Q. What documents and data did you review in arriving at the conclusions and recommendations contained in your testimony?**

A. I reviewed the *Application of CenterPoint Energy Houston Electric, LLC for Authority to Change Rates* ("Application") and CEHE's responses to requests for information ("RFIs") during the discovery period. I also considered and analyzed data from financial resources such as Moody's Investors Service ("Moody's"), Fitch Ratings ("Fitch"), Standard and Poor's Global Ratings ("S&P"), Value Line Investment Survey ("Value Line"), Zacks Investment Service ("Zacks"), and S&P Global Market Intelligence (formerly SNL Financial).

**Q. What standards are you applying in presenting the conclusions and recommendations in your testimony?**

A. I am applying the following standards:

- PURA § 36.051, which states:

> In establishing an electric utility's rates, the regulatory authority shall establish the utility's overall revenues at an amount that will permit the utility a reasonable opportunity to earn a reasonable return on the utility's invested capital used and useful in providing service to the public in excess of the utility's reasonable and necessary operating expenses.

[1] Public Utility Regulatory Act, Tex. Util. Code Ann. §§ 11.001-58.302 (West 2016 & Supp. 2017), §§ 59.001-66.016 (West 2007 & Supp. 2017) (PURA).

[2] Preliminary Order at 3, 10 (May 8, 2019).

- PURA § 36.052, which states:

  In establishing a reasonable return on invested capital, the regulatory authority shall consider applicable factors, including:
  (1) the efforts and achievements of the utility in conserving resources;
  (2) the quality of the utility's services;
  (3) the efficiency of the utility's operations; and
  (4) the quality of the utility's management.

- 16 Texas Administrative Code ("TAC") § 25.231(c)(1) in its entirety.

- Two decisions of the U.S. Supreme Court:

  (1) Bluefield Water Works & Improvement Co. v. Public Service Commission of West Virginia ("*Bluefield*");[3] and
  (2) Federal Power Commission v. Hope Natural Gas Co. ("*Hope*").[4]

- PURA § 36.402 (b), which states:

  System restoration costs shall include carrying costs at the electric utility's weighted average cost of capital as last approved by the Commission in a general rate proceeding from the date on which the system restoration costs were incurred . . . .;

## III. SUMMARY OF RECOMMENDATIONS

**Q. Please summarize your recommendations in this docket.**

A. My recommendations are as follows:

(1) The cost of equity for CEHE ranges from 8.34% to 9.79%. My recommended point estimate for the return on equity is 9.45%, the midpoint of the upper half of the range.

(2) CEHE's cost of debt is 4.38%. This is the actual cost of debt for CEHE for the test year, and it is the one the Company requests in its Application.[5]

[3] *Bluefield Water Works & Imrovement. Co. v. Pub. Serv. Comm'n of W. Va.*, 262 U.S. 679, 683 (1923).

[4] *Fed. Power Comm'n v. Hope Nat. Gas Co.*, 320 U.S. 591, 604 (1944).

[5] Direct Testimony of Robert B. McRae at 37; and Application, Schedule II-C-2.4a at 1.

(3) The appropriate capital structure for CEHE for rate-setting purposes consists of 60% long-term debt and 40% common equity. This capital structure is consistent with the level of capital structure for transmission and distribution utilities (TDUs) established by the Commission's ruling in Docket No. 22344.[6]

(4) The weighted average cost of capital and recommended overall rate of return for the Company is 6.41%. Attachment JO-1 presents the calculation of this value based on the recommended capital structure and the component costs of capital.

(5) CEHE should be allowed to include in rates $8,742,497 of Hurricane Harvey carrying costs.

## IV. BACKGROUND

**Q. Please briefly describe CEHE.**

A. CEHE is a TDU operating in Texas. It is a subsidiary of CenterPoint Energy, Inc. ("CenterPoint"). CEHE serves nearly all of the Houston/Galveston metropolitan area. As of December 31, 2018, CEHE's customers consisted of approximately 65 retail energy providers, which sell electricity to approximately 2.5 million metered customers in Houston.[7]

**Q. Please briefly describe CEHE's current credit ratings.**

A. CEHE has an issuer rating of A3 from Moody's, A- from Fitch, and BBB+ from S&P.[8] All three credit rating agencies assign a stable outlook to CEHE and assign an issuer credit

[6] *Generic Issues Associated with Applications for Approval of Unbundled Cost of Service Rate Pursuant to PURA § 39.201 and Public Utility Commission Substantive Rule § 25.344*, Order No. 42, Docket No. 22344 (Dec. 22, 2000).

[7] CenterPoint Energy, Inc., SEC Form 10-K for the fiscal year ended on December 31, 2018, at 1, 4.

[8] Direct Testimony of Robert B. McRae at 11.

rating in the category of "investment grade."[9] Moody's and Fitch's issuer ratings are four notches above the highest non-investment-grade rating, and S&P's issuer rating is three notches above it.

Additionally, CEHE's most recent bond issuance of $700 million was rated A1 by Moody's, A+ by Fitch, and A by S&P. Moody's and Fitch's bond issuance ratings are six notches above the highest non-investment-grade rating, and S&P's bond issuance rating is five notches above it.

**Q. What does it mean to say that a bond issuance has an investment-grade rating?**

A. Bond credit ratings communicate information to the investment community about risks associated with particular bond investments. An investment-grade rating for a corporate (or municipal) bond issuance is one for which there is a relatively lower risk of default on repayment, thus making the bond an attractive investment. Bond issuances that do not receive an investment-grade rating are considered lower-quality bonds for which the risk of default is relatively greater than that of investment-grade bonds; such bonds are often referred to as "junk bonds."

Investment-grade ratings are important because, among other reasons, it is common for large institutional investors (e.g., pension funds, insurance companies, banks) to have investment policies that require a significant portion or even all of their bond investments to have investment-grade ratings.

[9] S&P and Fitch provide increasing risk and declining credit ratings for investment quality bonds ranging from **AAA** to **AA** to **A** to **BBB** (with "+" and "-" as sub-ratings or notches within these rating classes for relatively lower or higher risk, respectively). Moody's provides comparable increasing risk and declining credit quality ratings of **Aaa** to **Aa** to **A** to **Baa** (with 1, 2, and 3 as sub-ratings or notches within these rating classes for relatively lower to higher risk, respectively). Bonds rated **BB/Ba** (S&P/Moody's) ("double B") or lower are often called junk bonds. Bonds rated **B/B**, **CCC/Caa**, **CC/Ca**, and **C/C** are considered speculative; bond ratings below these speculative grades reflect insolvency.

**Q. Does your recommended return on invested capital take into account that the Company has investment-grade ratings?**

A. Yes. As explained later in my testimony, I have excluded from my group of comparable companies any utilities that do not have investment-grade ratings. Such utilities would not be good substitutes for estimating the return on investment capital for CEHE in this proceeding.

## V. COST OF EQUITY

### A. PRINCIPLES UNDERLYING COST OF EQUITY

**Q. Please provide your understanding of the legal guidelines for determining the cost of equity.**

A. The general framework for evaluating the cost of equity for regulated utilities is based on two decisions of the U.S. Supreme Court.

In *Bluefield,* the Court stated:

> The return should be reasonably sufficient to assure confidence in the financial soundness of the utility and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties.[10]

This decision established financial integrity and capital attraction as standards to be met in setting the rate of return.

In *Hope*, the Court stated:

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

[10] *Bluefield,* 262 U.S. at 683 (1923).

> financial integrity of the enterprise so as to maintain its credit and to attract capital.[11]

This decision reinforced the standards of financial integrity and capital attraction, and it further established the standard of setting a return on equity that is commensurate with the risks faced by the equity investor. From a financial perspective, investors in a utility must be given a reasonable opportunity to recover their reasonable capital costs, including a reasonable return on equity.

**Q. Did these court decisions address the specific methods by which return on equity should be determined?**

A. No. Although the court decisions were helpful in establishing a general framework for evaluation, they did not specify particular methods for determining return on equity. As a consequence, various techniques have been used to determine cost of equity. These techniques continue to evolve as new financial theories are proposed and the understanding of capital markets improves.

**Q. What ultimately determines the required return on equity?**

A. Ultimately, capital markets determine the required return on equity for an electric utility or for any publicly traded company. The company's equity cost, i.e., the required return on equity (ROE), is established through the interactions of buyers and sellers of the company's common stock. Given the market price for a share of common stock, a financial analyst desiring to measure the cost of equity must accurately assess investor expectations for the company in question, or for a group of comparable companies, or for both. Data generated

[11] *Hope*, 320 U.S. at 604 (1944).

by stock exchanges and the opinions of investment advisors are important considerations in making these assessments.

**Q. Should variation be expected among analysts in their estimates of the cost of equity?**

A. Yes. Estimating the cost of equity involves subjective judgement at various stages of the analysis; therefore, there is no single, infallible approach that can be used in all circumstances. The opinions of experts can differ widely on many factors relevant to the cost of equity, such as basic assumptions about risk, economic conditions, and investor expectations. Variations in the chosen approaches and even in the application of a single approach by different analysts should be expected. To rely solely on one approach for all companies in all market conditions and economic environments would be inappropriate. Generally, however, the results of various methods should be close to each other or their estimates should have overlapping ranges.

**Q. What models and techniques did you use to estimate the cost of equity for the Company?**

A. I used four approaches: two are discounted cash flow (DCF) approaches, and two are risk premium approaches.

The DCF methodology determines the price of a stock by estimating the value of future cash flows that the stock will produce for its owners. This method and its application in this analysis are discussed in Part C of this section of my testimony.

The "conventional" risk premium approach that I use in my testimony relies on the historical relationship between two indices. A value, which is unknown in a particular period, is forecasted for one of the indices by using its historical relationship to the other

index, where the value for that same period is known. I discuss this approach as well as the capital asset pricing model (CAPM) in Part D of this section of my testimony.

Use of the DCF and risk premium methods is well established by the Commission, and these methods have been relied on in rate case decisions for at least the past three decades.[12]

## B. COMPARABLE COMPANY ANALYSIS

**Q. What is the purpose of a comparable company analysis?**

A. The objective of a comparable company analysis in this context is to estimate the cost of equity for a subject company by estimating the cost of equity for companies with similar risk characteristics. The use of comparable companies in determining a company's cost of equity mitigates the influence of unknown factors by spreading them over multiple companies that are used in the comparable company analysis.

**Q. Please describe the group of comparable companies on which you performed your cost of equity analysis.**

A. I selected comparable companies by starting with all the electric utility companies covered by Value Line's *Ratings and Reports*. Then I selected those companies that share certain characteristics with CEHE without restricting their number unreasonably. The more companies there are in the analysis, the more the effects of an unexpected anomaly in one will be diluted by the rest, and therefore the better the comparison to the Company will be. However, choosing less stringent screening criteria to increase the number of comparable

[12] *Entergy Texas, Inc.'s Statement of Intent and Application for Authority to Change Rates,* Docket No. 48371, Pre-filed Direct Testimony of Mark Filarowicz at 18 (Aug. 8, 2018); *Application of Texas-New Mexico Power Company to Change Rates*, Docket No. 48401, Pre-filed Direct Testimony of Nancy Palma at 22 and 23 (Aug. 20, 2018).

companies may result in the selection of companies with characteristics unlike those of CEHE.

