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

TEXAS COAST UTILITIES COALITION'S

INITIAL POST-HEARING BRIEF

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TCUC's INITIAL POST-HEARING BRIEF

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I. Introduction/Summary [Preliminary Order (PO) Issues 1, 2, 3]

The Texas Coast Utilities Coalition[1] ("TCUC") of cities limits its Initial Post-Hearing Brief ("Initial Brief") to the issues of cost of capital and the appropriate capital structure for CenterPoint Energy Houston Electric, LLC ("CEHE"), and the proper depreciation rates and depreciation expense for CEHE. TCUC joins in and supports the positions presented by the Gulf Coast Coalition of Cities ("GCCC"), and the City of Houston and the Houston Coalition of Cities (collectively, the "Houston Coalition") on issues addressed in their evidence and initial post-hearing briefs. Further, TCUC expressly reserves the right to address all issues in its reply brief raised by other parties in their initial briefs.

Lastly, TCUC extends it thanks and gratitude to the Administrative Law Judges ("ALJs") for their attention to this case, their fairness in the conduct of the hearing, and most importantly, their patience with the parties.

[1] The Texas Coast Utilities Coalition of cities is comprised of the Cities of Baytown, Clute, Freeport, League City, Pasadena, Pearland, Shoreacres, West Columbia, and Wharton.

A. Cost of Capital and Capital Structure

1. Cost of Capital

TCUC urges the ALJs to adopt a revenue requirement that employs an overall rate of return of 6.23% as recommended by Dr. Woolridge in his primary recommendation.[2] Dr. Woolridge's proposed cost of equity, cost of debt, and capital structure are shown in Table 1 below:

Table 1
TCUC's Primary Rate of Return Recommendation[3]

Capital Source	Capitalization Ratio	Cost Rate	Weighted Cost Rate
Short-Term Debt	**0.00%**	**0.00%**	**0.00%**
Long-Term Debt	**60.00%**	**4.38%**	**2.63%**
Common Equity	**40.00%**	**9.00%**	**3.60%**
Total	**100.00%**		**6.23%**

TCUC estimates that adopting Dr. Woolridge's proposed return on equity ("ROE") of 9.00% with a capital structure of 60% long-term debt and 40% common equity, reduces CEHE's proposed total increase in revenue of approximately $161.1 million, by approximately $96.1 million.[4] The effect of TCUC's proposed cost of capital and capital structure is shown in the table below:

Rate of Return Adjustments[5]	Wholesale Transmission	Retail Dist/Met/CS	TOTAL
Reflect Capital Structure of 40% Equity and 60% Debt	(20.242)	(32.894)	(53.136)
Reflect Return on Equity of 9.0%	(16.371)	(26.604)	(42.976)
TOTAL	**(36.613)**	**(59.498)**	**(96.112)**

[2] TCUC Exhibit 1 – J. Randall Woolridge, Ph.D., Direct Testimony at 4 (hereinafter, "TCUC Exh. 1 – Woolridge Dir. at _").

[3] TCUC Exh. 1 – Woolridge Dir. at 4.

[4] *See* GCCC Exh. 1 – Lane Kollen Direct Testimony at 14 at Table 1 ("GCCC Exh. 1 - Kollen Dir. at __").

[5] *Id.*

Alternatively, TCUC urges the ALJs to adopt Dr. Woolridge's alternative recommended overall rate of return of 6.20%.

Table 2
TCUC's Alternative Rate of Return Recommendation[6]

Capital Source	Capitalization Ratio	Cost Rate	Weighted Cost Rate
Short-Term Debt	**0.90%**	**2.27%**	**0.02%**
Long-Term Debt	**55.48%**	**4.38%**	**2.43%**
Common Equity	**43.62%**	**8.65%**	**3.77%**
Total	**100.00%**		**6.22%**

Dr. Woolridge's alternative recommended rate of return is premised on the inclusion of short-term debt in CEHE's capital structure and a ROE, of 8.65%.

2. Capital Structure

TCUC respectfully urges the Administrative Law Judges ("ALJs") to adopt the capital structure Dr. J. Randall Woolridge, TCUC's cost-of-capital expert witness, recommends in his pre-filed direct testimony.[7] As the ALJs are aware, Dr. Woolridge proposed a primary recommendation and an alternative recommendation with regard to CEHE's proper cost of capital and capital structure. Dr. Woolridge's primary and alternative recommendations are set forth in the tables below:

Table 1
TCUC's Primary Rate of Return Recommendation[8]

Capital Source	Capitalization Ratio	Cost Rate	Weighted Cost Rate
Short-Term Debt	**0.00%**	**0.00%**	**0.00%**
Long-Term Debt	**60.00%**	**4.38%**	**2.63%**
Common Equity	**40.00%**	**9.00%**	**3.60%**
Total	**100.00%**		**6.23%**

[6] TCUC Exh. 1 – Woolridge Dir. at 5.

[7] *See generally* TCUC Exh. 1 – Woolridge Dir.

[8] TCUC Exh. 1 – Woolridge Dir. at 4.

Table 2
TCUC's Alternative Rate of Return Recommendation[9]

Capital Source	Capitalization Ratio	Cost Rate	Weighted Cost Rate
Short-Term Debt	0.90%	2.27%	0.02%
Long-Term Debt	55.48%	4.38%	2.43%
Common Equity	43.62%	8.65%	3.77%
Total	100.00%		6.22%

For ease of comparison, TCUC below sets forth CEHE's proposed cost of capital and capital structure:

CEHE's Rate of Return Recommendation[10]

Capital Source	Capitalization Ratio	Cost Rate	Weighted Cost Rate
Short-Term Debt	0.00%	0.00	0.00%
Long-Term Debt	50.00%	4.38%	2.19%
Common Equity	50.00%	10.40%	5.20%
Total	100.00%		7.39%

B. Depreciation Rates and Depreciation Expense

TCUC further urges the ALJs to adopt the depreciation rates and expenses Mr. David Garrett, TCUC's depreciation expert witness, recommends in his pre-filed direct testimony.[11] Compared to CEHE's depreciation expense, Mr. Garrett's testimony establishes that CEHE's depreciation expense should be reduced by a total of approximately $36.52 million. The effect of TCUC's proposed cost of capital and capital structure is shown in the table below:

[9] TCUC Exh. 1 – Woolridge Dir. at 5.

[10] CEHE Exh. 26 - Robert Hevert Direct Testimony at 54-55.

[11] *See* TCUC Exh. 2 – David Garrett Direct Testimony ("TCUC Exh. 2 - Garrett Dir.").

DEPRECIATION EXPENSE ADJUSTMENTS[12]	Wholesale Transmission	Retail/Dist/Met/CS	TOTAL
Reduce Depreciation Expense Related to Depreciation Rate Adjustments	(5.491)	(31.025)	(36.516)

Adoption of Dr. Woolridge's and Mr. D. Garrett's recommendations, in conjunction with adoption of GCCC's and the Houston Coalition's recommended changes to CEHE's cost of service, produces overall revenues at a level that will permit CEHE a reasonable opportunity to earn a reasonable return on its invested capital used and useful in providing service to the public in excess of the utility's reasonable and necessary operating expenses.[13]

III. Rate of Return [PO Issues 4, 5, 7, 8, 9]

[4] What revenue requirement will give CEHE a reasonable opportunity to earn a reasonable return on its invested capital used and useful in providing service to the public in excess of its reasonable and necessary operating expenses.

TCUC urges the ALJs to adopt a revenue requirement that employs an overall rate of return of 6.23% as recommended by Dr. Woolridge, the details of which are set out below in Table 1:[14]

Table 1
TCUC's Primary Rate of Return Recommendation[15]

Capital Source	Capitalization Ratio	Cost Rate	Weighted Cost Rate
Short-Term Debt	0.00%	0.00%	0.00%
Long-Term Debt	60.00%	4.38%	2.63%
Common Equity	40.00%	9.00%	3.60%
Total	100.00%		6.23%

[12] *See* GCCC Exh. 1 – Kollen Dir. at 14 at Table 1.

[13] *See* Public Utility Regulatory Act ("PURA") §§ 36.051 (Establishing Overall Revenues) and 36.057 (Depreciation, Amortization, and Depletion).

[14] TCUC Exh. 1 – Woolridge Dir. at 4.

[15] *Id.*

Alternatively, TCUC urges the ALJs to adopt Dr. Woolridge's alternative recommended overall rate of return of 6.20% as shown in Table 2:

Table 2
TCUC's Alternative Rate of Return Recommendation[16]

Capital Source	Capitalization Ratio	Cost Rate	Weighted Cost Rate
Short-Term Debt	**0.90%**	**2.27%**	**0.02%**
Long-Term Debt	**55.48%**	**4.38%**	**2.43%**
Common Equity	**43.62%**	**8.65%**	**3.77%**
Total	**100.00%**		**6.22%**

Dr. Woolridge's alternative recommended rate of return is premised on the inclusion of short-term debt in CEHE's capital structure and a ROE, of 8.65%.

[5] What is CEHE's reasonable and necessary cost of providing service calculated in accordance with PURA and Commission rules.

A. Return on Equity [PO Issue 8]

1. Overview

In setting a utility's rates, the return on equity ("ROE") is the allowed rate of profit the regulatory authority determines a regulated company is allowed the opportunity to earn.[17] The ROE is a component of a utility's overall rate of return.[18] PURA mandates that a utility like CEHE is to be allowed a reasonable *opportunity to earn* a reasonable return on its invested capital used and useful in providing service to the public, above its reasonable and necessary expenses.[19] Thus, while often the conversation surrounding a utility's return is that it did not earn its authorized return, or even perhaps that a utility is guaranteed a certain level of profit, the

[16] *Id.* at 5.

[17] TCUC Exh. 1 – Woolridge Dir. at 2.

[18] TCUC Exh. 1 – Woolridge Dir. at 5; *see also* Dr. Woolridge's discussion at TCUC Exh. 1 – Woolridge Dir. at 21-23.

[19] PURA § 36.051.

plain language of PURA dictates otherwise: A utility is to be provided a reasonable *opportunity to earn* a reasonable return.