**Q. On what basis did you select your group of comparable companies?**

A. I selected those electric utilities that:

- Are followed by Value Line's *Ratings and Reports*;
- Have a current capital structure with a long-term debt proportion between 40% and 60% per Value Line's *Ratings and Reports*;
- Have a positive forecast of earnings growth from Value Line's *Ratings and Reports* and have a positive long-term forecast of earnings growth, if provided by Zacks;
- Have not had recent dividend omissions, cuts, or stagnation per Value Line's *Ratings and Reports*;
- Are covered by either Moody's or S&P or both, have investment-grade credit ratings, and, if the credit rating agency's outlook is negative or if the utility has a negative credit watch, would not lose the investment-grade rating if downgraded one notch; and
- Have not had recent, planned, or expected merger activities or other major capital expansion or contraction, and have not experienced any major, recent extraordinary events that would affect their overall financial condition.

**Q. Please list the companies that met the screening criteria.**

A. Listed below are the 21 companies that met the screening criteria:

| Ticker Symbol | Company |
|---|---|
| LNT | Alliant Energy Corp. |

| | | |
|---|---|---|
| 2 | AEE | Ameren Corporation |
| 3 | AEP | American Electric Power Company, Inc. (AEP) |
| 4 | BKH | Black Hills Corporation |
| 5 | ED | Consolidated Edison, Inc. |
| 6 | DTE | DTE Energy Company |
| 7 | DUK | Duke Energy Corporation |
| 8 | EE | El Paso Electric Company |
| 9 | ES | Eversource Energy |
| 10 | EXC | Exelon Corporation |
| 11 | FTS | Fortis Inc. |
| 12 | IDA | IDACORP, Inc. |
| 13 | NEE | NextEra Energy, Inc. |
| 14 | NWE | NorthWestern Corporation |
| 15 | OGE | OGE Energy Corp. |
| 16 | OTTR | Otter Tail Corporation |
| 17 | PNW | Pinnacle West Capital Corporation |
| 18 | POR | Portland General Electric Company |
| 19 | PEG | Public Service Enterprise Group Incorporated |
| 20 | WEC | WEC Energy Group, Inc. |
| 21 | XEL | Xcel Energy Inc. |

**Q. Are these the same companies that constitute the comparable group that CEHE's witness Mr. Robert Hevert used for his analysis?**

A. No, they are not the same. However, 17 of these companies are in Mr. Hevert's comparable group of 24 companies.

**Q. Would you expect the composition of the comparable group to be the same for every rate-of-return witness in a utility rate case?**

A. No. Differences in selection criteria will lead to different comparable groups. In utility rate cases, it is common for the composition of rate-of-return witnesses' comparable groups to differ.

## C. DCF ANALYSIS

**Q. Please explain the DCF methodology.**

A. The DCF methodology derives from the Gordon dividend growth model. In its original form, this model is used to determine the value of a share of common stock. The theory

underlying the model holds that the price of a share is equal to the present value of all future dividends, which are assumed to grow at a constant rate over time. It is expressed mathematically as follows:

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

where: $P_o$ = current share price;

$D_n$ = expected dividend in year n;

k = investors' required rate of return; and

n = year of expected share price realization.

When the dividends are assumed to grow at a constant rate (*g*), the DCF methodology is of the constant-growth variety and all future dividends can be expressed in terms of the current dividend, $D_o$, by the following equation:

$$P_o = \frac{D_o(1+g)^1}{(1+k)^1} + \frac{D_o(1+g)^2}{(1+k)^2} + \ldots + \frac{D_o(1+g)^n}{(1+k)^n}$$

Finally, if the discount rate or required rate of return (*k*) is assumed to be constant from year to year, and *k* is greater than *g*, then the equation above reduces to the following form as *n* approaches infinity:

$$P_o = \frac{D_o(1+g)}{(k-g)}$$

For purposes of estimating the cost of common equity, the equation above may be rearranged to solve for the investors' required rate of return:

$$k = \frac{D_0(1+g)}{P_0} + g$$

or more simply:

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

The constant-growth DCF model recognizes that the return to stockholders consists of two parts: dividend yield and growth. Equity investors expect to receive a portion of their total required return in the form of current dividends and the remainder in the form of price appreciation.

**Q. Are there variations of the constant-growth DCF model?**

A. Yes. For conditions in which growth rates are expected to differ significantly over time, analysts often employ a multistage version of the DCF model. For example, the expected near-term growth of a given company may be significantly higher or lower than the expected sustainable growth rate. In these situations, it is appropriate to apply a multistage DCF model that incorporates the various growth rates expected over time.

Under the multistage DCF model, the equation for the constant-growth DCF model is simply expanded to incorporate two or more growth-rate periods with the assumption that a permanent, constant growth rate can be estimated for some point in the future as follows:

$$P_o = \frac{D_0(1+g_1)}{(1+k)^1} + \frac{D_1(1+g_2)}{(1+k)^2} + \ldots + \frac{D_{(n-1)}(1+g_n)}{(1+k)^n}$$

where the variables are the same as in the equation in the previous question-and-answer, but there are more subscripts to indicate the different time periods to which the variables apply (e.g., $g_1$ represents the growth rate for the first period, $D_2$ represents the dividend rate for the second period, $g_2$ represents the growth rate for the second period, and so on). The "n" subscript represents the number of periods to be included (up to infinity).

**Q. What prices did you use for your DCF analyses?**

A. As shown on Attachment JO-3, I used stock prices that are an average of weekly prices over a recent 12-week period, specifically February 4, 2019, through April 22, 2019. I consider the 12-week period long enough to smooth out stock market fluctuations and accurately reflect long-term expectations, but short enough to reflect the most current information on the market's perceptions of risk, earnings growth, and dividend growth.

**Q. What versions of the DCF methodology did you use in your analysis?**

A. I used both a single-stage version and a multistage version of the DCF model. In the single-stage version, the stock's dividend growth is based on analysts' estimates of the utility's earnings growth over the next five years. In the multistage version of the DCF model, I used a two-stage growth approach. The first stage spans the next five years and uses the same growth estimates as those employed in the single-stage version. The second stage, which covers years 6 through 150, is based on a 5.14% projected long-term growth in gross domestic product (GDP) as discussed below.

**Q. Why did you use two versions of the DCF methodology?**

A. I used two versions of the DCF model because each model is reasonable in its own right and therefore likely to be used by investors. My intent was to more closely approximate the expectations of investors, on average, by blending the two models.

**Q. What are the key assumptions underlying the DCF methodology?**

A. The model rests on three principal assumptions. First, investors evaluate the expected risk and expected cash flows of all securities in the capital markets and, through the trading process, adjust the price of each security so that the expected return is commensurate with the expected risk. Second, investors discount the expected cash flows at the same rate *(k)* in every future period. Third, dividends, rather than earnings, constitute the source of value of a share of stock. Absent a sale of stock, dividends are the only cash flows received by investors. The earnings of the company that issues stock, however, are critical because: (1) they make it possible to pay dividends, and (2) they ultimately determine the level of growth of the company and the growth in dividends.

**Q. Please describe the growth component of the DCF methodology.**

A. Given the relationship between sustainable earnings growth and dividend growth, the growth rate commonly used in the DCF is the earnings growth of the company whose cost of equity is being estimated. Estimates of earnings growth are appropriate because the issue is not the rate at which the firm will actually grow (which is a function of regulatory actions, management ability, economic conditions, etc.), but rather investors' growth expectations, which are embodied in the current price of the stock.

**Q. Is it possible to know what expected earnings growth rate is actually embodied in the price of a stock?**

A. No. There is no objective way to precisely determine the growth rate expected by a consensus of investors. Regardless of which technique is used, the best that can be said of any estimate developed by a rate-of-return analyst is that it is a reasonable proxy for investors' consensus expectations about growth.

**Q. What estimates for the growth expectations of investors did you use in your DCF analyses?**

A. I relied on Value Line's *Ratings and Reports* and Zacks for the earnings growth rates in the single-stage DCF model and the first stage of the multistage DCF model. I used Value Line because it is one of the nation's largest, independent investment research services as well as a major money management institution,[13] and I used Zacks because it compiles aggregate earnings estimates made available by professional security analysts.[14]

For the second stage of the multistage DCF model, I used an expected long-run nominal growth rate of 5.14%, consisting of (1) the 3.14% per year average real growth rate of GDP for the period 1951 through 2018 as calculated from data reported by the U.S. Bureau of Economic Analysis,[15] and (2) the 2.00% rate of inflation forecast by the Federal Reserve System (FED) in its February 22, 2019, Monetary Policy Report.[16] These widely disseminated data are generally considered credible by investors.

**Q. Did you consider any other nominal growth rates besides the 5.14% referenced above?**

**A.** Yes. I considered two other nominal growth rates: (1) a 3.84% rate that represents the average of forecasted GDP growth rates for the 10-year period from 2020 to 2029, published by the Congressional Budget Office (CBO) in its report *The Budget and*

[13] VALUE LINE, ABOUT VALUE LINE (2019), http://www.valueline.com/about.

[14] *The Zacks Rank Guide*, ZACKS (2019), https://www.zacks.com/education/stock-education.

[15] U.S. Bureau of Economic Analysis, Real Gross Domestic Product [GDPC1], FEDERAL RESERVE BANK OF ST. LOUIS (FRED); https://fred.stlouisfed.org/series/GDPC1 (April 26, 2019).

[16] *Monetary Policy Report to the Congress*, BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM (Feb. 22, 2019), https://www.federalreserve.gov/monetarypolicy/2019-02-mpr-summary.html.

*Economic Output: 2019 to 2029*;[17] and (2) a 3.90% rate that resulted from adding the longer-run personal consumption expenditures inflation (*PCE inflation*) rate of 2% to the midpoint *change in real GDP* of 1.9% as published in the FED's Monetary Policy Report of February 22, 2019.[18]

The use of the 3.84% and 3.90% growth rates in the multistage DCF model resulted in an average cost of equity of 7.16% and 7.22%, respectively.

**Q. Did you directly incorporate the cost of equity results of 7.16% and 7.22% into your estimate of the Company's cost of equity?**

A. No. For the same reason that I did not directly incorporate the results of the capital asset pricing model in my analysis, as I will describe later in my testimony, I similarly did not directly incorporate these results in my analysis because they are markedly lower than the other estimates I calculated.

**Q. Why do you use a consensus forecast from professional security analysts rather than historical data as a proxy for investors' growth expectations?**

A. I use professional security analysts' forecasts instead of historical data for three reasons. First, the cost of equity is a forward-looking concept, and security analysts use extensive and sophisticated financial models to forecast growth rates. To the extent that historical growth rates for dividends, earnings, and book values are relevant to future growth, they are already incorporated into these forecasts. In addition, other pertinent information—such as general economic projections and the impact of new legislation, regulatory actions,

[17] *The Budget and Economic Outlook: 2019 to 2029*, CONGRESSIONAL BUDGET OFFICE, (Jan. 28, 2019), https://www.cbo.gov/publication/54918.

[18] *Monetary Policy Report to the Congress*, BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM (Feb. 22, 2019), https://www.federalreserve.gov/monetarypolicy/2019-02-mpr-summary.html.

and technological advancements—is factored into the projections made by investment advisory firms, providing a more comprehensive estimate and reflecting a broader base of relevant information.

Second, it is not reasonable to assume that future behavior is likely to emulate past behavior in the face of new information and new market conditions. No one entity operates in the absence of external influences, whether macroeconomic, industry specific, behavioral, or otherwise.

Third, empirical academic research by authorities such as Dr. Myron Gordon, the originator of the Gordon dividend growth model described earlier, has shown that consensus forecasts from professional security analysts do a better job of predicting the valuation of common stocks than do forecasts derived mechanically from historical data.

**Q. What are the results of your DCF analyses?**

A. Results and supporting calculations from the single-stage and multistage DCF analyses are included in Attachments JO-5 and JO-6, respectively. The average of the comparable companies' estimated cost of equity using the single-stage DCF yields a cost of equity estimate of 8.38%. The average of the comparable companies' estimated cost of equity using the multistage DCF yields a cost of equity estimate of 8.31%.

## D. RISK PREMIUM ESTIMATES OF THE COST OF EQUITY

**Q. Please describe the general methodology of your risk premium analysis.**

A. Because the cost of equity is not directly observable, estimates for it may be derived by examining bond yields, which are readily observable, and adding a premium to compensate for the additional risk assumed to exist in equity investments. Equity investments have traditionally been viewed as being riskier than debt investments because stockholder

payments are not contractually defined and because debtholders generally have a senior claim on the assets of a firm if it declares bankruptcy. The yields on long-term bonds are typically used in risk premium analyses because equity investments are usually thought of as long-term investments. Because the holding periods for these investments are assumed to be similar, the inflation expectations built into long-term bond yields should also be applicable to equity investments.

**Q. Are equity risk premiums stable over time, or do they vary with capital market conditions?**

A. Several empirical studies have demonstrated that equity risk premiums vary over time as changes occur in capital markets. In addition, it is reasonable to expect the equity risk premium for a particular company to change as the specific risks facing a company change over time. Regarding the influence of capital market conditions, several studies have identified an inverse relationship between interest rates and the size of equity risk premiums. One explanation for this phenomenon is the differential impact of inflation on debt and equity investments. Because bond-interest payments are fixed upon issuance, there is no mechanism for adjusting returns to account for changes in inflation and purchasing power. Therefore, when inflationary fears rise, the perceived risk associated with bond investments increases, and interest rates rise. On the other hand, equity investors may be shielded somewhat from inflation by a company's ability to raise dividend payouts during inflationary periods. Because stocks may be viewed as a better hedge against inflation, the cost of equity will tend to rise less than the cost of debt. As a consequence, the equity risk premium can be expected to fall as interest rates rise.

In addition to the influence of inflation, changes in investor risk preferences can significantly affect equity risk premiums. For example, anticipation of a major economic disruption or recession would likely trigger a move to higher-quality investments. This would probably decrease the returns that investors require for investing in U.S. Treasury bonds and high-grade corporate bonds. If the returns on these securities were used to measure risk premiums, the observed equity risk premiums would likely be higher. Conversely, if the demand for higher-quality investments were to fall, thereby pushing up the required returns, the observed equity risk premiums would likely be lower.

### 1. CONVENTIONAL RISK PREMIUM ESTIMATE

**Q. Please describe the "conventional" risk premium approach that you used in your estimate of the cost of equity for the Company.**

A. I refer to the risk premium approach used in the quantitative part of my testimony as the "conventional" risk premium to distinguish it from the concept of risk premiums in general and to denote that it is the primary risk premium method on which Staff has relied for many years. The conventional risk premium estimates the cost of equity for the Company by comparing the costs of equity authorized for utilities across the United States to the yields of large-company corporate bonds that are rated Baa by Moody's. The timeframe I have used for this purpose is 1980 through 2018. I excluded pre-1980 data due to the sharp reduction in the money supply at that time.

**Q. How did you use the relationship between authorized costs of equity and bond yields to quantify the cost of equity for the Company?**

A. I quantified the relationship by subtracting the bond yields from the authorized costs of equity to calculate a risk premium for the riskier equity.

**Q. Did you test the data for correlation as you described earlier in the introduction to Part D?**

A. Yes. I performed a regression analysis to analyze the relationship between the risk premium and the bond yields in the corresponding period. The regression analysis showed, with high confidence, that there is a trend in the relationship. It is an inverse trend in which risk premiums increase as bond yields decrease. On average, risk premiums increased 0.4392% for every 1.00% that bond yields decreased during the 1980–2018 time period.

**Q. Did you incorporate that relationship into your risk-premium estimate?**

A. Yes. The calculation of the adjustment to the risk premium (as indicated by the regression analysis) is shown on Page 2 of Attachment JO-7.

**Q. What are the results of your risk premium analysis?**

A. As shown on Page 2 of Attachment JO-7, the conventional risk premium analysis yields an estimated cost of equity of 9.79%.

**2. CAPM**

**Q. Have you directly incorporated the results of your CAPM analysis into your estimate of the Company's cost of equity?**

A. No. I did not directly incorporate the results of the CAPM in my analysis because it yielded a cost of equity that is markedly lower than the other estimates I calculated. Accordingly, I have used the CAPM analysis only as a qualitative check on the results of my other analyses.

**Q. What is the CAPM?**

A. The CAPM is one of the cornerstones of financial theory. In its simplest sense, the model describes the relationship between the risk of an asset and its expected return, and it

assumes that investors will not hold a risky asset unless they are adequately compensated for the risk. The CAPM represents the risk of an asset by its *beta*, which is a statistical concept that measures the sensitivity of a security's return to changes in the returns of the overall market. The higher the beta of an asset, the greater the risk of the asset relative to the risk of the overall market, and the greater the rate of return required by investors to hold the asset.

**Q. What do you infer from your CAPM analysis?**

A. The results of my CAPM, while reflecting the current low yield on U.S. Treasury bonds, suggest a cost of equity that is lower than those of my two other approaches. My CAPM analysis further indicates that a lower estimate of the cost of equity for the Company is consistent with prevailing capital market conditions. The model accurately reflects the effects of the current, low-interest-rate environment.

**Q. How is the rate of return calculated in the CAPM?**

A. The rate of return is calculated in the CAPM as follows:

$$k = R_f + ß(R_m - R_f)$$

where: k = required rate of return;

ß = beta of the asset;

$R_f$ = risk-free rate; and

$R_m$ = market return.

The value of $R_m - R_f$ in the equation above represents the additional risk of the market over the risk-free rate, i.e., the market risk premium of equity returns over a risk-free investment in a U.S. Treasury security. The CAPM formula calculates the relative amount of risk premium for a security by multiplying the market risk premium by the security's beta. The

beta-adjusted risk premium is then added to the risk-free rate to provide the total rate of return for that security.

**Q. Please describe the inputs you used in your CAPM analysis to estimate the cost of equity for the Company.**

A. For the risk-free rate in the CAPM equation, I used a rate of 2.81%. This rate was the average yield of the 20-year Treasury bond for the period from January 25, 2019, through April 26, 2019.[19] The Treasury bond's 20-year maturity is more appropriate to use for this purpose than a shorter-maturity yield because a longer investment time horizon is more comparable to the typical investment time frame for equity securities, especially for utility stocks. Another reason that a longer-term rate is a more appropriate input to the CAPM is that longer-term rates are less volatile and less likely to be influenced by random, short-term phenomena.

For the beta inputs to the model, I relied on the betas published by Value Line's *Ratings and Reports*. In the CAPM, the relevant risk in the pricing of a security is *market* risk, and the risk of the overall market is, by definition, equal to 1. Because the risk—and hence stock-price volatility—of electric utilities is typically lower than that of the overall market, the betas for these companies are ordinarily less than 1. These lower betas result in lower rates of return as calculated in the CAPM. The beta values for the companies in my comparable group are included in Attachment JO-8.

Finally, for the market risk premium, I used a rate of 5.98%, which is the difference between the arithmetic mean return for *large company stocks* and the arithmetic mean

[19] *Daily Treasury Long Term Rate Data,* USDT, http://www.treasury.gov/resource-center/data-chart-center/Pages/index.aspx.

return for *long-term government bonds* as calculated by Duff and Phelps.[20] Duff and Phelps's data relies on the 93-year period from 1926 through 2018. A 93-year period is preferable to a shorter period because short-term phenomena can distort the relationship between stocks and bonds.

**Q. What cost of equity does your CAPM analysis yield?**

A. My CAPM analysis yields a cost of equity for CEHE of 6.50%.

## E. SUMMARY OF COST OF EQUITY ANALYSES

**Q. Please summarize the results of your cost of equity analyses.**

A. The results obtained from the analyses are as follows and are also included in Attachment JO-9:

| Methodology | Point Estimate | Range |
|---|---|---|
| Single-stage DCF Analysis | 8.38% | 6.09%–10.95% |
| Multistage DCF Analysis | 8.31% | 7.51% 10.22% |
| Conventional Risk Premium | 9.79% | N/A |
| **Final ROE Estimate** | **9.45%** | 8.34%–9.79% |

**Q. What is your recommended return on equity for the Company?**

A. Considering the DCF analyses of companies that are comparable to the Company and the conventional risk premium analysis described previously in my testimony, I recommend an ROE for CEHE of 9.45%. My point estimate of 9.45% lies within the range of 8.34% to 9.79% as calculated by my DCF and risk premium analyses.

[20] Summary Statistics of Annual Total Returns, Income Returns, and Capital Appreciation Returns of Basic US Asset Classes 1926-2018, 2019 Stocks, Bonds, Bills, and Inflation Yearbook, Duff & Phelps.

After assessing other factors, such as current capital market conditions, recent Staff rate of return testimony,[21] and recently approved rates of return for comparable companies, such as the average authorized ROE of 9.42% for delivery-only electric utilities in other jurisdictions as published on the S&P Global Market Intelligence RRA Regulatory Focus report for the first quarter of 2019 (1Q-2019 S&P Global Market Intelligence RRA Report), included as Confidential Attachment JO-11 to my testimony,[22] I concluded that the best estimate for a cost of equity for CEHE lies in the upper half of the range. Accordingly, I selected my point estimate for CEHE's return on equity of 9.45% because (1) it lies in the middle of the upper half of the range of estimates, (2) it aligns with recent Staff recommendations, and (3) it promotes the public interest by balancing the concerns of ratepayers with a reasonable opportunity for CEHE to earn a reasonable return on its invested capital.

Based on my analyses and the foregoing considerations, my overall recommendation of 9.45% is a reasonable estimate of the ROE for the Company and is fully consistent with the requirements of *Hope* and *Bluefield*, which I referenced in Part A of this section of my testimony.

[21] *Entergy Texas, Inc.'s Statement of Intent and Application for Authority to Change Rates*, Docket No. 48371, Pre-filed Direct Testimony of Mark Filarowicz at 14 (Aug. 8, 2018); and *Application of Texas-New Mexico Power Company to Change Rates*, Docket No. 48401, Pre-filed Direct Testimony of Nancy Palma at 19 (Aug. 20, 2018).

[22] As I will discuss in Section VII of my testimony, although I don't believe that delivery-only electric utilities in other jurisdictions, as reported by the S&P Global Market Intelligence RRA Regulatory Focus report for 2018, are comparable to CEHE, I took into consideration the average authorized ROE of 9.42%, as reported in the 1Q-2019 S&P Global Market Intelligence RRA Report, to evaluate the reasonableness of my recommended ROE for CEHE.

## VI. COST OF DEBT

**Q. What cost of debt did the Company propose in its Application?**

A. In its Application, CEHE requested a cost of debt of 4.38%, which was its cost of debt as of the end of the 2018 test year.[23]

**Q. Have you used this Company-requested cost of debt to estimate your proposed overall rate of return?**

A. Yes, I have used the Company-requested cost of debt of 4.38% in my proposed overall rate of return. I will describe the proposed rate of return in Section VIII of my testimony.