But as in any competitive business, including a regulated monopoly, no entity is guaranteed a return. Given that the Commission serves as a substitute for competition,[20] the return the Commission establishes likewise is not guaranteed. Instead the Commission need do no more or no less, than to establish CEHE's overall revenue at a level that will allow it a reasonable opportunity to earn a reasonable return over its reasonable and necessary expenses.[21]

In two cases, *Hope* and *Bluefield*,[22] the United States Supreme Court established the guiding principles for determining an appropriate level of profitability for regulated public utilities. In those cases, the Court recognized that the fair rate of return on equity should be: (1) comparable to returns investors expect to earn on other investments of similar risk; (2) sufficient to assure confidence in the company's financial integrity; and (3) adequate to maintain and support the company's credit and to attract capital.[23] All cost-of-capital witnesses in this proceeding cite to *Hope* and *Bluefield* as a guide in their respective proposals.

Unlike determining a utility's cost of debt, to determine the cost of equity, the ALJs and the Commission must turn to economic models and formulas to estimate the cost of equity. Using market data of similar-risk firms these models are intended to estimate the ROE investors require for that risk-class of firms in order to set an appropriate ROE for a regulated firm [24]

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[20] *See* PURA § 11.002(b).

[21] *See* PURA § 36.051.

[22] *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591 (1944) ("*Hope*") and *Bluefield Water Works and Improvement Co. v. Public Service Commission of West Virginia*, 262 U.S. 679 (1923) ("*Bluefield*").

[23] TCUC Exh. 1 – Woolridge Dir. at 2.

[24] *Id.* at 2-3.

2. Return on Equity

In this proceeding, CEHE, through the testimonies of Mr. Robert B. Hevert and Mr. Robert B. McRae, has proposed a hypothetical capital structure of 50% debt and 50% equity; a cost of long-term debt of 4.38%; and a cost of equity of 10.40%, resulting in an overall rate of return of 7.39%.[25] TCUC urges the ALJs to reject Mr. Hevert's and Mr. McRae's recommendations regarding the cost of equity and capital structure, and instead to adopt a revenue requirement that employs a cost of equity of 9.00% as recommended by Dr. Woolridge in his primary recommendation.[26]

For ease of comparison, TCUC below sets forth each party's proposals regarding CEHE's cost of equity:

	TCUC	TCUC (alternative)	TIEC	OPUC	PUCT STAFF	CEHE
Return on Equity	**9.00%**	**8.75%**	**9.25%**	**9.15%**	**9.45%**	**10.40%**

Dr. Woolridge's proposed cost of equity of 9.00% is linked to his proposed capital structure of 60.0% debt and 40% equity; and accepts CEHE's cost of long-term debt of 4.38%. Dr. Woolridge's primary cost-of-capital recommendations are shown in Table 1, below:

Table 1
TCUC's Primary Rate of Return Recommendation[27]

Capital Source	Capitalization Ratio	Cost Rate	Weighted Cost Rate
Short-Term Debt	**0.00%**	**0.00%**	**0.00%**
Long-Term Debt	**60.00%**	**4.38%**	**2.63%**
Common Equity	**40.00%**	**9.00%**	**3.60%**
Total	**100.00%**		**6.23%**

[25] *Id.* at 3.

[26] *Id.* at 4.

[27] *Id.*

TCUC estimates that adopting Dr. Woolridge's proposed ROE of 9.00% with a capital structure of 60% long-term debt and 40% common equity, reduces CEHE's proposed total increase in revenue of approximately $161.1 million, by about $96.1 million.[28] The effect of TCUC's proposed cost of capital and capital structure on CEHE's service offerings is shown in the table below:

Rate of Return Adjustments[29]	Wholesale Transmission	Retail Dist/Met/CS	TOTAL
Reflect Capital Structure of 40% Equity and 60% Debt	(20.242)	(32.894)	(53.136)
Reflect Return on Equity of 9.0%	(16.371)	(26.604)	(42.976)
TOTAL	**(36.613)**	**(59.498)**	**(96.112)**

Based on the Discounted Cash Flow Model ("DCF"), Dr. Woolridge's DCF analysis suggested a cost of equity of 8.50% (based on his Electric Proxy Group) and 8.65% (based on Mr. Hevert's Proxy Group), and a cost of equity of 7.30% under his CAPM analysis. However, Dr. Woolridge proposed a cost of equity of 9.00% to recognize that his DCF and CAPM-derived range for his cost of equity is below the authorized ROEs for electric delivery companies nationally. His recommendation to employ a 9.00% ROE: (1) gives weight to the higher authorized ROEs for electric delivery companies; and (2) recognizes the concept of 'gradualism' in which authorized ROEs are adjusted on a gradual basis to reflect capital market data.[30]

a. Capital Market Conditions

(1) Declining Authorized ROEs

Dr. Woolridge's testimony established two key points in determining a ROE for CEHE. First, across the Nation, the trend in authorized ROEs that regulatory agencies have been

[28] *See* GCCC Exh. 1 –Kollen Dir. at 14 at Table 1.

[29] *Id.*

[30] TCUC Exh. 1 – Woolridge Dir. at 49.

approving, is downward.[31] The uncontroverted evidence established that from 2000 to 2018, authorized ROEs for electric utilities have declined from an average of 10.01% in 2012, 9.8% in 2013, 9.76% in 2014, 9.58% in 2015, 9.60%, and 9.68% in 2017, 9.56% in 2018, and 9.57% in the first quarter of 2019.[32] Moreover, authorized ROEs for companies like CEHE, a "wires-only" company, have consistently been 30 to 50 basis points below those of vertically integrated utilities because of the lesser risk "wires-only" companies face.[33] In 2018, the average authorized ROE for electric delivery companies was 9.38%.[34]

Additionally, since about November 2008, when yields on public utility bonds peaked at 7.75% during the "Great Recession," yields on utility bonds have declined dropping below 4% on four occasions - in mid-2013, in the first quarter of 2015, in the summer of 2016, and in late 2017 and hovering at about 4.0% as of the second quarter of 2019.[35]

Likewise, the average dividend yields for electric utilities declined from 5.3% to 3.4% between the years 2000 to 2007, increased to over 5.0% in 2009, and have declined steadily since that time. The average dividend yield was 3.2% in 2018.[36]

Finally, earned returns on common equity for electric utilities have declined gradually over the years. In the past three years, the average earned ROE for the group has been in the 9.0% to 10.0% range. The average market-to-book ratios for this group declined to about 1.1X in 2009 during the financial crisis and have increased since that time. As of 2018, the average market-to-book for the group was 1.80X. A market-to-book ratio greater than 1.0X means that

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31 *Id.* at 12-13.

32 *Id.* at 13.

33 TCUC Exh. 1 – Woolridge Dir. at 13-14.

34 *Id.* at 14.

35 *Id.* at 24.

36 *Id.* at 25.

returns on common equity are greater than the cost of capital.[37] As Dr. Woolridge's testimony established, electric utilities' returns on equity have exceeded a factor of 1X for over a decade, are more than necessary to meet investors' required returns, and also means that customers have been paying more than necessary to support an appropriate profit level for regulated utilities as required by PURA § 36.051.[38]

(2) Stable to declining interest rates

Second, despite the Federal Reserve's moves to increase the federal funds rate, interest rates and capital costs have remained at historically low levels and are likely to remain low for some time.[39] Nonetheless, Mr. Hevert's analyses and ROE results and recommendations continue to reflect the assumption of higher interest rates and capital costs, a prediction he has made in this proceeding in at least three recent proceedings before Texas regulatory agencies, predictions that have not borne out.[40]

As Dr. Woolridge explained, "As the economy has improved, with lower unemployment, steady but slow GDP growth, the Federal Reserve has increased the target federal funds rate on eight additional occasions: December 2016; March, June, December of 2017; and March, June, September, and December of 2018."[41]

Yet, from 2015 – 2019, the period over which the Federal Reserve increased the federal funds rate, the 30-year Treasury yield hit its lowest point in the summer of 2016 and

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37 *Id.* at 23-24.

38 *Id.* at 23-25; Exhibit JRW-4 and Exhibit JRW-5.

39 TCUC Exh. 1 – Woolridge Dir. at 5. *See also* TCUC Exh. 96 (showing U.S. Treasury yields from Jan. 1, 2019 to Jun. 24, 2019 declining); and TCUC Exh. 97 (showing the probability that the Federal Reserve would increase interest rates at its upcoming meetings through May 29, 2020, at zero).

40 TCUC Exh. 92 (Hevert Direct Testimony in Gas Utility Docket 10779, Atmos Energy, Inc.'s 2018 Rate Case before the Railroad Commission of Texas); TCUC Exh. 93 (Hevert Direct Testimony in PUCT Docket No. 47527 Southwestern Public Service Company's 2017 Rate Case); and TCUC Exh. 94 (Hevert Direct Testimony in PUCT Docket No. 46957 (Oncor Energy's 2017 Rate Case).

41 TCUC Exh. 1 – Woolridge Dir. at 8.

subsequently increased with improvements in the economy. On November 8, 2016, financial markets moved significantly following the results in the U.S. presidential election. "The stock market gained more than 10% and the 30-year Treasury yield increased about 50 basis points to 3.2% by year-end 2016. However, over the past three years, even as the Federal Reserve has increased the federal funds rate, the yield on thirty-year bonds has remained in the 2.8% to 3.3% range."[42]

The record establishes that, notwithstanding the Federal Reserve's increases in short-term interest rates, long-term interest rates, and capital costs have not increased in any meaningful way.[43] Nonetheless, Mr. Hevert in his testimony in this proceeding and in three recent proceedings in Texas continues to predict higher interest rates.[44] But Mr. Hevert's projections repeatedly have proven wrong.

In a recent rate case before the Railroad Commission of Texas ("Railroad Commission"), Mr. Hevert projected interest rates of 3.05% to 4.30%, to support his recommended ROE of 10.50%.[45] Though the issue of a proper ROE was arrived at by settlement, the ROE the Railroad Commission approved was 9.80%.

In PUCT Docket No. 47527, a rate case filed by Southwestern Public Service Company ("SPS"), Mr. Hevert projected interest rates of 2.83% to 3.38%, to support a ROE of 10.25%.[46]

The Commission approved a ROE of 9.50%.[47]

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42 *Id.*

43 TCUC Exh. 1 – Woolridge Dir. at 9-10.

44 TCUC Exhs. 92, 93, and 94 (Mr. Hevert's prior testimonies showing Mr. Hevert's projections of higher interest rates to justify a higher ROE).