## VII. CAPITAL STRUCTURE

**Q. What capital structure did the Company request in its Application?**

A. In its Application, CEHE requested a capital structure consisting of 50% long-term debt and 50% common equity for the purpose of establishing rates.[24]

**Q. What arguments did CEHE present to support its requested capital structure?**

A. CEHE presented three arguments:[25]

1. CEHE's exposure to business and regulatory risks;
2. CEHE's need for a capital structure that supports an A- issuer rating; and
3. The capital structure of comparable companies.

[23] Direct Testimony of Robert B. McRae at 37; and Application, Schedule II-C-2.4a at 1.

[24] Direct Testimony of Robert B. McRae at 4.

[25] Direct Testimony of Robert B. McRae at 14.

**Q. Please address the first argument (i.e., CEHE's exposure to business and regulatory risks).**

A. CEHE identified the following four business and regulatory risks: elevated capital expenditures risk, risk posed by the Tax Cuts and Jobs Act of 2017 (TCJA), risk of catastrophic damage from hurricanes, and regulatory risks.

**Q. What is your reaction to the aspects of elevated capital expenditures risk and TCJA risk referenced in CEHE's first argument?**

A. Any risk associated with the timely recovery of transmission and capital expenditures is mitigated by two mechanisms: (1) the interim transmission cost of service (Interim TCOS) mechanism, and (2) the distribution cost recovery factor (DCRF) mechanism.

The Interim TCOS mechanism allows electric transmission service providers to update their wholesale transmission rates up to twice per year to allow for recovery of the costs of new transmission investments. The DCRF mechanism provides an expedited ratemaking process for a utility to request, once per year, approval to incorporate changes in the utility's distribution invested capital since its most recent base rate case.[26]

Additionally, the nature of the utility industry requires elevated capital expenditures, and the TCJA affects all utilities. Therefore, these risks have been accounted for in my estimation of CEHE's return on equity based on a comparable group of companies. As mentioned earlier in my testimony, the objective of a comparable company analysis is to estimate the cost of equity for a subject company by estimating the cost of equity for companies with similar risk characteristics.

[26] *Report on Alternative Ratemaking Mechanisms,* Project No. 46046, Report on Alternative Ratemaking Mechanisms, Attachment A at 49 (Jan. 12, 2017).

**Q. What is your reaction to the risk of damage from hurricanes referenced in CEHE's first argument?**

A. As CEHE stated in its testimony, Texas law allows utilities that suffer hurricane damage to recover storm restoration costs and to obtain securitization financing for those costs.[27] I do not believe that the value of this recovery mechanism should be minimized. As discussed in Section IX of my testimony, I am recommending that the Commission allow CEHE to recover the Hurricane Harvey carrying costs calculated using CEHE's Commission-authorized rate of return.

**Q. Please discuss the regulatory risk aspect referenced in CEHE's first argument.**

A. CEHE's witness, Robert B. McRae, points out that both S&P and Moody's have characterized the Texas regulatory environment as being "constructive" or "credit positive," in large part due to the availability of mechanisms to recover transmission and distribution costs. Mr. McRae also points out that Fitch has characterized the Texas regulatory framework as "challenging," primarily because rates are established based on a historical test year and because the ROEs granted by the Commission are relatively low compared to many other state commissions' authorized ROEs.[28]

**Q. What is your reaction?**

A. I reviewed the Fitch report that Mr. McRae relied on to assert that rates are established based on a historical test year and that ROEs granted by the Commission are relatively low compared to those of many other state commissions (Fitch Report).[29] The Fitch Report

[27] Direct Testimony of Robert B. McRae at 27.

[28] Direct Testimony of Robert B. McRae at 30.

[29] Fitch Ratings, *CenterPoint Energy Houston Electric, LLC* at 1 (Apr. 13, 2018); this report was provided by CEHE as confidential schedule II-C-2.10 (Fitch 20180413 CEHE).

mentions the historical test year regulation as a weakness, but contains no commentary suggesting that Texas utilities' authorized ROEs are lower than those in other jurisdictions.

In fact, the Fitch Report, while echoing S&P's and Moody's positive view about the Interim TCOS and DCRF mechanisms, further indicates that those mechanisms help CEHE to consistently earn near its authorized ROE of 10%.

Finally, the most recently authorized ROE of 9.65%[30] for a TDU in Texas (i.e., Texas New Mexico Power Company's authorized ROE in 2018), is higher than the average authorized ROE of 9.38% for delivery-only electric utilities in other jurisdictions in 2018 as published by the 1Q-2019 S&P Global Market Intelligence RRA Report.

**Q. Please address the second argument (i.e., CEHE's need for a capital structure that supports an A- issuer rating).**

A. I do not agree with the Company's assertion that the Commission should provide extraordinary relief in helping CEHE maintain an A- issuer rating. As pointed out previously by Staff,[31] I believe that, at a high level, it is the Commission's function to set just and reasonable rates based on PURA and the Commission's rules, and that it is the responsibility of CEHE's management to conduct operations in a manner that maintains its investment-grade rating and enhances overall creditworthiness.

I concur with Staff's past opinion[32] that it is not the role of regulation to serve as a guarantor of a particular utility's creditworthiness. As stated in the precedential decision

[30] *Application of Texas-New Mexico Power Company to Change Rates,* Docket No. 48401, Ordering Paragraph 16 (Dec. 20, 2018).

[31] *Entergy Texas, Inc.'s Statement of Intent and Application for Authority to Change Rates,* Docket No. 48371, Direct Testimony of Mark Filarowicz at 10 (Aug. 8, 2018).

[32] *Id.*

in *Bluefield*, "the return . . . should be adequate, under efficient and economical management, to maintain [the] [utility's] credit and enable it to raise the money necessary for the proper discharge of its public duties."[33] The long-standing, precedential framework for electric utility regulation assumes that, ultimately, it is the utility's duty to manage its operations and finances economically and efficiently to maintain its creditworthiness. Additionally, PURA § 11.002(b) confirms that the role of regulation is to serve "as a substitute for competition," and in the competitive marketplace it is the responsibility of a company to maintain and effectively manage its own creditworthiness.[34]

As indicated earlier in my testimony, my recommended return on equity of 9.45%, which lies at the midpoint of the upper half of my range of 8.34% to 9.79%, is based on a comparable group of companies with investment-grade ratings.

**Q. Please address the third argument (i.e., the capital structure of comparable companies).**

A. Mr. McRae points out that the average equity ratio of the companies in Mr. Hevert's proxy group, which includes vertically integrated utilities, is approximately 53%.[35] He also points out that, according to the S&P Global Market Intelligence's RRA Regulatory Focus report for 2018 (2018 S&P Global Market Intelligence RRA Report),[36] the average equity

[33] *Bluefield*, 262 U.S. at 693.

[34] *Id.* at 10 and 11.

[35] Direct Testimony of Robert B. McRae at 34.

[36] Direct Testimony of Robert B. McRae, Confidential Exhibit RBM-5.

ratio for delivery-only electric utilities authorized by other state regulatory commissions for calendar year 2018 was 49.91%.[37]

**Q. What is your reaction to that argument?**

A. CEHE is a TDU. Therefore, a capital structure resulting from a proxy group that includes vertically integrated utilities is inappropriate. A capital structure resulting from delivery-only electric utilities in other jurisdictions is also inappropriate because, after reviewing the financial information (e.g., from the U.S. Securities and Exchange Commission Form 10-k reports, the Federal Energy Regulatory Commission Form 1 reports) for the delivery-only electric utilities in the 2018 S&P Global Market Intelligence RRA Report, I found that 14 of the 16 delivery-only electric utilities in the 2018 S&P Global Market Intelligence RRA Report purchase and sell electricity. The capital structures of the delivery-only electric utilities in the 2018 S&P Global Market Intelligence RRA Report, while a better proxy for CEHE than vertically integrated utilities, are not a good proxy for CEHE, which is a TDU (i.e., a wires-only utility) that does not purchase and sell electricity.

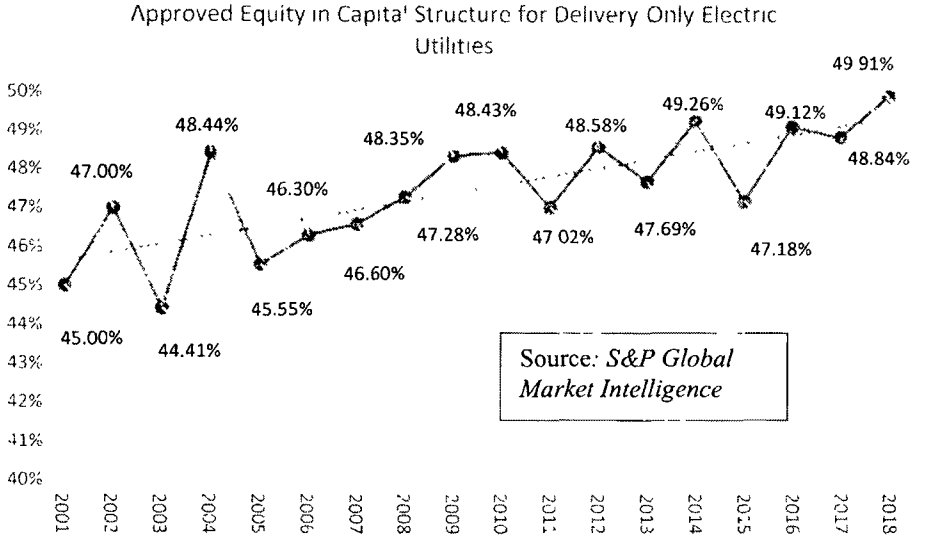
Nevertheless, Mr. McRae's reference to information in the 2018 S&P Global Market Intelligence RRA Report led me to review the trend of the composition of authorized capital structures for delivery-only utilities in other jurisdictions from 1998 through 2018.

**Q. What did you find when reviewing the trend?**

A. Although I do not believe that "delivery-only" electric utilities that purchase and sell electricity are a good proxy for estimating CEHE's capital structure, the authorized equity

[37] Direct Testimony of Robert B. McRae at 34.

ratio for delivery-only electric utilities has been trending upward from around 45% in 2001 to almost 50% in 2018 as shown in the following chart:




**Q. What is your recommended capital structure for CEHE?**

A. My recommended capital structure for CEHE is 60% long-term debt and 40% common equity. My recommended capital structure is consistent with the Commission's ruling in Docket No. 22344, which found that a uniform capital structure consisting of 60% long-term debt and 40% common equity was appropriate for ratemaking purposes for all TDUs operating in Texas.[38] Following the unbundling of the Texas electric market in 2002, the Commission concluded that TDUs operating in Texas "would face substantially lower risks than those currently faced by the integrated utilities."[39] I believe that the Commission's conclusion in Docket No. 22344 remains relevant.

[38] *Generic Issues Associated with Applications for Approval of Unbundled Cost of Service Rate Pursuant to PURA § 39.201 and Public Utility Commission Substantive Rule § 25.344*, Order No. 42, Docket No. 22344 (Dec. 22, 2000)

[39] *Id.* at 7.

**Q. Why do you believe that the Commission's conclusion in Docket No. 22344 remains relevant?**

A. I believe that the Commission's conclusion in Docket No. 22344 remains relevant for two reasons. First, Moody's and S&P characterize the Texas regulatory environment as "constructive" or "credit positive." Second, the Commission recently stated in its Report on Alternative Ratemaking Mechanisms in Project No. 46046[40] that it believes that: (1) the ratemaking mechanisms for TDUs that operate within the Electric Reliability Council of Texas (ERCOT) are not in need of major revision, (2) the existing streamlined methods of recovery are generally achieving their intended purposes, and (3) the existing paradigm, in which periodic rate proceedings are used in combination with already available streamlined recovery mechanisms, is an efficient and effective way to balance the interests of all stakeholders and ensure that electric rates are just and reasonable. I believe all these factors reflect the low risk environment for TDUs operating in ERCOT; therefore, I recommend a capital structure of 60% long-term debt and 40% common equity.

**Q. Is your recommended capital structure of 60% long-term debt and 40% common equity consistent with capital structures authorized by the Commission for TDUs operating in Texas?**

A. Yes. My recommended capital structure of 60% long-term debt and 40% common equity is consistent with capital structures authorized by the Commission for the majority of TDUs operating in Texas.[41]

[40] *Report on Alternative Ratemaking Mechanisms,* Project No. 46046, Report on Alternative Ratemaking Mechanisms at 4 (Jan. 12, 2017).

[41] The following TDUs are operating in Texas with authorized capital structures comprising 60% long-term debt and 40% equity: Cross Texas Transmission, LLC (Docket No. 43950), Electric Transmission Texas, LLC (Docket No. 33734), AEP Texas Central Company (Docket No. 33309), AEP Texas North Company (Docket No. 33310), Wind Energy Transmission Texas, LLC (Docket No. 44746).

## VIII. OVERALL RATE OF RETURN

**Q. How did you calculate the overall cost of capital?**

A. To calculate the recommended rate of return for CEHE, I employed the weighted average cost of capital methodology, the use of which involves three steps in a regulatory setting.

First, the analyst must identify the sources of capital and estimate the component cost of each source of capital in the target company's capital structure. Sources of capital generally consist of long-term debt and common equity in the electric utility regulatory setting. The determination of the cost of long-term debt is relatively straightforward because the costs of this capital source are embedded—i.e., they are set by contractual obligation and therefore are directly observable. In contrast, the cost of equity is not directly observable and must be estimated using analytical models as I described in Parts A through E of Section V of my testimony.

Second, the analyst must recommend an appropriate capital structure for regulatory purposes. For each identified source of capital, the analyst must recommend an appropriate weight. I do this in Section VII of my testimony.

Third, the analyst much weigh the cost of each source of capital by its relative proportion in the recommended capital structure. The sum of these weighted component costs represents the weighted average cost of capital—i.e., the overall rate of return. For ratemaking purposes, this overall rate of return is multiplied by the utility's invested capital (the rate base) in order to calculate the return component of the cost of service.

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Exceptions include Oncor Electric Delivery Company with an authorized capital structure comprising 57.5% long-term debt and 42.5% equity (Docket No. 46957), as well as CEHE (Docket No. 38339), Lone Star Transmission Texas, LLC (Docket No. 42469), and Texas-New Mexico Power (Docket No. 48401) with an authorized capital structure comprising 55% long-term debt and 45% equity.

**Q. What overall rate of return are you proposing for CEHE in this proceeding?**

A. As shown in Attachment JO-1, I am proposing a weighted average cost of capital of 6.41%. This reflects the Company's cost of debt and capital structure combined with my recommended cost of equity.

## IX. HURRICANE HARVEY CARRYING COSTS

**Q. Is CEHE requesting recovery of restoration costs associated with Hurricane Harvey?**

A. Yes. The Company requests approximately $64.4 million of restoration costs incurred to repair damage to CEHE's electric system caused by Hurricane Harvey.

**Q. Does the requested amount of approximately $64.4 million include carrying costs?**

A. No. In response to Staff's RFI 8-14, CEHE: (1) indicates that it inadvertently did not include carrying costs in its Application, (2) calculates the amount of those omitted carrying costs as $8,742,497, and (3) indicates that, in its May 20, 2019 errata filing, it is requesting to recover those omitted carrying costs.

**Q. Did the Company correctly calculate the carrying cost amount of $8,742,497?**

A. Yes. I reviewed the calculation and agree with the Company's methodology.

**Q. Why do you recommend that the Company recover those carrying costs?**

A. I recommend that the Commission allow CEHE to recover those carrying costs because PURA § 36.402 expressly provides for such recovery. I also believe it is important to assure utilities that the Commission will allow them to recover prudently incurred costs, including carrying costs, associated with hurricane restoration.

**Q. Does this conclude your testimony?**

A. Yes.

# *WEIGHTED AVERAGE COST OF CAPITAL*

| | *% of Total* | *Component Cost* | *Weighted Avg. Cost* |
|---|---|---|---|
| Long-term Debt | 60.00% | 4.38% | 2.63% |
| Common Equity | 40.00% | 9.45% | 3.78% |
| | 100.00% | | 6.41% |

## *SELECTION CRITERIA FOR COMPARABLE COMPANIES AND EARNINGS GROWTH*

| | Ticker Symbol | Company | Market Cap.[1] (Millions) | LTD/Capital[1, 2] | S&P Rating[3] | Earnings Growth VL[1] | Zacks[4] | ***Average*** |
|---|---|---|---|---|---|---|---|---|
| 1 | LNT | Alliant Energy Corp. | $10,835 | 53.3% | A- | 6.50% | 5.40% | ***5.95%*** |
| 2 | AEE | Ameren Corporation | $17,386 | 50.3% | BBB+ | 6.50% | 6.20% | ***6.35%*** |
| 3 | AEP | American Electric Power Company, Inc. (AEP) | $39,968 | 53.2% | A- | 4.00% | 5.70% | ***4.85%*** |
| 4 | BKH | Black Hills Corporation | $4,319 | 57.5% | BBB+ | 6.00% | 4.80% | ***5.40%*** |
| 5 | ED | Consolidated Edison, Inc. | $24,163 | 48.9% | A- | 3.00% | 2.00% | ***2.50%*** |
| 6 | DTE | DTE Energy Company | $22,333 | 54.2% | BBB+ | 5.00% | 6.00% | ***5.50%*** |
| 7 | DUK | Duke Energy Corporation | $63,090 | 54.0% | A- | 5.50% | 5.00% | ***5.25%*** |
| 8 | EE | El Paso Electric Company | $2,435 | 52.5% | BBB | 4.50% | 4.10% | ***4.30%*** |
| 9 | ES | Eversource Energy | $21,963 | 51.2% | A+ | 5.50% | 5.60% | ***5.55%*** |
| 10 | EXC | Exelon Corporation | $45,730 | 52.2% | BBB+ | 7.50% | 4.10% | ***5.80%*** |
| 11 | FTS | Fortis Inc. | $20,371 | 58.8% | A- | 5.50% | 4.90% | ***5.20%*** |
| 12 | IDA | IDACORP, Inc. | $4,911 | 43.6% | BBB | 3.50% | 3.80% | ***3.65%*** |
| 13 | NEE | NextEra Energy, Inc. | $85,156 | 52.7% | A- | 9.00% | 7.70% | ***8.35%*** |
| 14 | NWE | NorthWestern Corporation | $3,481 | 52.2% | BBB | 3.00% | 2.50% | ***2.75%*** |
| 15 | OGE | OGE Energy Corp. | $8,399 | 42.0% | BBB+ | 6.50% | 4.60% | ***5.55%*** |
| 16 | OTTR | Otter Tail Corporation | $1,995 | 44.7% | BBB | 5.00% | 7.00% | ***6.00%*** |
| 17 | PNW | Pinnacle West Capital Corporation | $10,566 | 47.0% | A- | 5.00% | 5.00% | ***5.00%*** |
| 18 | POR | Portland General Electric Company | $4,519 | 46.5% | BBB+ | 4.50% | 4.10% | ***4.30%*** |
| 19 | PEG | Public Service Enterprise Group Incorporated | $27,749 | 46.6% | BBB+ | 4.50% | 6.30% | ***5.40%*** |
| 20 | WEC | WEC Energy Group, Inc. | $24,053 | 50.4% | A- | 6.00% | 4.40% | ***5.20%*** |
| 21 | XEL | Xcel Energy Inc. | $28,210 | 56.4% | A- | 5.50% | 5.90% | ***5.70%*** |
| | | *Averages* | *$22,459* | *50.87%* | | *5.33%* | *5.00%* | ***5.17%*** |

Sources. [1] *Value Line Investment Report*: Electric Utility East (February 15, 2019), Electric Utility Central (March 15,2019), and Electric Utility West (April 26, 2019)

[2] Most recent capital structure from *Value Line Investment Report* Electric Utility East (as of 2017), Electric Utility Central (as of 2018), and Electric Utility West (as of 2018)

[3] Issuer Credit Rating from *S&P Global Ratings,* retrieved on April 23, 2019, from *S&P Global Market Intelligence* (www.snl.com).

[4] *Zacks Investment Research,* retrieved on April 22, 2019, from *www.zacks.com/stock/quote/*