45 TCUC Exh. 92 (Hevert Direct Testimony in Gas Utility Docket No. 10779 – Atmos Energy, Inc.'s 2018 rate case).

46 TCUC Exh. 93 (Hevert Direct Testimony in PUCT Docket No. 47527 – SPS 2017 Rate Case). *See* Preliminary Order in Docket No. 47527 at 1 (Sep. 29, 2017).

In PUCT Docket No. 46957, Oncor Energy's 2017 rate case, in support of his recommended ROE of 10.25%,[48] Mr. Hevert relied on projected bond yields of 3.05% to 3.42%. Mr. Hevert again projected interests rates would rise.[49]

In each case, Mr. Hevert ignored then-current market indicators and relied on his projections of higher interest rates to support his proposed ROE. And in each case Mr. Hevert was wrong. Moreover, as Mr. Hevert agreed, in the DCF, CAPM, and BYRP analyses, and even in his "Expected Earnings" analysis, higher interest rates translate into higher ROEs.[50]

Further, as Dr. Woolridge observed:

> Economists have been predicting that interest rates would be going up for a decade, and they consistently have been wrong. ... Two other financial publications produced studies on how economists consistently predict higher interest rates, and yet they too, have been wrong. ... The results [of the first study] demonstrated that economists consistently predict that interest rates will go higher, and interest rates have not fulfilled those predictions. The [second] study, entitled "Interest Rate Forecasters are Shockingly Wrong Almost All of the Time," indicates that economists are continually forecasting that interest rates are going up, yet they do not.[51]

Consequently, TCUC urges the ALJs to reject Mr. Hevert's proposed ROE; his recommended ROE is flawed, by among other factors, his reliance on non-occurring increases in interest rates and his seemingly perennially inflated ROEs.

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47 TCUC Exh. 93 (Hevert Direct Testimony in PUCT Docket No. 47527 – SPS 2017 Rate Case). The Commission approved a settlement in Docket 47527 that included a ROE of 9.50%. *See* Final Order in Docket No. 47527 at Finding of Fact No. 58 (Dec. 10, 2018).

48 *See* PUCT Docket No. 46957, *Application of Oncor Electric Delivery Company, LLC for Authority to Change Rates*, Preliminary Order at 1 (Apr. 13, 2017). Ultimately, the Commission approved a settlement that included a ROE of 9.80%. *See* Final Order at Finding of Fact 32 (Oct. 13, 2017).

49 TCUC Exh. 94 (Hevert Direct Testimony in PUCT Docket No. 46957 – Oncor 2017 Rate Case).

50 Transcript-Hearing on Merits ("HOM Tr.") at 751.

51 TCUC Exh. 1 – Woolridge Dir. at 10-11.

So, for purposes of setting CEHE's cost of equity in this proceeding, TCUC urges the ALJs to set CEHE's cost of equity based on current indicators of market-cost rates and not speculate on the future direction of interest rates. As Dr. Woolridge testified, "It is practically impossible to accurately forecast interest rates and prices of investments that are determined in financial markets, such as interest rates and prices for stocks and commodities."[52]

b. Proxy Groups

Dr. Woolridge and Mr. Hevert each based their respective recommended ROEs in part on proxy companies for CEHE. Dr. Woolridge's "Electric Proxy Group" is comprised of twenty-eight companies that Dr. Woolridge found comparable to CEHE.[53] Mr. Hevert's Proxy Group is made up of twenty-four utilities.[54] The financial metrics of the companies in Dr. Woolridge's Electric Proxy Group and those in Mr. Hevert's Proxy Group show that the riskiness of the two proxy groups using five different risk measures published by *Value Line* – Beta, Financial Strength, Safety, Earnings Predictability, and Stock Price Stability – suggest that the two proxy groups are very similar in risk.

The crucial factor with regard to either Dr. Woolridge's Electric Proxy Group or Mr. Hevert's Proxy Group, is that the investment risk associated with investing in CEHE is a little lower than the average investment risk of the companies in the proxy groups.[55] The unrefuted evidence establishes that:

> CEHE has S&P and Moody's issuer credit ratings of BBB+ and A3. The average S&P and Moody's issuer credit ratings for the Electric and Hevert Proxy Groups

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[52] *Id.* at 12. Moreover, if interest rates were continually projected to increase as Mr. Hevert presumes, "investors would not be buying long-term Treasury bonds or utility stocks at their current yields if they expected interest rates to suddenly increase, thereby producing higher yields and negative returns." *Id.*

[53] TCUC Exh. 1 – Woolridge Dir. at 15.

[54] *Id.*

[55] *Id.* at 16.

are BBB+ and Baa1, respectively. Therefore, given that: (1) the Company's S&P rating is equal to the average of the proxy groups, and (2) the Company's Moody's rating is one notch better than the average of the proxy groups.[56]

Thus, Mr. Hevert's proposed ROE of 10.4% is not only an outlier relative to the cost-of-capital witnesses' recommended ROEs, but it is also higher than the ROEs in his own Proxy Group.

c. DCF Model Results

Dr. Woolridge relied primarily on his DCF analysis to estimate CEHE's cost of equity and employed the "constant-growth" DCF model to estimate CEHE's cost of equity.[57] Dr. Woolridge testified that the DCF Model is used widely by investment firms. Dr. Woolridge describes the DCF model as one that postulates that the current stock price is equal to the discounted value of all future dividends that investors expect to receive from investment in the firm. As such, stockholders' returns ultimately result from current as well as future dividends.[58] "The DCF model presumes that earnings that are not paid out in the form of dividends are reinvested in the firm so as to provide for future growth in earnings and dividends. The rate at which investors discount future dividends, which reflects the timing and riskiness of the expected cash flows, is interpreted as the market's expected or required return on the common stock. Therefore, this discount rate represents the cost of common equity."[59]

Based on his analysis, Dr. Woolridge calculated the dividend yields for the companies in the proxy group using the current annual dividend and the 30-day, 90-day, and 180-day average

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[56] *Id.*

[57] TCUC Exh. 1 – Woolridge Dir. at 27; 29-30.

[58] *Id.* at 27.

[59] *Id.*

stock prices.[60] Using both the means and medians, the dividend yields range from 3.0% to 3.4% for the Dr. Woolridge's Electric Proxy Group and 3.0% to 3.3% for the Hevert Proxy Group. Given these results Dr. Woolridge used dividend yields of 3.3% and 3.2% for his Electric Proxy Group and the Hevert Proxy Group, respectively to estimate CEHE's cost of equity.[61]

Dr. Woolridge next adjusted the dividend yield by one-half (1/2) of the expected growth to reflect growth over the coming year.[62] For his growth rate, Dr. Woolridge reviewed *Value Line's* historical and projected growth rate estimates for earnings per share ("EPS"), dividends per share ("DPS"), and book value per share ("BVPS"). He utilized the average EPS growth rate forecasts of Wall Street analysts as provided by Yahoo, Reuters and Zacks.

Lastly, he assessed prospective growth as measured by prospective earnings retention rates and earned returns on common equity.[63] Dr. Woolridge testified that in the DCF Model, the growth rate is the long-term projected growth rate in EPS, DPS, and BVPS. Therefore, in developing an equity cost rate using the DCF model, the projected long-term growth rate is the projection used in the DCF model,[64] and warned against relying exclusively on EPS forecasts prepared by Wall Street analysts in identifying a DCF growth rate.

> First, the appropriate growth rate in the DCF model is the dividend growth rate, not the earnings growth rate. Nonetheless, over the very long term, dividend and earnings will have to grow at a similar growth rate. Therefore, consideration must be given to other indicators of growth, including prospective dividend growth, internal growth, as well as projected earnings growth. Second, a study by Lacina, Lee, and Xu (2011) has shown that analysts' three-to-five year EPS growth rate forecasts are not more accurate at forecasting future earnings than naïve random walk forecasts of future earnings. ... Finally, and most significantly, it is well

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60 *Id.* at 30; Exhibit JRW-7.

61 *Id.*

62 *Id.* at 30-31.

63 *Id.* at 32.

64 *Id.* at 35.

> known that the long-term EPS growth-rate forecasts of Wall Street securities analysts are overly optimistic and upwardly biased. This has been demonstrated in a number of academic studies over the years. ... Hence, using these growth rates as a DCF growth rate will provide an overstated equity cost rate. On this issue, a study by Easton and Sommers (2007) found that optimism in analysts' growth rate forecasts leads to an upward bias in estimates of the cost of equity capital of almost 3.0 percentage points.[65]

Though CEHE takes exception to Dr. Woolridge's conclusion that Wall Street analysts' forecasts of growth are upwardly biased, the data Dr. Woolridge presented establishes the upward bias. The upward bias in analysts' long-term EPS growth rate forecasts is in turn reflected in stock prices. More importantly, because in the DCF Model the equity cost rate is a function of the dividend yield and expected growth rate, Dr. Woolridge adjusted the DCF growth rate downward from the projected EPS growth rate to reflect the upward bias in the DCF model.[66]

Dr. Woolridge's analysis reviewed the 5- and 10-year *historical* growth rates of the companies in his Electric Proxy Group and Mr. Hevert's Proxy Group; the *projected* growth rates as shown by Value Line for the two proxy groups; and reviewed the proxy-groups' companies as measured by analysts forecasts of expected 5-year growth in earnings per share.[67] For the *historical* growth rates for the companies in his Electric Proxy Group and in Mr. Hevert's Proxy Group, Dr. Woolridge found the median historical growth measures for EPS, DPS, and BVPS for the Electric Proxy Group to range from 4.0% to 6.5%, with an average of the medians of 4.7%. For the Hevert Proxy Group the historical growth measures in EPS, DPS, and BVPS,

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[65] *Id.* at 34.

[66] *Id.* at 35.

[67] *Id.* at 36.

as measured by the medians, ranged from 4.0% to 6.0%, with an average of the medians of 4.7%.[68]

For Dr. Woolridge's *projected* growth rates for his Electric Proxy Group, his analysis found the medians ranged from 4.0% to 6.0%, with an average of the medians of 5.2%. The range of the medians for the Hevert Proxy Group were from 4.0% to 6.0%, with an average of the medians of 5.2%.[69]

In terms of a sustainable growth rate, Dr. Woolridge found the median prospective sustainable growth rates for the Electric and Hevert Proxy Groups, to be 3.8% and 3.6%, respectively.[70]

Finally, for the proxy-groups companies as measured by analysts' forecasts of expected 5-year growth in earnings per share, Dr. Woolridge's analysis determined the mean/median of analysts' projected EPS growth rates for the Electric and Hevert Proxy Groups to be 5.0%/5.2% and 5.3%/5.4%, respectively.[71]

Based on his analysis, Dr. Woolridge concluded that his DCF analysis suggested a cost of equity of 8.50% (based on the growth rates for his Electric Proxy Group) and 8.65% (based on the growth rates for Mr. Hevert's Proxy Group).[72] Dr. Woolridge's findings are summarized in Table 3, below:

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[68] *Id.*

[69] *Id.*

[70] *Id.*

[71] *Id.* at 36-37.

[72] *Id.* at 38.

Table 3
DCF-Derived Equity Cost Rate/ROE[73]

	Dividend Yield	1 + ½ Growth Adjustment	DCF Growth Rate	Equity Cost Rate
Electric Proxy Group	**3.30%**	**1.02550**	**5.10%**	**8.50%**
Hevert Proxy Group	**3.20%**	**1.02675**	**5.35%**	**8.65%**

d. CAPM Model

Dr. Woolridge also employed the Capital Asset Pricing Model ("CAPM") to estimate CEHE's cost of equity.[74] The CAPM Model is a risk premium approach to gauging a firm's cost of equity capital. According to the risk premium approach, the cost of equity is the sum of the interest rate on a risk-free bond (shown as R_f) and a risk premium (RP).[75] The yield on long-term U.S. Treasury securities is normally used as the risk-free investment (R_f); and in the CAPM Model the risk measured is the risk associated with owning common stock in a company.[76]

There are two types of risk associated with a stock: firm-specific risk or unsystematic risk, and market or systematic risk, which is measured by a firm's beta. The only risk that investors receive a return for bearing is systematic risk.[77] To estimate the required return or cost of equity using the CAPM requires three inputs: the risk-free rate of interest (R_f), the beta (ß), and the expected equity or market risk premium $[E(R_m) - (R_f)]$.[78]

With regard to the first factor, the interest rate on a risk free bond, using the CAPM Model, Dr. Woolridge's analysis found the yield on 30-year U.S. Treasury bonds to be in the 2.5% to 4.0% range over the 2013–2019 time period; he also found that the current 30-year

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[73] *Id.*

[74] *Id.* at 38.

[75] *Id.* at 38-39.

[76] *Id.* at 39.

[77] *Id.*

[78] *Id.*

Treasury yield is approximately in the middle of this range. Given the recent range of yields, he elected to use the top end of the range as his risk-free interest rate, employing 4.0% as the risk-free rate, or R_f, in his CAPM analysis. Crucially, his CAPM analysis excludes forecasts of higher interest rates because as he observed, forecasts of interest rates have been notoriously wrong for a decade.[79]

For the beta (ß) input, Dr. Woolridge explained that beta is a measure of the systematic risk of a stock. He explained that the market, usually taken to be the S&P 500, has a beta of 1.0. The beta of a stock with the same price movement as the market also has a beta of 1.0. A stock whose price movement is greater than that of the market, such as a technology stock, is riskier than the market and has a beta greater than 1.0. A stock with below average price movement, such as that of a regulated public utility, is less risky than the market and has a beta less than 1.0.[80] Dr. Woolridge concluded that the median betas for the companies in his Electric Proxy Group and Mr. Hevert's Proxy Groups to be the same: a beta of 0.60.[81] As noted above, a stock with a beta less than 1.0 suggests that company is less risky than the overall market. Here, CEHE's beta is well below a beta of 1.0 and thus is less risky than the overall market.

For the market-risk-premium ("MRP") input into his CAPM analysis, Dr. Woolridge first explained that the MRP is equal to the expected return on the stock, minus the risk-free rate of interest. Dr. Woolridge explained that the MRP is the difference in the expected total return between investing in equities and investing in "safe" fixed-income assets, such as long-term government bonds.[82]

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79 *Id.* at 40.

80 *Id.*

81 *Id.* at 44; Exhibit JRW-8.

82 *Id.* at 41.

Ultimately, based on his CAPM analysis, Dr. Woolridge presented a summary of the results of the MRP studies he reviewed, including the results of: (1) the various studies of the historical risk premium, (2) *ex ante* MRP studies, (3) MRP surveys of CFOs, financial forecasters, analysts, companies and academics, and (4) the Building Blocks approach to the MRP. His analysis found the median MRP to be 4.83%. However, these studies covered the period over the past 15 years and included the financial crisis of 2008, and the data for the early 2000s, when the market peaked.[83]

Because the studies of MRPs Dr. Woolridge reviewed included the period of the Great Recession, and to eliminate the effects of the Great Recession, Dr. Woolridge eliminated all studies dated before January 2, 2010. The median for this subset of studies is 4.87%.[84] Dr. Woolridge's assessment of MRP studies and surveys showed the following:

> Historic Stock and Bond Returns - Historic stock and bond returns suggest an MRP in the 4.40% to 6.26% range, depending on whether one uses arithmetic or geometric mean returns.
>
> Ex Ante Models - MRP studies that use expected or ex ante return models, indicates MRPs in the range of 4.49% to 6.00%.
>
> Surveys - MRPs developed from surveys of analysts, companies, financial professionals, and academics find lower MRPs, with a range from 1.85% to 5.7%.[85]

In light of his analysis, Dr. Woolridge concluded that the appropriate MRP in the U.S. is in the 4.0% to 6.0% range. Dr. Woolridge used an expected MRP of 5.50%, which is in the upper end of the range, as the MRP. He gave most weight to the MRP estimates of the CFO

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[83] *Id.*

[84] *Id.*

[85] *Id.* at 44-45.

Survey, Duff & Phelps, the 2019 Dimson, Marsh, Staunton - Credit Suisse Report the Fernandez survey, and Damodaran.[86]

Based on his CAPM analysis, Dr. Woolridge found CEHE's cost of equity to be 7.3% for both his Electric Proxy Group and for Mr. Hevert's Proxy Group.[87] Dr. Woolridge's CAPM results are summarized in Table 4, below:

Table 4
CAPM-Derived Equity Cost Rate/ROE[88]
$K = (R_f) + ß * [E(R_m) - (R_f)]$

	Risk-Free Rate	Beta	Equity Risk Premium	Equity Cost Rate
Electric Proxy Group	**4.0%**	**0.60**	**5.5%**	**7.3%**
Hevert Proxy Group	**4.0%**	**0.60**	**5.5%**	**7.3%**

e. Dr. Woolridge's Primary and Alternative Recommended ROEs

Ultimately, though Dr. Woolridge's analysis suggested a cost of equity in the range of 7.30% (CAPM) to 8.65% (DCF), Dr. Woolridge recommended a cost of equity of 9.00%. While the range of 7.30% to 8.65% cost of equity accurately reflects current capital market data, Dr. Woolridge recognized that this range is below the authorized ROEs for electric delivery companies nationally, and thus, his primary ROE for CEHE is 9.0%. Dr. Woolridge's recommendation: (1) gives weight to the higher authorized ROEs for electric delivery companies; and (2) recognizes the concept of 'gradualism' in which authorized ROEs are adjusted on a gradual basis to reflect capital market data.

However, Dr. Woolridge's proposed ROE of 9.00% is linked to his proposed hypothetical capital structure of 60% long-term debt and 40% common equity. Should the ALJs

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[86] *Id.* at 47.

[87] *Id.* at 48.

[88] *Id.*

determine that use of a hypothetical capital structure is inappropriate for CEHE, TCUC urges the ALJs to adopt Dr. Woolridge's alternative recommended overall rate of return of 6.22%, which is premised on CEHE's actual capital structure for the year 2018 and is shown in Table 2, below:

Table 2
TCUC's Alternative Rate of Return Recommendation[89]

Capital Source	Capitalization Ratio	Cost Rate	Weighted Cost Rate
Short-Term Debt	**0.90%**	**2.27%**	**0.02%**
Long-Term Debt	**55.48%**	**4.38%**	**2.43%**
Common Equity	**43.62%**	**8.65%**	**3.77%**
Total	**100.00%**		**6.22%**

Dr. Woolridge's alternative recommended rate of return is premised on the inclusion of short-term debt in CEHE's capital structure and a ROE, of 8.65%. TCUC observes that CEHE's actual capital structure, coupled with Dr. Woolridge's alternative ROE of 8.65%, results in an overall rate of return markedly of 6.22%, which is markedly similar to his primary recommendation of 6.23%.

A cost of equity of 9.00%, Dr. Woolridge's primary recommendation, or a cost of equity of 8.65%, Dr. Woolridge's alternative recommendation, is fully supported by the record. As Dr. Woolridge noted:

1. CEHE's investment risk, as indicated by its S&P and Moody's credit ratings, is below the averages of the Dr. Woolridge's Electric Proxy Group and Mr. Hevert's Proxy Group;

2. Capital costs for utilities, as indicated by long-term utility bond yields, are still at historically low levels. In addition, given low inflationary expectations and slow global economic growth, interest rates are likely to remain at low levels for some time;

3. The electric utility industry is among the lowest risk industries in the U.S. as measured by beta. Most notably, the betas for electric utilities have been declining in

[89] *Id.* at 5.

recent years, which indicates the risk of the industry has declined. Overall, the cost of equity capital for this industry is the lowest in the U.S., according to Dr. Woolridge's analysis using the CAPM;

4. Dr. Woolridge's proposed cost of equity is on the high end of the range of his analyses;

5. The authorized ROEs for electric utility have declined in recent years. The authorized ROEs for electric utilities have declined from 10.01% in 2012, to 9.8% in 2013, to 9.76% in 2014, 9.58% in 2015, 9.60% in 2016, and 9.68% in 2017, 9.56% in 2018, and 9.57% in the first quarter of 2019, according to Regulatory Research Associates. The trend has been towards lower ROEs, and the norm now is below ten percent.