## *AVERAGE STOCK PRICE*

| | Ticker Symbol | Company | ***12-week Average*** | 12 4/22/2019 | 11 4/15/2019 | 10 4/8/2019 | 9 4/1/2019 | 8 3/25/2019 | 7 3/18/2019 | 6 3/11/2019 | 5 3/4/2019 | 4 2/25/2019 | 3 2/18/2019 | 2 2/11/2019 | 1 2/4/2019 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | LNT | Alliant Energy Corp. | **$46.34** | $46.68 | $45 98 | $46.81 | $46.74 | $47.13 | $47.55 | $47.40 | $46.25 | $45.87 | $45.68 | $44.98 | $45.00 |
| 2 | AEE | Ameren Corporation | **$71.61** | $71.99 | $70.48 | $71.98 | $72.39 | $73.55 | $73.75 | $72.56 | $71.23 | $70.47 | $71.71 | $69.22 | $70.01 |
| 3 | AEP | American Electric Power Compar | **$82.59** | $84 02 | $83 01 | $84.15 | $83 57 | $83 75 | $85.14 | $83.81 | $81 95 | $81.40 | $81 72 | $79.27 | $79.34 |
| 4 | BKH | Black Hills Corporation | **$72.00** | $71.96 | $71 32 | $72.92 | $73.84 | $74.07 | $72.87 | $73.02 | $72.81 | $71.95 | $71.19 | $69.14 | $68.93 |
| 5 | ED | Consolidated Edison, Inc | **$83.03** | $84.32 | $83.61 | $84 55 | $84.81 | $84.81 | $84 91 | $84.84 | $83.82 | $82.66 | $82.10 | $77.77 | $78.19 |
| 6 | DTE | DTE Energy Company | **$122.66** | $124.04 | $123.21 | $124.42 | $123 98 | $124.74 | $124 89 | $123.04 | $122.26 | $121 97 | $122.78 | $118 90 | $117.66 |
| 7 | DUK | Duke Energy Corporation | **$89.73** | $89.68 | $89.14 | $90.45 | $90.53 | $90.00 | $90 70 | $90.65 | $90.20 | $89.53 | $89.91 | $86.60 | $89.36 |
| 8 | EE | El Paso Electric Company | **$57.46** | $59.80 | $58 90 | $60.40 | $60 03 | $58.82 | $57.55 | $58.24 | $58.09 | $56 74 | $54.67 | $53.06 | $53.22 |
| 9 | ES | Eversource Energy | **$70.35** | $70.86 | $69.96 | $70.68 | $71 08 | $70.95 | $71 69 | $71.73 | $69.15 | $69.20 | $69.76 | $69.66 | $69.51 |
| 10 | EXC | Exelon Corporation | **$49.20** | $50 07 | $49.40 | $49.70 | $49.90 | $50.13 | $50.28 | $50 00 | $48.78 | $48 54 | $48.37 | $47 90 | $47.36 |
| 11 | FTS | Fortis Inc | **$36.41** | $36.63 | $37 29 | $37.50 | $37.24 | $36.99 | $37.01 | $36 68 | $35 92 | $35.54 | $35.63 | $34.84 | $35.68 |
| 12 | IDA | IDACORP, Inc. | **$98.90** | $98 04 | $97.09 | $98 81 | $99.24 | $99.54 | $100 02 | $99 54 | $100.34 | $98.92 | $99.42 | $97.89 | $97.91 |
| 13 | NEE | NextEra Energy, Inc. | **$188.78** | $190.06 | $189.36 | $190.85 | $190.08 | $193.32 | $193 93 | $191.24 | $188.70 | $186.31 | $186.88 | $182.82 | $181.79 |
| 14 | NWE | NorthWestern Corporation | **$68.59** | $68.77 | $68.24 | $69.66 | $70.70 | $70.41 | $70.65 | $70.16 | $69.60 | $68.49 | $66.86 | $65.01 | $64.48 |
| 15 | OGE | OGE Energy Corp | **$42.09** | $42.02 | $41.43 | $41 80 | $42.70 | $42.75 | $42.74 | $42.74 | $42.01 | $42.07 | $42 42 | $41.52 | $40.91 |
| 16 | OTTR | Otter Tail Corporation | **$50.07** | $50 70 | $50.50 | $50.57 | $50.18 | $49.82 | $48.58 | $50.13 | $50.43 | $50.63 | $49 94 | $49.88 | $49.54 |
| 17 | PNW | Pinnacle West Capital Corporatio | **$93.81** | $94 80 | $94 07 | $95.31 | $94.64 | $95 58 | $96.72 | $96 15 | $93 16 | $92.78 | $93 22 | $89.96 | $89.38 |
| 18 | POR | Portland General Electric Compar | **$50.74** | $51.19 | $50.26 | $51.76 | $51.83 | $51.84 | $51.38 | $51.97 | $51.13 | $49.97 | $50.10 | $48.59 | $48.92 |
| 19 | PEG | Public Service Enterprise Group I | **$58.44** | $58.70 | $58.87 | $59.89 | $59.70 | $59.41 | $59.63 | $59 73 | $58.41 | $58.78 | $56.84 | $55.87 | $55.44 |
| 20 | WEC | WEC Energy Group, Inc | **$77.03** | $77.05 | $76.29 | $77 82 | $78 22 | $79 08 | $79.33 | $78.88 | $77.00 | $76.03 | $76.64 | $73.88 | $74.13 |
| 21 | XEL | Xcel Energy Inc | **$55.16** | $55.41 | $54.68 | $55.87 | $55.71 | $56.21 | $57.07 | $56.10 | $55 27 | $54.53 | $54.87 | $53.08 | $53.10 |

[1] *Stock Prices are adjusted by Yahoo Finance to reflect the effects of the date when the next dividend is expected to be paid*

## *FORECASTED DIVIDENDS*

| Ticker Symbol | Company | Growth Rate[1] (Attach. JO-2) | Next Four Quarters Next | 2nd | 3rd | 4th | ***Total Proj. $D_1$*** | Stock Price (Attach. JO-3) | Dividend Yield |
|---|---|---|---|---|---|---|---|---|---|
| LNT | Alliant Energy Corp. | 5.95% | $0.3550 | $0.3550 | $0.3550 | $0.3761 | ***$1.44*** | $46.34 | 3.11% |
| AEE | Ameren Corporation | 6.35% | $0.4750 | $0.4750 | $0.5052 | $0.5052 | ***$1.96*** | $71.61 | 2.74% |
| AEP | American Electric Power | 4.85% | $0.6700 | $0.6700 | $0.7025 | $0.7025 | ***$2.74*** | $82.59 | 3.32% |
| BKH | Black Hills Corporation | 5.40% | $0.5050 | $0.5050 | $0.5323 | $0.5323 | ***$2.07*** | $72.00 | 2.88% |
| ED | Consolidated Edison, Inc | 2.50% | $0.7400 | $0.7400 | $0.7400 | $0.7585 | ***$2.98*** | $83.03 | 3.59% |
| DTE | DTE Energy Company | 5.50% | $0.9450 | $0.9450 | $0.9450 | $0.9970 | ***$3.83*** | $122.66 | 3.12% |
| DUK | Duke Energy Corporatio | 5.25% | $0.9275 | $0.9762 | $0.9762 | $0.9762 | ***$3.86*** | $89.73 | 4.30% |
| EE | El Paso Electric Compar | 4.30% | $0.3755 | $0.3755 | $0.3755 | $0.3755 | ***$1.50*** | $57.46 | 2.61% |
| ES | Eversource Energy | 5.55% | $0.5350 | $0.5350 | $0.5350 | $0.5647 | ***$2.17*** | $70.35 | 3.08% |
| EXC | Exelon Corporation | 5.80% | $0.3625 | $0.3625 | $0.3625 | $0.3835 | ***$1.47*** | $49.20 | 2.99% |
| FTS | Fortis Inc. | 5.20% | $0.4500 | $0.4500 | $0.4734 | $0.4734 | ***$1.85*** | $36.41 | 5.07% |
| IDA | IDACORP, Inc. | 3.65% | $0.6300 | $0.6300 | $0.6530 | $0.6530 | ***$2.57*** | $98.90 | 2.59% |
| NEE | NextEra Energy, Inc. | 8.35% | $1.2027 | $1.2027 | $1.2027 | $1.3031 | ***$4.91*** | $188.78 | 2.60% |
| NWE | NorthWestern Corporati | 2.75% | $0.5750 | $0.5750 | $0.5750 | $0.5908 | ***$2.32*** | $68.59 | 3.38% |
| OGE | OGE Energy Corp. | 5.55% | $0.3650 | $0.3650 | $0.3853 | $0.3853 | ***$1.50*** | $42.09 | 3.56% |
| OTTR | Otter Tail Corporation | 6.00% | $0.3500 | $0.3500 | $0.3500 | $0.3710 | ***$1.42*** | $50.07 | 2.84% |
| PNW | Pinnacle West Capital C | 5.00% | $0.7375 | $0.7375 | $0.7744 | $0.7744 | ***$3.02*** | $93.81 | 3.22% |
| POR | Portland General Electri | 4.30% | $0.3625 | $0.3781 | $0.3781 | $0.3781 | ***$1.50*** | $50.74 | 2.95% |
| PEG | Public Service Enterprise | 5.40% | $0.4743 | $0.4743 | $0.4743 | $0.4999 | ***$1.92*** | $58.44 | 3.29% |
| WEC | WEC Energy Group, Inc | 5.20% | $0.5900 | $0.5900 | $0.5900 | $0.6207 | ***$2.39*** | $77.03 | 3.10% |
| XEL | Xcel Energy Inc. | 5.70% | $0.4050 | $0.4050 | $0.4050 | $0.4281 | ***$1.64*** | $55.16 | 2.98% |

[1] *The growth rate is applied to the quarterly dividend during the period when dividends have historically increased.*

## *DISCOUNTED CASH FLOW*

*Single-Stage*

| Ticker Symbol | Company | Stock Price (Attch. JO-3) | Div1 (Attch. JO-4) | Dividend Yield (Attch. JO-4) | Div. Growth (Attch. JO-2) | DCF ROE |
|---|---|---|---|---|---|---|
| LNT | Alliant Energy Corp. | $46.34 | $1.44 | 3.11% | 5.95% | 9.06% |
| AEE | Ameren Corporation | $71.61 | $1.96 | 2.74% | 6.35% | 9.09% |
| AEP | American Electric Power Comp | $82.59 | $2.74 | 3.32% | 4.85% | 8.17% |
| BKH | Black Hills Corporation | $72.00 | $2.07 | 2.88% | 5.40% | 8.28% |
| ED | Consolidated Edison, Inc. | $83.03 | $2.98 | 3.59% | 2.50% | 6.09% |
| DTE | DTE Energy Company | $122.66 | $3.83 | 3.12% | 5.50% | 8.62% |
| DUK | Duke Energy Corporation | $89.73 | $3.86 | 4.30% | 5.25% | 9.55% |
| EE | El Paso Electric Company | $57.46 | $1.50 | 2.61% | 4.30% | 6.91% |
| ES | Eversource Energy | $70.35 | $2.17 | 3.08% | 5.55% | 8.63% |
| EXC | Exelon Corporation | $49.20 | $1.47 | 2.99% | 5.80% | 8.79% |
| FTS | Fortis Inc. | $36.41 | $1.85 | 5.07% | 5.20% | 10.27% |
| IDA | IDACORP, Inc. | $98.90 | $2.57 | 2.59% | 3.65% | 6.24% |
| NEE | NextEra Energy, Inc. | $188.78 | $4.91 | 2.60% | 8.35% | 10.95% |
| NWE | NorthWestern Corporation | $68.59 | $2.32 | 3.38% | 2.75% | 6.13% |
| OGE | OGE Energy Corp. | $42.09 | $1.50 | 3.56% | 5.55% | 9.11% |
| OTTR | Otter Tail Corporation | $50.07 | $1.42 | 2.84% | 6.00% | 8.84% |
| PNW | Pinnacle West Capital Corporat | $93.81 | $3.02 | 3.22% | 5.00% | 8.22% |
| POR | Portland General Electric Comp | $50.74 | $1.50 | 2.95% | 4.30% | 7.25% |
| PEG | Public Service Enterprise Group | $58.44 | $1.92 | 3.29% | 5.40% | 8.69% |
| WEC | WEC Energy Group, Inc. | $77.03 | $2.39 | 3.10% | 5.20% | 8.30% |
| XEL | Xcel Energy Inc. | $55.16 | $1.64 | 2.98% | 5.70% | 8.68% |

| | |
|---|---|
| ***Minimum*** | *6.09%* |
| ***1st Quartile*** | *8.17%* |
| ***Average*** | ***8.38%*** |
| ***3rd Quartile*** | *9.06%* |
| ***Maximum*** | *10.95%* |

| | |
|---|---|
| *Minimum ROE* | *7 51%* |
| *1st Quartile* | *8 00%* |
| ***Average ROE*** | ***8.31%*** |
| *3rd Quartile* | *8 37%* |
| *Maximum ROE* | *10 22%* |