6. The authorized ROEs for delivery or distribution companies like CEHE have consistently been below those of vertically integrated utilities. These authorized ROEs have been 30-50 basis points below those of all electric utilities in recent years. In 2018, the average authorized ROE for electric delivery companies was 9.38%.[90]

f. Critique of Mr. Hevert's ROE Recommendations

Dr. Woolridge found numerous flaws in Mr. Hevert's analysis and recommendations regarding the cost of equity for CEHE. Critically, Mr. Hevert's recommended ROE of 10.40% is supported only by his CAPM review and even then only by a single set of data points from Value Line.[91] He provides no details on how he weighted his equity cost-rate results to arrive at his recommended ROE of 10.4%. Beyond the narrow view Mr. Hevert undertook in his CAPM analysis, Mr. Hevert's CAPM analyses employs an excessively high, projected long-term risk-free interest rate. Second, his MRPs of 10.72% and 14.10% are exaggerated and do not reflect current market fundamentals.[92] Based on these figures, he finds a CAPM equity cost rate range from 8.37% to 11.54%.

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[90] *Id.* at 49-50.

[91] *Id.* at 53.

[92] *Id.* at 60.

Further, Mr. Hevert EPS growth-rate projections and the resulting expected market returns and MRPs include highly unrealistic assumptions regarding future economic and earnings growth and stock returns. Mr. Hevert's EPS growth-rate projections of 11.55% and 15.00% are inconsistent with both historic and projected economic and earnings growth in the U.S for several reasons. Instead, long-term EPS and economic growth is about one-half of Mr. Hevert's projected EPS growth rates of 11.55% and 15.00%, and have been in the 6% to 7% range.[93] Long-term EPS and GDP growth are directly linked and more recent trends in GDP growth, as well as projections of GDP growth, suggest slower economic and earnings growth in the future.[94] As Dr. Woolridge noted, Mr. Hevert's growth estimates suggest that companies in the U.S. would be expected to increase their growth rate of EPS by 100% in the future, and maintain that growth indefinitely in an economy that is expected to grow at about one-third of his projected growth rates, both unrealistic expectations.[95]

Further, real GDP growth has gradually declined from the 5.0% to 6.0% range in the 1960s to the 2.0% to 3.0% range during the most recent five-year period. And inflation, the second component of nominal GDP growth, has declined from above 10% to about 4% in the 1980s, and has been in the 2.0% range or below over the past five years.[96] As Dr. Woolridge's critique of Mr. Hevert's analysis showed, "[w]hereas the 50-year compounded GDP growth rate is 6.63%, there has been a monotonic and significant decline in nominal GDP growth over subsequent 10-year intervals. These figures strongly suggest that nominal GDP growth in recent decades has

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93 *Id.* at 62.

94 *Id.* at 62-63.

95 *Id.* at 62.

96 *Id.* at 63.

slowed and that a figure in the range of 4.0% to 5.0% is more appropriate today for the U.S. economy."[97]

Moreover, long-term projections of GDP also indicate slower GDP growth in the future in the range of 4.0% to 4.4%. The trends and projections indicating slower GDP growth make Mr. Hevert's MRPs, using analysts' projected EPS growth rates, look even more unrealistic. Mr. Hevert's projected EPS growth rates of 11.55% and 15.00% are almost three times projected GDP growth.[98]

To achieve the ROEs Mr. Hevert recommends, expected returns would need to be 13.75% (using Bloomberg three- to five-year EPS growth rate estimates) and 17.14% (using *Value Line* three- to five-year EPS growth rate estimates). On their face, these results are at best questionable, but more to the point, unrealistic in today's market environment.[99] As Dr. Woolridge testified:

> The compounded annual return in the U.S. stock market is about 10% (9.49% according to Damodaran between 1928-2018). ... Mr. Hevert's *Value Line* CAPM results assume that return on the U.S. stock market will be more than 50% higher in the future than it has been in the past!!! The extremely high expected stock market return, and the resulting MRP and equity cost rate results, is directly related to the 15.00% expected EPS growth rate.[100]

Mr. Hevert in his CAPM analysis has used the three-to-five- year projected EPS growth rates with Bloomberg and *Value Line* adjusted betas, despite the fact that utility betas do not regress to 1.0 over three-to-five year time periods, thus making it is erroneous to use adjusted

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[97] *Id.* at 64.

[98] *Id.* at 64-65.

[99] *Id.* at 60.

[100] *Id.* at 70.

betas.[101] As Dr. Woolridge noted, "The error is that utility betas do not regress to 1.0 over three- to five-year periods."[102]

Finally, Mr. Hevert gives little to no weight to the constant-growth results from his DCF analysis and relies exclusively on a highly optimistic and upwardly biased forecasts for earnings-per-share growth rate.[103] By contrast, Dr. Woolridge reviewed thirteen growth rate measures, including historical and projected growth rate measures, and evaluated growth in dividends, book value, and earnings per share.[104]

Moreover, the average of Mr. Hevert's DCF results is 9.26%, to which he apparently gave no weight.[105] Also, as Dr. Woolridge testified, the appropriate growth rate in the DCF model is the *dividend* growth rate, not the *earnings* growth rate. Thus, as Dr. Woolridge did, consideration must be given to other indicators of growth, including historical prospective dividend growth, internal growth, as well as projected earnings growth.[106]

With regard to Mr. Hevert's Bond Yield Risk Premium ("BYRP") analysis, it too is flawed. Mr. Hevert's risk premium in his BYRP method is based on the historical relationship between the yields on long-term Treasury yields and authorized returns on equity for electric utility companies.[107] However, Mr. Hevert's BYRP analysis, instead of measuring investor behavior, is a gauge of the *regulators'* actions. Capital costs are determined in the *market* place through the financial decisions of investors and are reflected in such fundamental factors as

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[101] *Id.* at 54.

[102] *Id.* at 71.

[103] *Id.* at 58.

[104] *Id.* at 54.

[105] *Id.* at 57-58; *see also* TCUC Exhs. 79 and 80 (Mr. Hevert's response to TCUC's RFI showing Mr. Hevert provides no data by which to determine how, if at all, he weighted his DCF analysis versus his CAPM analysis).

[106] TCUC Exh. 1 – Woolridge Dir. at 57-58.

[107] *Id.* at 55.

dividend yields, expected growth rates, interest rates, and investors' assessment of the risk and expected return of different investments.[108]

Further, Mr. Hevert's BYRP methodology produces an inflated measure of the risk premium because his approach uses historical authorized ROEs and Treasury yields, and the resulting risk premium is applied to projected Treasury yields.[109] Since Treasury yields are always forecasted to increase, the resulting risk premium would be smaller if done correctly, which would be to use projected Treasury yields in the analysis rather than historic Treasury yields.[110]

Finally, because electric utility companies have been selling at market-to-book ratios in excess of 1.0, the risk premium in Mr. Hevert's BYRP analysis is inflated as a measure of investor's required risk premium,. This indicates that the authorized rates of return have been greater than the return that investors require.[111] Therefore, the risk premium produced from Mr. Hevert's BYRP study is overstated as a measure of investor return requirements and concomitantly produces an inflated equity cost rate.[112]

Regarding Mr. Hevert's Expected Earnings approach to estimate CEHE's cost of equity, Mr. Hevert computes the expected ROE as forecasted by *Value Line* for his proxy group as well as for *Value Line*'s universe of electric utilities. However, this so-called "Expected Earnings" approach does not measure the market cost of equity capital because there is no way to assess whether the earnings are greater than or less than the earnings investors require, and therefore this approach does not measure the market cost of equity capital.[113]

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[108] *Id.* at 55; 75.

[109] *Id.* at 55; 74-75.

[110] *Id.* at 75.

[111] *Id.* at 55; 75.

[112] *Id.* at 75.

[113] *Id.* at 76.

Indeed, Mr. Hevert's Expected Earnings approach is independent of most cost of capital indicators. The ROE ratios are an *accounting* measure that does not measure investor return requirements. Investors had no opportunity to invest in the proxy companies at the accounting book value of equity. That is, the equity's book value *to investors* is tied to *market* prices, which means that investors' required return on market-priced equity aligns with expected return on book equity only when the equity's market price and book value are aligned. Therefore, a market-based evaluation of the cost of equity to investors in the proxies requires an associated analysis of the proxies' market-to-book ("M/B") ratios.[114]

Mr. Hevert's Expected Earnings approach does not measure the *market* cost of equity capital, is independent of most cost of capital indicators and, as Dr. Woolridge's testimony underscored, has a number of other empirical issues. Therefore, the Commission should ignore Mr. Hevert's "Expected Earnings" approach in determining the appropriate ROE for CenterPoint Houston.

At the end of the day, TCUC urges the ALJs to reject Mr. Hevert's recommendations regarding CEHE's cost of equity and urges the ALJs to adopt Dr. Woolridge's primary recommendation regarding CEHE's cost of equity and capital structure, or alternatively, Dr. Woolridge's alternate recommended ROE and capital structure.

B. Cost of Debt [PO Issue 8]

No party disputed CEHE's cost of long-term debt. The evidence shows that CEHE's actual, weighted cost of long-term debt is 4.38%.

However, as is discussed below in the Section III.C. of the briefing outline, CEHE employs short-term debt to finance its operations. The evidence establishes that CEHE's

[114] *Id.* at 76-77.

average, daily-cost rate for the short-term debt CEHE employed in 2018 was 2.27%.[115] No party, including CEHE, disputed Dr. Woolridge's calculation of the cost of short-term debt.

Thus, based on Dr. Woolridge's alternative recommendation to include short-term debt in CEHE's capital structure, the cost of short-term debt to use in calculating CEHE's overall rate of return is 2.27%.

C. Capital Structure [PO Issue 7]

3. [7] what is the appropriate debt-to-equity capital structure for CEHE?

TCUC urges the ALJs to adopt a hypothetical capital structure of 60% long-term debt and 40% equity with a corresponding cost of equity of 9.00%, and alternatively to adopt a capital structure that includes short-term debt, resulting a capital structure of 0.90% short-term debt, 55.48% long-term debt, and 43.62% equity, with a corresponding cost of equity of 8.65%.[116]

By comparison, Mr. Robert B. McRae, CEHE's witness, proposed a hypothetical capital structure consisting of 50% long-term debt and 50% common equity. However, Mr. McRae's proposed capital structure has a higher common equity ratio than CEHE's actual capitalization, as well as the average of the Dr. Woolridge's Electric Proxy Group and Mr. Hevert's Proxy Group.[117]

Through the testimony of Mr. Robert B. McRae, CenterPoint criticizes Dr. Woolridge's capital structure stating that Dr. Woolridge has made no effort to establish that CenterPoint Houston could maintain its current credit rating with a 40% equity ratio and his proposed ROE.[118] But no further statement is necessary; the evidence from CEHE's own records

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[115] *Id.* at 20.