***MULTI-STAGE DISCOUNTED CASH FLOW***

| | LNT | AEE | AEP | BKH | ED | DTE | DUK | EE | ES | EXC | FTS | IDA | NEE | NWE | OGE | OTTR | PNW | POR | PEG | WEC | XEL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Stock Price* | $46 34 | $71 61 | $82 59 | $72 00 | $83 03 | $122 66 | $89 73 | $57 46 | $70 35 | $49 20 | $36.41 | $98 90 | $188 78 | $68 59 | $42 09 | $50 07 | $93 81 | $50 74 | $58 44 | $77 03 | $55 16 |
| *Div1* | $1 44 | $1 96 | $2 74 | $2.07 | $2 98 | $3 83 | $3 86 | $1 50 | $2 17 | $1 47 | $1.85 | $2 57 | $4 91 | $2 32 | $1 50 | $1 42 | $3 02 | $1 50 | $1 92 | $2.39 | $1 64 |
| *5-Yr Growth* | 5 95% | 6 35% | 4 85% | 5 40% | 2 50% | 5 50% | 5 25% | 4 30% | 5 55% | 5 80% | 5 20% | 3.65% | 8 35% | 2 75% | 5 55% | 6 00% | 5 00% | 4 30% | 5 40% | 5.20% | 5 70% |
| *L-t Growth* | 5 14% | 5 14% | 5.14% | 5 14% | 5 14% | 5 14% | 5.14% | 5 14% | 5 14% | 5 14% | 5 14% | 5 14% | 5 14% | 5 14% | 5 14% | 5 14% | 5 14% | 5 14% | 5.14% | 5.14% | 5 14% |
| ***Cost of Equity*** | ***8.31%*** | ***7.94%*** | ***8.40%*** | ***8.00%*** | ***8.37%*** | ***8.27%*** | ***9.45%*** | ***7.60%*** | ***8.23%*** | ***8 16%*** | ***10.22%*** | ***7.51%*** | ***8.00%*** | ***8.20%*** | ***8.74%*** | ***8.02%*** | ***8.31%*** | ***7.95%*** | ***8.43%*** | ***8.21%*** | ***8.14%*** |
| | | | | | | | | | | *Cash Flows* | | | | | | | | | | | |
| *2019* | -$46 34 | -$71 61 | -$82 59 | -$72.00 | -$83 03 | -$122 66 | -$89 73 | -$57 46 | -$70 35 | -$49 20 | -$36 41 | -$98 90 | -$188 78 | -$68 59 | -$42 09 | -$50.07 | -$93 81 | -$50.74 | -$58 44 | -$77 03 | -$55 16 |
| *2020* | $1 44 | $1 96 | $2 74 | $2.07 | $2 98 | $3 83 | $3.86 | $1 50 | $2.17 | $1 47 | $1 85 | $2 57 | $4 91 | $2 32 | $1 50 | $1 42 | $3.02 | $1 50 | $1 92 | $2 39 | $1 64 |
| *2021* | $1 53 | $2 08 | $2 88 | $2 19 | $3 05 | $4 04 | $4.06 | $1 57 | $2.29 | $1 56 | $1 94 | $2 66 | $5 32 | $2 38 | $1 58 | $1 51 | $3.17 | $1.56 | $2 03 | $2 51 | $1 74 |
| *2022* | $1 62 | $2 22 | $3 02 | $2 30 | $3 13 | $4 27 | $4 27 | $1 63 | $2 42 | $1 65 | $2 04 | $2 76 | $5 77 | $2 44 | $1 67 | $1 60 | $3 33 | $1 63 | $2 14 | $2 65 | $1 84 |
| *2023* | $1 71 | $2 36 | $3 16 | $2 43 | $3 21 | $4 50 | $4 50 | $1 70 | $2 55 | $1 74 | $2 15 | $2 86 | $6 25 | $2 51 | $1 76 | $1 69 | $3.50 | $1 70 | $2 25 | $2 78 | $1 94 |
| *2024* | $1 82 | $2 51 | $3.32 | $2 56 | $3 29 | $4 75 | $4 73 | $1 78 | $2 69 | $1.84 | $2 26 | $2 96 | $6 77 | $2 58 | $1 86 | $1 79 | $3.68 | $1 77 | $2 37 | $2 93 | $2 05 |
| *2025* | $1 91 | $2 64 | $3 49 | $2 69 | $3 46 | $4 99 | $4 98 | $1 87 | $2 83 | $1 94 | $2 38 | $3 11 | $7 12 | $2 71 | $1 96 | $1 89 | $3 86 | $1 86 | $2 50 | $3 08 | $2 16 |
| *2026* | $2.01 | $2 77 | $3 67 | $2 83 | $3 63 | $5 25 | $5 23 | $1 96 | $2 98 | $2 04 | $2 50 | $3 27 | $7 48 | $2.85 | $2 06 | $1 98 | $4.06 | $1 96 | $2 62 | $3 24 | $2 27 |
| *2027* | $2 11 | $2 91 | $3 86 | $2 98 | $3 82 | $5 52 | $5.50 | $2.07 | $3 13 | $2 14 | $2 63 | $3 44 | $7 87 | $3 00 | $2 16 | $2.09 | $4.27 | $2 06 | $2 76 | $3 40 | $2 38 |
| *2028* | $2 22 | $3 06 | $4 05 | $3.13 | $4 02 | $5 80 | $5 78 | $2 17 | $3 29 | $2 25 | $2 76 | $3 62 | $8 27 | $3 15 | $2 28 | $2.19 | $4 49 | $2 16 | $2 90 | $3 58 | $2 51 |
| *2029* | $2.33 | $3 22 | $4 26 | $3.29 | $4 22 | $6 10 | $6 08 | $2.28 | $3 46 | $2 37 | $2 91 | $3 81 | $8 70 | $3 32 | $2 39 | $2 31 | $4 72 | $2 28 | $3 05 | $3 76 | $2 64 |
| *2030* | $2 45 | $3 39 | $4 48 | $3 46 | $4 44 | $6.41 | $6 39 | $2 40 | $3 64 | $2.49 | $3 06 | $4 00 | $9 14 | $3 49 | $2 52 | $2.42 | $4 97 | $2.39 | $3 21 | $3 96 | $2 77 |
| *2031* | $2 58 | $3 56 | $4.71 | $3 64 | $4 67 | $6.74 | $6 72 | $2 52 | $3 83 | $2 62 | $3 21 | $4 21 | $9 62 | $3 67 | $2.65 | $2 55 | $5 22 | $2 52 | $3 37 | $4 16 | $2 91 |
| *2032* | $2 71 | $3 75 | $4 96 | $3 82 | $4 91 | $7.09 | $7.07 | $2 65 | $4 02 | $2.75 | $3 38 | $4 42 | $10 11 | $3 86 | $2 78 | $2 68 | $5 49 | $2 65 | $3 54 | $4 37 | $3 06 |
| *2033* | $2 85 | $3 94 | $5 21 | $4 02 | $5.16 | $7.46 | $7 43 | $2 79 | $4 23 | $2 89 | $3 55 | $4 65 | $10 63 | $4 05 | $2.92 | $2.82 | $5 77 | $2.78 | $3 73 | $4 60 | $3 22 |
| *2034* | $3 00 | $4 14 | $5 48 | $4 23 | $5.43 | $7 84 | $7 81 | $2.93 | $4 45 | $3 04 | $3.73 | $4 89 | $11 18 | $4 26 | $3.08 | $2 96 | $6 07 | $2 92 | $3 92 | $4 83 | $3 39 |
| *2035* | $3 15 | $4 35 | $5 76 | $4 44 | $5 71 | $8 24 | $8 22 | $3 09 | $4 68 | $3.20 | $3 93 | $5 14 | $11 75 | $4 48 | $3 23 | $3 11 | $6 38 | $3 08 | $4 12 | $5 08 | $3 56 |
| *2036* | $3 31 | $4 58 | $6 06 | $4 67 | $6 00 | $8.67 | $8 64 | $3 24 | $4 92 | $3 36 | $4 13 | $5 41 | $12 36 | $4 71 | $3 40 | $3 27 | $6 71 | $3 23 | $4 33 | $5 35 | $3 74 |
| *2037* | $3 49 | $4 81 | $6 37 | $4 91 | $6 31 | $9 11 | $9 08 | $3 41 | $5 17 | $3.54 | $4 34 | $5 68 | $12 99 | $4 95 | $3 57 | $3 44 | $7 05 | $3 40 | $4.55 | $5 62 | $3 94 |
| *2038* | $3 66 | $5 06 | $6 69 | $5 17 | $6 63 | $9 58 | $9 55 | $3 59 | $5 43 | $3.72 | $4 56 | $5 98 | $13 66 | $5 21 | $3 76 | $3.62 | $7 42 | $3 57 | $4 79 | $5 91 | $4 14 |
| . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| | | | | | | | | | | *[ Hidden Rows]* | | | | | | | | | | | |
| . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| *2165* | $2,138 67 | $2,953 37 | $3,907 10 | $3,015 26 | $3,871 98 | $5,590 78 | $5,572 81 | $2,093 26 | $3,171 55 | $2,170 71 | $2,663 93 | $3,487 97 | $7,971 50 | $3,039 98 | $2,193 38 | $2,112 80 | $4,328 56 | $2,086 08 | $2,794 73 | $3,448 45 | $2,415 46 |
| *2166* | $2,248 67 | $3,105 26 | $4,108 04 | $3,170 33 | $4,071 12 | $5,878.32 | $5,859 42 | $2,200 92 | $3,334 66 | $2,282 35 | $2,800 94 | $3 667 35 | $8,381 48 | $3,196 33 | $2,306 18 | $2,221 46 | $4,551 17 | $2,193 36 | $2,938 46 | $3,625 81 | $2,539 69 |
| *2167* | $2,364 32 | $3,264.97 | $4,319 32 | $3,333 38 | $4,280.49 | $6,180 64 | $6,160 78 | $2,314 11 | $3,506 16 | $2,399 74 | $2,944 99 | $3,855 96 | $8,812 54 | $3,360.71 | $2,424 79 | $2,335 71 | $4,785 24 | $2,306 17 | $3,089 58 | $3,812.28 | $2,670 30 |
| *2168* | $2,485 91 | $3,432 89 | $4,541 46 | $3,504 82 | $4,500 64 | $6,498 51 | $6,477 63 | $2,433 13 | $3,686 48 | $2,523 16 | $3,096 45 | $4,054 28 | $9,265 77 | $3,533.56 | $2,549 50 | $2,455 83 | $5,031 35 | $2,424.77 | $3,248.48 | $4,008 35 | $2,807 64 |
| *2169* | $2,613 76 | $3,609 44 | $4,775 03 | $3,685 07 | $4,732 11 | $6,832 73 | $6,810 77 | $2,558 27 | $3,876 08 | $2,652 92 | $3,255 70 | $4,262 79 | $9,742 31 | $3,715 29 | $2,680 62 | $2,582 14 | $5,290 11 | $2,549 48 | $3,415 55 | $4,214 50 | $2,952 04 |