[116] *Id.* at 4-5.

[117] *Id.* at 5.

[118] CEHE Exh. 27 - Robert McRae Direct Testimony at 11 ("CEHE Exh. 27 - McRae Dir.").

establishes that even with equity capitalization ratios at or below 40%, CEHE has maintained its credit ratings and accessed the capital markets.[119]

1. A capital structure comprised of 60% debt and 40% equity is consistent with CEHE's historical capitalization

Dr. Woolridge's primary recommendation is that the ALJs adopt a capital structure comprised of 60% debt and 40% equity; this is consistent with CEHE's historical capitalization. His primary recommendation is accompanied with a return on equity of 9.0%.

Dr. Woolridge's testimony established that CEHE's common equity ratio has been in the 38% to 45% range over the three-year time period from January, 2016 through December 31, 2018.[120] Moreover, with this capitalization CEHE has been able not only to raise capital but has maintained its credit ratings.[121]

Further, CEHE's capitalization ratios of 50% debt and 50% equity is inconsistent with CEHE's own witness, Mr. Robert Hevert's equity ratios for his proxy group of companies. The median common equity ratio of Mr. Hevert's "Proxy Group" is 45.8%. By comparison, Dr. Woolridge's "Electric Proxy Group" has a median equity ratio of 45.2%. Thus, Mr. Hevert's proposed equity ratio of 50% equity is not only higher Dr. Woolridge's Electric Proxy Group, but exceeds Mr. Hevert's own Proxy Group's common equity ratio.[122]

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[119] *See* TCUC Exh. 89.

[120] TCUC Exh. 1 – Woolridge Dir. at Exh. JRW-3 at 2 (*see* table related to CenterPoint Energy Houston Electric, LLC at row for "Member's Equity").

[121] *Id.* at 21.

[122] *Id.* at 17.

TCUC's Primary Rate of Return Recommendation[123]

Capital Source	Capitalization Ratio	Cost Rate	Weighted Cost Rate
Short-Term Debt	0.00%	0.00%	0.00%
Long-Term Debt	60.00%	4.38%	2.63%
Common Equity	40.00%	9.00%	3.60%
Total	100.00%		6.23%

The record establishes that a capital structure of 60% long-term debt and 40% equity will allow CEHE a reasonable opportunity to earn a reasonable return, and adequately to access the capital markets.

2. Alternatively, the evidence establishes that CEHE's external, actual capitalization is comprised of short-term debt, long-term debt, and equity to finance its operations and reports as much to the investment community.

Dr. Woolridge's alternative recommendation expressly includes recognition of CEHE's historical use of short-term debt to finance its operations. His alternative recommendation is that the ALJs adopt a capital structure comprised of a short-term debt ratio of 0.90%; a long-term debt ratio of 55.48%; and an equity ratio of 43.62%. These ratios are based on CEHE's actual capitalization for the year 2018 and are consistent with CEHE's historical practices. Dr. Woolridge couples his alternative recommendation to a return on equity of 8.65%.[124]

As the evidence established, CEHE employs short-term debt to finance its operations,[125] including financing of its capital expenditures.[126] As recently as March 28, 2019, CEHE

[123] *Id.* at 4.

[124] *Id.* at 20 and Exh. JRW-3 at 3 (*see* table labeled "Panel B" related to CenterPoint Energy Houston Electric, LLC).

[125] TCUC Exh. 21 at Bates p. 5 of 6 (native page 53 (Mr. McRae's response to TCUC RFI No. 3-10(p)).

[126] TCUC Exh. 14 (showing use of short-term debt by calendar quarter); TCUC Exh. 18 (establishing that borrowings from the "money pool" are short-term debt borrowings); TCUC Exh. 19 (establishing that commercial paper is short-term debt); TCUC Exh. 20 (establishing that use of revolving credit facilities are short-term debt); TCUC Exh. 21 (establishing that short-term debt is used not only for general corporate purposes but also for capital expenditures).

employed $590 million in short-term borrowings from the money pool in which CenterPoint Energy, Inc. subsidiaries participate for short-term borrowings.[127]

Additionally, when it reports its finances to the investment community, CEHE makes clear that it is reporting the entirety of its debt and is not limiting its financial reporting only to long-term debt. For example, in TCUC Exhibit 27 which is CEHE's 10K form for the period ending December 31, 2018, CEHE expressly states:

> Our businesses are capital intensive, and we rely on various sources **to finance our capital expenditures**. For example, we depend on (i) long-term debt, (ii) **borrowings through our revolving credit facilities**, ...[128]

CEHE makes similar statements in its 10K forms for the periods ending December 31, 2016, and December 31, 2017, which respectively state:

> Our businesses are capital intensive in nature. We depend on long-term debt to finance a portion of our capital expenditures and refinance our existing debt and **on short-term borrowings through our revolving credit facilities and commercial paper programs** to satisfy liquidity needs to the extent not satisfied by cash flow from our business operations.[129]

> Our businesses are capital intensive. We depend (i) on long-term debt to finance a portion of our capital expenditures and refinance our existing debt, (ii) **on short-term borrowings through our revolving credit facilities and commercial paper programs**, ...[130]

Likewise, the credit-rating agencies include the entirety of CEHE's debt obligations in assigning a credit grade to CEHE. As Mr. McRae stated in response to TCUC's Request for Information No. 3-10(g):

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[127] *See* TCUC Exh. 18 (borrowings from the money pool are short-term debt); and TCUC Exh. 23 (CEHE borrowed $590 million from the money pool on March 28, 2019).

[128] TCUC Exh. 27 at Bates p. 2 of 26 (native page 43 of 298) (emphasis added).

[129] TCUC Exh. 35 at Bates p. 2 of 16 (native page 37 of 221) (emphasis added).

[130] TCUC Exh. 31 at Bates p. 2 of 16 (native page 42 of 234) (emphasis added). *See also* TCUC Exh. 39 at Bates p. 4 of 16 (native page 78 of 232) (CEHE Form 10K – Dec. 31, 2015); TCUC Exh. 43 at Bates p. 5 of 20 (native page 76 of 212) (CEHE Form 10K – Dec. 31, 2014).

> The reference to "total debt or interest expense" is in regard to credit metrics that rating agencies analyze. Since agencies utilize information from CenterPoint Energy Houston Electric's financial statements published with the SEC, it would include all company borrowings regardless of tenor (both current and long-term liabilities.[131]

By contrast, CEHE would have the ALJs ignore CEHE's use of short-term debt, which reduces CEHE's overall cost of capital and leads to artificially inflated rates for the services CEHE provides. As Dr. Woolridge testified:

> Just as there is a direct correlation between the utility's authorized return on equity and the utility's revenue requirements (the higher the return, the greater the revenue requirement), there is a direct correlation between the amount of equity in the capital structure and the revenue requirements that customers are called on to bear. Again, equity capital is more expensive than debt. Not only does equity command a higher cost rate, it also adds more to the income tax burden that ratepayers are required to pay through rates. As the equity ratio increases, the utility's revenue requirements increase, and the rates paid by customers increase. If the proportion of equity is too high, rates will be higher than they need to be.[132]

TCUC Exhibit 22 establishes that, including short-term debt in CEHE's capital structure, for the 13-quarter period January 1, 2016 through March 31, 2019, CEHE had a *total* debt ratio (including short-term debt) ranging from a low of 54.2% to a high of 61.3%. Over this 13-quarter period, including short-term debt, CEHE had an average of 56.9% total debt in its capital structure.[133]

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[131] TCUC Exh. 21 at Bates p. 3 of 6 (native page 51). Also, consistent with what CEHE reports to the SEC, the capitalization ratios of the companies in Mr. Hevert's Proxy Group include total debt, which consists of both short-term and long-term debt. As Dr. Woolridge observed, "In assessing financial risk, short-term debt is included because, just like long-term debt, short-term has a higher claim on the assets and earnings of the company and requires timely payment of interest and repayment of principal." TCUC Exh. 1 – Woolridge, Dir. at 17.

[132] TCUC Exh. 1 – Woolridge, Dir. at 19.

[133] TCUC Exh. 22.

For the same 13-quarter period, *excluding* short-term debt, CEHE's debt ratio ranged from a low of 54.2% to a high of 58.5%, for an average of 56% long-term debt in its capital structure.[134] Concomitantly, CEHE's equity ratio ranged from 43.1% to 45.8%.

For the calendar year 2018, CEHE's use of debt to finance its operations – *including* and *excluding* short-term debt – ranged from 54.5% to 57.2%, and on average CEHE's total debt comprised about 56% of its capital structure.[135] Its corresponding equity ratio for this period ranged from 42.8% to 45.5%.

Thus, should the ALJs decline to accept Dr. Woolridge's primary recommendation that the ALJs adopt a capital structure comprised of 60% debt and 40% equity and a cost of equity of 9.00%, Dr. Woolridge's alternative recommendation to expressly include short-term debt in establishing CEHE's overall rate of return is fully supported by the evidence, is consistent with CEHE's historical use of debt, is premised on what the credit agencies review and with the data CEHE reports to the SEC, and tracks CEHE's actual capitalization. As noted above, Dr. Woolridge's alternative recommended capital structure is as follows:

TCUC's Alternative Rate of Return Recommendation[136]

Capital Source	Capitalization Ratio	Cost Rate	Weighted Cost Rate
Short-Term Debt	0.90%	2.27%	0.02%
Long-Term Debt	55.48%	4.38%	2.43%
Common Equity	43.62%	8.65%	3.77%
Total	100.00%		6.22%

Though CEHE opposed Dr. Woolridge's alternative proposal to include short-term debt in determining CEHE's capital structure, and concomitantly, its overall rate of return, no party,

[134] *Id.*

[135] *Id.*

[136] TCUC Exh. 1 – Woolridge, Dir. at 5.

including CEHE, disputed Dr. Woolridge's method by which he calculated the amount of short-term debt CEHE employed, or his calculation the cost of short-term debt of 2.27%.

Dr. Woolridge's analysis established that CEHE's use of short-term financing requirements and debt varies by the day, and it had short-term debt outstanding for 225 of the 365 days in 2018.[137] Dr. Woolridge calculated CEHE's average daily balance of short-term-debt to be $52.1 million in 2018.[138] To determine CEHE's overall capital structure, Dr. Woolridge combined CEHE's average quarterly amounts of long-term debt and equity with the average daily amount of short-term debt, resulting in a capital structure of 0.90% short-term debt, 55.48% long-term debt, and 43.62% common equity. Dr. Woolridge observed, and neither CEHE nor any other party disputed, that a common equity ratio of 43.62.0% is close to the Company's actual capital structure.[139]

	TCUC[140] (Primary)	TCUC (Alternative)[141]	TIEC[142]	OPUC[143]	PUCT STAFF[144]	CEHE[145]
Short-Term Debt		0.90%				
Long-Term Debt	60.0%	55.48%	60.0%	54.5%	60.0%	50.0%
Common Equity	40.0%	43.62%	40.0%	45.5%	40.0%	50.0%

As shown in Exhibit JRW-2, the median common equity ratios of Dr. Woolridge's Electric Proxy Group and Mr. Hevert's Proxy Groups are 45.2% and 45.8%, respectively;[146] this

[137] TCUC Exh. 1 – Woolridge, Dir. at 17 and 20.

[138] *Id.* at 20.

[139] *Id.*

[140] *Id.* at 20.

[141] *Id.*

[142] TIEC Exh. 5 - Gorman Direct Testimony at Bates 7.

[143] OPUC Exh. 3 - Winker Direct Testimony at Bates 4 of 56.

[144] Staff Exh. 3A - Ordonez Direct Testimony at Bates 8 of 39.

[145] CEHE Exh. 27 - McRae Direct Testimony at 4.

compares to Dr. Woolridge's alternative recommended equity ratio of 42.62%. This indicates that CEHE's proposed capitalization has a higher common equity ratio than the two proxy groups. It should be noted that the capitalization ratios of the proxy groups include total debt which consists of both short-term and long-term debt. In assessing financial risk, short-term debt is included because, just like long-term debt, short-term has a higher claim on the assets and earnings of the company and requires timely payment of interest and repayment of principal.[147]

Dr. Woolridge's Exhibit JRW-3 shows the quarterly capital structure ratios for CenterPoint Energy ("CNP") as well as CEHE for the period 2016-2018.[148] The average common equity ratios for CNP and CEHE are 33.4% and 42.9%, respectively. Thus, the Company is proposing a capital structure with a much higher common equity ratio than either CNP or CEHE has maintained in the past. The data show that CEHE's common equity ratio has been in the 38% to 45% range over the three-year time period from 2016 to 2019. Crucially, using this capitalization CEHE has maintained its credit ratings and has been able to raise capital with no indication that its cost to do so are higher than if CEHE had maintained a higher equity ratio.[149]

The only other argument CEHE advances against including short-term debt in its capital structure to set its overall rate of return is that the Commission has not done so in the past. But as the ALJs are aware, the Commission is not bound by "precedent" as are the courts.[150] Here, should the ALJs decline to adopt Dr. Woolridge's primary recommendation of a 60% debt / 40%

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[146] TCUC Exh. 1 – Woolridge Dir. at Exhibit JRW-2.

[147] *Id.* at 17. *See also* TCUC Exh. 27 (CEHE's 10K form for the period ending Dec. 31, 2018).

[148] TCUC Exh. 1 – Woolridge Dir. at Exhibit JRW-3.

[149] *Id.* at 17.

[150] *Oncor Elec. Delivery Co., LLC v. PUCT*, 406 S.W.3d 253, 267 (Tex. App. — Austin 2013, no pet); *see also Texas State Bd. of Pharmacy v. Witcher*, 447 S.W.3d 520, 534 (Tex. App. — Austin 2013, pet. filed).

equity capitalization, the evidence establishes that using CEHE's actual capitalization ratios has allowed CEHE to access the capital markets without penalty, and that CEHE uses its capital of whatever tenor, to finance its daily operations and its capital investments.[151]

D. Overall Rate of Return [PO Issue 8]

4. [8] What is the appropriate overall rate of return, return on equity, and cost of debt for CEHE? When answering this issue, please address how the factors specified in PURA § 36.052 and 16 TAC 25.231(c)(1) should affect CenterPoint's rate of return.

For the reasons discussed above regarding CEHE's cost of equity, TCUC urges the ALJs to adopt Dr. Woolridge's primary rate of return recommendation, a rate of return of 6.23%, which is premised on a cost of equity of 9.25%; a capitalization comprised of 60% long-term debt and 40% equity, and cost of long-term debt of 4.38%.

Alternatively, TCUC urges the ALJs to adopt an overall rate of return of 6.22%, which is premised on a capitalization comprised of 0.90% short-term debt at a cost of 2.27%; 55.48% long-term debt at a cost of 4.38%; and a cost of equity of 8.65%.[152]

E. Financial Integrity [PO Issue 9]

5. [9] Are any protections, such as financial protections, appropriate to protect CenterPoint's financial integrity and ability to provide reliable service at just and reasonable rates?

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[151] *See* TCUC Exhs. 77, 87, and 89 (establishing that the financing receives and its cash flows are fungible and that cash from short-term debt, long-term debt, or equity, cannot be traced to a particular project or use).

[152] TCUC has not in its Initial Brief addressed the factors noted in PURA § 36.052 or in 16 Tex Admin Code § 25.231 but reserves the right to reply to the parties' briefs addressing the factors noted in PURA and the Commission's substantive rules.

IV. Operating and Maintenance Expenses [PO Issues 4, 5, 21, 22, 25, 26, 28, 29, 33, 35, 36, 38, 39, 54, 55]

C. Depreciation and Amortization Expense [PO Issue 25]

CEHE proposes changes to its depreciation rates based on a depreciation study performed by Mr. Dane Watson. Mr. Watson's study is in many instances based on unreliable data, erroneous assumptions and flawed analysis. TCUC's depreciation expert Mr. David J. Garrett reviewed Mr. Watson's study, identified the problems in Mr. Watson's study, and has in turn made reasonable recommendations in response to the errors in Mr. Watson's analysis. A summary of the effect of TCUC's recommendations is illustrated in Table 1 below, which shows CEHE's proposed depreciation accrual amounts as compared to TCUC's recommended depreciation accruals by function:

Depreciation Table 1: Summary Depreciation Accrual Comparison[153]

Plant Function	Plant Balance 12/31/2017	Company Proposal	TCUC Proposal	TCUC Adjustment
Transmission	2,677,169,356	61,070,701	57,970,935	(3,099,766)
Distribution	6,819,502,483	213,587,251	183,151,605	(30,435,646)
General	884,241,963	51,104,951	50,063,481	(1,041,470)
Total	$ 10,380,913,802	$ 325,286,250	$ 290,709,368	**$ (34,576,882)**

As can be seen, TCUC's recommendation would reduce CEHE's proposed depreciation accrual by approximately $34.6 million. The effect of this adjustment reduces CEHE's revenue requirement by approximately $36.5 million.[154]

TCUC's adjustments are based on Mr. Garrett's recommendations to lengthen the service lives of nine of the Company's accounts which results in lower depreciation accruals for each

[153] TCUC Exh. 2 –Garrett, Dir. at 2.

[154] GCCC Exhibit 1 – Kollen, Direct at 50.

account. This is a reasonable remedy because CEHE's has not met its burden of proof to show that its proposed depreciation rates for these accounts are not excessive.[155] These adjustments are shown in Table 2: Summary Depreciation Accrual Comparison.

Depreciation Table 2: Summary Depreciation Accrual Comparison[156]

Account No.	Description	Company's Position Iowa Curve Type	Company's Position Iowa Curve AL	Company's Position Depr Rate	Company's Position Annual Accrual	TCUC's Position Iowa Curve Type	TCUC's Position Iowa Curve AL	TCUC's Position Depr Rate	TCUC's Position Annual Accrual
	TRANSMISSION PLANT								
E35301	STATION EQUIPMENT	R0.5	53	2.05%	19,578,539	R0.5	56	1.93%	18,434,817
E35401	TOWERS & FIXTURES	R2.5	59	2.15%	14,051,620	R2	66	1.85%	12,071,203
	DISTRIBUTION PLANT								
E36201	STATION EQUIPMENT	R1	48	2.14%	24,485,519	R0.5	55	1.76%	20,165,356
E36401	POLES,TOWERS,FIXTURE	R0.5	35	3.84%	30,462,214	R0.5	45	2.84%	22,568,969
E36501	O/H CONDUCT DEVICES	R0.5	38	3.24%	31,217,383	R0.5	40	3.05%	29,339,028
E36601	UNDERGROUND CONDUIT	R2.5	62	1.96%	10,836,530	S1	65	1.83%	10,145,092
E36701	U/G CONDUCT/DEVICES	R0.5	38	3.34%	33,369,161	L0	42	2.87%	28,714,072
E36801	LINE TRANSFORMERS	R1	28	3.71%	48,878,877	L0	32	2.87%	37,875,814
	GENERAL PLANT								
E39001	STRUCT. & IMPROVEMTS	R4	50	2.05%	4,383,342	R2	58	1.56%	3,335,954

TCUC urges that the ALJs to recommend approval of TCUC's proposed depreciation rates and rejection of CEHE's proposed depreciation rates for the accounts listed in Table 2.

1. Summary Description of Depreciation Analysis

In the context of utility rate-making, depreciation is essentially a cost allocation system designed to measure the rate by which a utility, such as CEHE, may recover its capital investment in a rational and systematic manner. Fundamental to depreciation analysis is the study of historical utility plant data in order to project how long the property will survive in the future, i.e. its estimated service life.

[155] TCUC Exh. 2 –Garrett Dir. at 5 (citing to *Lindheimer v. Illinois Bell Tel. Co.* 292 U.S. 151, 167 (1934) ("[T]he company has the burden of making a convincing showing that the amounts it has charged to operating expenses for depreciation have not been excessive.")).

[156] TCUC Exh. 2 – Garrett Dir. at 3.