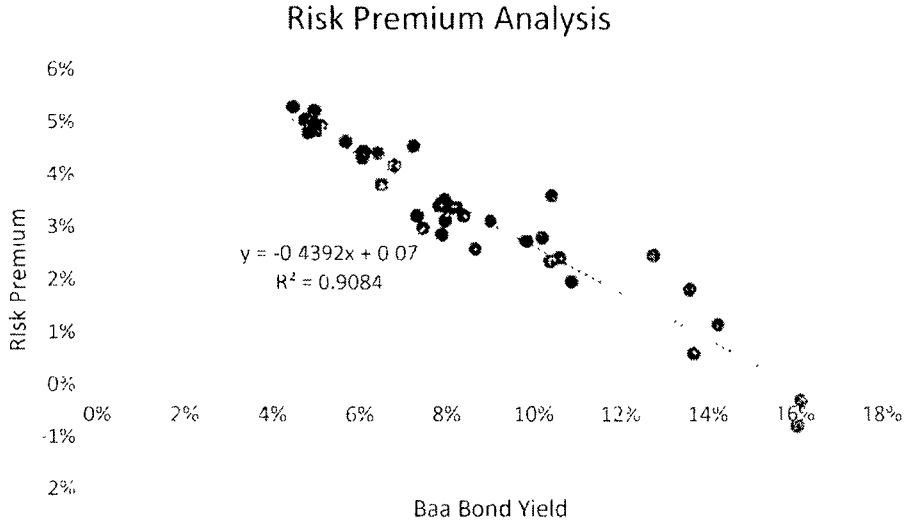
***CONVENTIONAL RISK PREMIUM ANALYSIS***
***OF ELECTRIC UTILITIES' AUTHORIZED RATES OF RETURN ON EQUITY***
***AND CONCURRENT BOND YIELDS***

| Year | Allowed ROE[1] | Avg Baa Bond Yield[2] | Risk Premium |
|---|---|---|---|
| 2018 | 9.60% | 4.80% | 4.80% |
| 2017 | 9.74% | 4.44% | 5.30% |
| 2016 | 9.77% | 4.72% | 5.05% |
| 2015 | 9.85% | 5.00% | 4.85% |
| 2014 | 9.91% | 4.85% | 5.06% |
| 2013 | 10.03% | 5.10% | 4.93% |
| 2012 | 10.17% | 4.94% | 5.23% |
| 2011 | 10.29% | 5.66% | 4.63% |
| 2010 | 10.37% | 6.04% | 4.33% |
| 2009 | 10.52% | 7.30% | 3.22% |
| 2008 | 10.41% | 7.43% | 2.98% |
| 2007 | 10.30% | 6.48% | 3.82% |
| 2006 | 10.32% | 6.48% | 3.84% |
| 2005 | 10.51% | 6.06% | 4.45% |
| 2004 | 10.81% | 6.40% | 4.41% |
| 2003 | 10.96% | 6.77% | 4.19% |
| 2002 | 11.21% | 7.81% | 3.40% |
| 2001 | 11.07% | 7.95% | 3.12% |
| 2000 | 11.58% | 8.37% | 3.21% |
| 1999 | 10.72% | 7.87% | 2.85% |
| 1998 | 11.77% | 7.22% | 4.55% |
| 1997 | 11.33% | 7.87% | 3.46% |
| 1996 | 11.40% | 8.05% | 3.35% |
| 1995 | 11.58% | 8.20% | 3.38% |
| 1994 | 11.21% | 8.63% | 2.58% |
| 1993 | 11.46% | 7.94% | 3.52% |
| 1992 | 12.09% | 8.98% | 3.11% |
| 1991 | 12.54% | 9.81% | 2.73% |
| 1990 | 12.70% | 10.35% | 2.35% |
| 1989 | 12.97% | 10.18% | 2.79% |
| 1988 | 12.80% | 10.84% | 1.96% |
| 1987 | 12.98% | 10.57% | 2.41% |
| 1986 | 13.99% | 10.40% | 3.59% |
| 1985 | 15.18% | 12.72% | 2.46% |
| 1984 | 15.34% | 14.20% | 1.14% |
| 1983 | 15.37% | 13.55% | 1.82% |
| 1982 | 15.79% | 16.11% | -0.32% |
| 1981 | 15.22% | 16.03% | -0.81% |
| 1980 | 14.23% | 13.64% | 0.59% |
| *Averages* | *11.75%* | *8.46%* | *3.29%* |

[1] *SNL Financial LC (https://platform.mi.spglobal.com/web/client?auth=inherit#industry/statisticsAndGraphs), available at www.snl.com.*

[2] *Mergent Bond Record, April 2019, p. 72,* and earlier editions.

***CONVENTIONAL RISK PREMIUM ANALYSIS***
***OF ELECTRIC UTILITIES' AUTHORIZED RATES OF RETURN ON EQUITY***
***AND CONCURRENT BOND YIELDS***




*Computation of ROE*

| | | |
|---|---|---|
| Average seasoned Baa bond yield, Jan– Mar 2019 | | 4.97% |
| Average bond yield over study period | - | 8.46% |
| Change in bond yield | | -3.49% |
| Risk premium/interest rate relationship | x | -0.4392 |
| Adjustment to average risk premium | | 1.53% |
| Average risk premium over study period | + | 3.29% |
| Adjusted risk premium | | 4.82% |
| Avg seasoned Baa bond yield | + | 4.97% |
| | | |
| ***Implied cost of equity:*** | | ***9.79%*** |

## *CAPITAL ASSET PRICING MODEL*

*Estimated Cost of Equity*

| Ticker Symbol | Company | Risk-Free Rate[1] | Value Line Beta[2] | Market Risk Premium[3] | CAPM Cost of Equity |
|---|---|---|---|---|---|
| LNT | Alliant Energy Corp. | 2.81% | 0.65 | 5.98% | 6.70% |
| AEE | Ameren Corporation | 2.81% | 0.60 | 5.98% | 6.40% |
| AEP | American Electric Power Company, | 2.81% | 0.55 | 5.98% | 6.10% |
| BKH | Black Hills Corporation | 2.81% | 0.80 | 5.98% | 7.60% |
| ED | Consolidated Edison, Inc. | 2.81% | 0.45 | 5.98% | 5.51% |
| DTE | DTE Energy Company | 2.81% | 0.55 | 5.98% | 6.10% |
| DUK | Duke Energy Corporation | 2.81% | 0.50 | 5.98% | 5.80% |
| EE | El Paso Electric Company | 2.81% | 0.70 | 5.98% | 7.00% |
| ES | Eversource Energy | 2.81% | 0.60 | 5.98% | 6.40% |
| EXC | Exelon Corporation | 2.81% | 0.70 | 5.98% | 7.00% |
| FTS | Fortis Inc. | 2.81% | 0.65 | 5.98% | 6.70% |
| IDA | IDACORP, Inc. | 2.81% | 0.60 | 5.98% | 6.40% |
| NEE | NextEra Energy, Inc. | 2.81% | 0.60 | 5.98% | 6.40% |
| NWE | NorthWestern Corporation | 2.81% | 0.60 | 5.98% | 6.40% |
| OGE | OGE Energy Corp. | 2.81% | 0.85 | 5.98% | 7.90% |
| OTTR | Otter Tail Corporation | 2.81% | 0.70 | 5.98% | 7.00% |
| PNW | Pinnacle West Capital Corporation | 2.81% | 0.55 | 5.98% | 6.10% |
| POR | Portland General Electric Company | 2.81% | 0.60 | 5.98% | 6.40% |
| PEG | Public Service Enterprise Group Inc | 2.81% | 0.65 | 5.98% | 6.70% |
| WEC | WEC Energy Group, Inc. | 2.81% | 0.55 | 5.98% | 6.10% |
| XEL | Xcel Energy Inc. | 2.81% | 0.50 | 5.98% | 5.80% |
| | | | | *Average* | ***6.50%*** |

Sources: [1] U.S. Treasury (https://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=longtermrate), data for treasury 20-year constant maturity rates from January 25, 2019, through April 26, 2019.

[2] *Value Line Investment Report, February 15, March 15, and April 26, 2019.*

[3] *2019 Stocks, Bonds, Bills, and Inflation Yearbook* (Duff & Phelps), Summary Statistics of Annual Total Returns, Income Returns, and Capital Appreciation Returns of Basic US Asset Classes 1926-2018; risk premium calculated as arithmetic mean of large-company stocks from 1926 to 2018 minus the arithmetic mean of long-term government bonds for the same time period.

# *RETURN ON EQUITY*

## *Summary*

| *Single-stage DCF* | |
|---|---|
| Range | Average |
| 6.09%–10.95% | 8.38% |
| *Multi-stage DCF* | |
| Range | Average |
| 7.51%–10.22% | 8.31% |
| ***Combined DCF*** | |
| Range | Average |
| 6.09%–10.95% | 8.34% |

| ***Risk Premium*** | |
|---|---|
| Range | Point Estimate |
| N/A | 9.79% |

## *Final Estimate*

| | |
|---|---|
| Range | 8.34%–9.79% |
| Point | 9.45% |

# Jorge Ordonez

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## REGULATORY EXPERIENCE

Public Utility Commission of Texas, Rate Regulation Division

August 2018 to present

Financial Analyst, Tariff and Rate Analysis Section

Perform financial and economic analyses of utility companies under the jurisdiction of the Public Utility Commission of Texas. My duties include determining compliance with Commission requirements. I prepare and present testimony as an expert witness on issues related to rate of return, rates, pricing, tariff provisions, cost allocation, and rate design in docketed proceedings before the Public Utility Commission of Texas and the State Office of Administrative Hearings (SOAH).

Public Utility Commission of Oregon, Economic Research and Financial Analysis Division

January 2009 to February 2016

Senior Financial Economist

Evaluated and provided expert witness testimony on dockets such as general rate cases, power cost mechanisms, natural gas cost mechanisms, and integrated resource plans.

## EDUCATION

| | |
|---|---|
| 2005 | Willamette University, Salem, OR<br>Atkinson Graduate School of Management<br>Master of Business Administration, Finance |
| 1998 | San Antonio Abad University, Cusco, Peru<br>Electrical and Mechanical Engineering School<br>Bachelor of Science, Mechanical Engineering |

**List of Testimony Filed at the Public Utility Commission of Texas**

**Docket No. 49041** - *Application of Southwestern Electric Power Company for Approval of a Distribution Cost Recovery Factor,* Mar 13, 2019.

**Docket No. 49122** - *Compliance Filing of Texas New Mexico Power Company in Accordance with the Final Order in Docket No. 48401 Regarding Hurricane Harvey Rider,* May 15, 2019.

**List of Memoranda Filed in Lieu of Testimony at the Public Utility Commission of Texas**

**Docket No. 48669** – *Interest-Rate Compliance Filing of Oncor Electric Delivery Company, LLC Resulting from Docket No. 47675*, November 12, 2018.

**Docket No. 48685** – *Compliance Tariff Filing of CenterPoint Energy Houston Electric, LLC for a Standard True-Up of System Restoration Charges under Schedule SRC*, September 28, 2018.

**Docket No. 48686** – *Compliance Filing of CenterPoint Energy Houston Electric, LLC for a Standard True-Up of ADFIT Credit Charges under Schedule ADFIT*, September 28, 2018.

**Docket No. 48708** – *Application of CenterPoint Energy Houston Electric, LLC for Interim Update of Wholesale Transmission Rates*, November 5, 2018.

**Docket No. 48718** – *Application of Southwestern Public Service Company for Authority to Implement a Net Refund for Overcollected Fuel Costs*, March 20, 2019.

**Docket No. 48802** – *Application of the City of Garland for Interim Update of Wholesale Transmission Rates*, December 4, 2018.

**Docket No. 48828** – *Application of Trinity Valley Electric Cooperative, Inc., for Interim Update of Wholesale Transmission Rates Pursuant to TAC 25.192(h)*, December 4, 2018.

**Tariff Control No. 48838** – *Compliance Filing of CenterPoint Energy Houston Electric, LLC for a Standard True-Up of Transition Charges Under Schedule TC2*, November 21, 2018.

**Docket No. 48840** – *Application of Guadalupe Valley Electric Cooperative, Inc. for Interim Update of Wholesale Transmission Rates Under 16 Texas Administrative Code § 25.192(h)(1)*, December 13, 2018.

**Docket No. 48928** – *Commission Staff's Petition to Set 2019 Wholesale Transmission Services Charges for the Electric Reliability Council of Texas*, January 24, 2019.

**Docket No. 48931** – *Application of AEP Texas Inc. for Interim Update of Wholesale Transmission Rates*, January 18, 2019.

**Docket No. 48932** – *Petition of Texas-New Mexico Power Company for Approval of a Transmission Cost Recovery Factor Update*, January 2, 2019.

**Docket No. 48952** – *Application of Rayburn Country Electric Cooperative, Inc., for Interim Update of Wholesale Transmission Rates Pursuant to TAC 25.192(h)*, January 7, 2019.