One method used to make this type of projection is the "retirement rate method." Under the retirement rate method, the company's original property data, including additions, retirements, transfers, and other transactions are organized by the year the property was placed into service ("vintage year") and when it was either retired or transferred ("transaction year").[157] These data are then organized into what is known as an Observed Life Table ("OLT") which shows the percentage of property surviving at each age interval.[158] The OLT depicts patterns of retirement for a property type which is known as a survivor curve, the most commonly known are referred to as "Iowa" curves.[159] The appropriateness of a particular survivor curve can be established by mathematical calculations such as the conformance index ("CI") and retirements experience index ("REI").[160] The CI is a measure of how closely a particular curves fits the OLT data and the REI is a measure of whether the history of an account is long enough so as provide a sufficient amount of data for review.[161]

The other type of method used to project how long property is expected to last into the future is referred to as "actuarial" analysis.[162] Actuarial analysis requires "aged" data. "Aged" data refers to a collection of property data for which the dates of placements, retirements, transfers and other actions are known.[163] When a utility keeps aged data, it keeps track of not only when the asset was retired, but also when it was placed into service, or the "vintage" year.[164] When aged data are not available, but the year-end data are known, depreciation

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[157] *Id.* at 8.

[158] *Id.*

[159] *Id.*

[160] *Id.* at 8.

[161] *Id.* at 16-17 and Appendix D, pp. 81-83.

[162] *Id.*

[163] *Id.*

[164] *Id.*

analysts must "simulate" an actuarial analysis be estimating the proportion of each vintage group contributed to the year-end balances.[165] For this reason, simulated data is not as reliable as aged data.[166]

In order to analyze accounts that do not contain aged data, analysts use the "simulated plant record" ("SPR") method of analysis.[167] The actuarial method also requires the use of survivor curves in order "smooth out" the data. The appropriateness of a particular survivor curve can be established by means of visually fitting the curve to the data and also mathematically by use of the sum of squared difference ("SSD") method.

2. Actuarial Analysis – Account 390 – Structures and Improvements

TCUC opposes the use of the R4-50 curve for Account 390 as proposed by CEHE's witness Mr. Watson and recommends the R2-58 curve to set the depreciation rates for this account. As explained in Mr. Garrett's direct testimony and depicted in Figure 3 of that testimony, the Company's R4-50 curve does not provide a good a fit in the middle portion of the curve but does provide a better fit with the end of the curve.[168] In contrast, TCUC's recommended R2-58 curve has a better fit at the beginning and middle of the curve, but does not track the data as closely toward the end of the curve. It is methodologically sound to ignore the tail-end of a curve such as here because the tail end of the curve has fewer dollars exposed to retirement in comparison to other parts of the curve.[169] In addition, the R2-58 curve is mathematically a better fit based on the "sum of squared differences" calculation. In this case,

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[165] *Id.*

[166] *Id.*

[167] *Id.*

[168] *Id.* at 12.

[169] *Id.*

the SSD for the Company's R4-50 curve is 0.1442 whereas TCUC's R2-58 curve has an SSD of 58.[170]

3. Simulated Plant Record Analysis

As mentioned previously, the SPR method of depreciation analysis is based on "unaged" data which is less reliable than "aged" data because the age of an asset in not known when it is retired. In this case, CEHE maintained "aged" data for its general accounts, but not for its transmission and distribution accounts[171] simply because the system that they use does not capture it.[172] As CEHE witness Mr. Watson agreed, other utilities do in fact keep track of aged data for these accounts and that it is not uncommon in the industry for aged data to be maintained for these accounts.[173] Moreover, as conceded by Mr. Watson, "aged" data is more robust in comparison to "unaged" data.[174] Because depreciation analysis is fundamentally an exercise in estimating the expected service life of an asset based on historical known events, the lack of data concerning the actual age of an asset at retirement when performing a SPR depreciation analysis creates significant doubt as to the reliability of that data in making estimations of expected service lives.

Mr. Garrett conducted an SPR analysis based on CEHE's "unaged" data, but in view of the fact that such data is not as reliable as is "aged" data, Mr. Garrett also considered the approved service lives for the transmission and distribution accounts of other utilities that do maintain "aged" data for these types of accounts. Comparing service lives of one utility with another utility is an accepted component of the type of informed judgement a depreciation

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[170] *Id.* at 16.

[171] *Id.* at 8.

[172] TR. at 326.

[173] TR. at 327.

[174] TR. at 325; CEHE Exh. 41 at 14.

analyst applies to the data under review.[175] Mr. Garrett's analysis consisted of a comparison of CEHE's proposed service lives with the approved service lives of three other utilities – Southwestern Electric Power Company ("SWEPCO"), Oklahoma Gas & Electric Company ("OG&E"), and the Public Service Company of Oklahoma ("PSO"), which do keep "aged" data for their transmission and distribution accounts.[176] Mr. Garrett's analysis revealed that with respect to 8 accounts – Accounts 353, 354, 362, 364, 365, 366, 367 and 368 – CEHE's proposed service lives were noticeably shorter than those of the other utilities in the comparison. The results of Mr. Garrett's study with respect to the listed accounts are depicted in Figure 3 below.

Figure 3: Peer Group Comparison[177]

			Peer Group					
Acct	Description	CEHE	SWEPCO	OG&E	PSO	Peer Avg	Peer Avg less CEHE	TCUC
	TRANSMISSION PLANT							
353	STATION EQUIPMENT	53	60	63	60	61	8	56
354	TOWERS & FIXTURES	59	60	75	75	70	11	66
	DISTRIBUTION PLANT							
362	STATION EQUIPMENT	48	55	68	75	66	18	55
364	POLES,TOWERS,FIXTURE	35	55	55	53	54	19	45
365	O/H CONDUCT DEVICES	38	44	54	46	48	10	40
366	UNDERGROUND CONDUIT	62	70	65	78	71	9	65
367	U/G CONDUCT/DEVICES	38	45	64	65	58	20	42
368	LINE TRANSFORMERS	28	50	44	36	43	15	32
	Average	**45**	**55**	**61**	**61**	**59**	**14**	**50**

Mr. Garrett then used the results of this analysis to serve as a check on the results of his SPR method of analysis. As can be seen in Figure 3, Mr. Garrett's resulting service life

[175] See TCUC Exh. 67, National Association of Regulatory Utility Commissioners, Public Utility Depreciation Practices 128, August 1996, ("Informed Judgment . . . is based on a combination of general experience, knowledge of the properties and a physical inspection, *information gathered trough out the industry*, and other factors which assist the analyst in making a knowledgeable estimate.").

[176] TCUC Exh. 2 – Garrett Dir. at 19.

[177] *Id.* at 20.

recommendations are conservatively located between CEHE's proposed service lives and the average of the peer group.

a. Account 353 – Station Equipment

For Account 353, TCUC recommends the R0.5-56 curve instead of CEHE's proposed R0.5-53 curve. The highest CI score in the overall band for CEHE's proposed R0.5-53 curve is merely 26 which rates as "poor" under the commonly accepted scale developed by Alex Bauhan.[178] In addition, a 53-year service life for this account is much shorter than the average approved service life of 61 years of the three utilities in Mr. Garrett's study and is much lower than the 73 years than the Commission approved for SWEPCO.[179] TCUC's recommended curve is more reasonable than CEHE's curve because it uses CEHE's own simulated historical data, even though that data is flawed in comparison to actuarial data, and is closer to industry norms.

b. Account 354 – Towers and Fixtures

For Account 354, TCUC recommends the R2-66 curve instead of CEHE's proposed R2.5-59 curve. A 59-year service life is lower than the average service life of 66 for the three utilities in Mr. Garrett's comparison and is much lower than the approved 75 years as recommended by PSO's own witnesses based on the company's actuarial data.[180] Further, while there are several curves that would produce satisfactory results under the CI and REI scales, TCUC's curve has a higher CI (75 in comparison to 73 for CEHE's proposed curve) and also has an excellent REI score of 86.[181]

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[178] *Id.* at 21.

[179] *Id.*

[180] *Id.* at 20 and 23-24.

[181] *Id.* at 24.

c. Account 362 – Station Equipment

For Account 362, TCUC recommends the R0.5-55 curve instead of CEHE's proposed R1-48 curve. TCUC's recommended service life of 55 years is much less than the average of 66 years in Mr. Garrett's comparative analysis and is identical to the 55 years that the Commission approved for SWEPCO.[182] Moreover, TCUC's recommended curve has a "good" CI score of 55 and an "excellent" REI score of 89.[183] TCUC's curve considers CEHE's SPR data, yet because that data is relatively unreliable, it also considers the service lives approved for other utilities based on actuarial data and is this more reasonable than CEHE's proposed curve.

d. Account 364 – Poles, Towers, and Fixtures

For Account 364, TCUC recommends the R0.5-45 curve instead of CEHE's proposed R0.5-35 curve. CEHE's CI is only 16 which under the applicable SPR method criteria is a "poor" fit.[184] The Commission approved a 55-year service life for this account for SWEPCO based on actuarial data, which is considerably more than TCUC's recommendation of a 45-year service life in this case.[185] Further, the mathematical Iowa curve analysis of SWEPCO's actuarial data showed that the service life could have been as high as 63 years.[186] OG&E also has a 55-year approved service life.[187] CEHE's proposed curve is inferior to TCUC's curve because it is not based on actuarial data and is 20 years shorter than the utilities in Mr. Garrett's comparison group and should be rejected.

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[182] *Id.* at 20 and 25.

[183] *Id.* at 25.

[184] *Id.* at 26.

[185] *Id.* at 26.

[186] *Id.*

[187] *Id.* at 28.

e. Account 365 – Overhead Conductors and Devices

For Account 365, TCUC recommends the R0.5-40 curve instead of CEHE's proposed R0.5-38 curve. Although CEHE bases its proposed curve on the fact that it was the "top ranked" choice does not mean it is the best choice.[188] The CI for CEHE's curve is only 21 which ranks as "poor."[189] In addition, 38 years is much shorter than the approved lives for SWEPCO, PSO and OG&E which are 44, 46 and 54 years respectively.[190] TCUC's proposed 40-year curve is a reasonable compromise between CEHE's proposal and the approved lives for other utilities.

f. Account 366 – Underground Conduit

For Account 366, TCUC recommends the S1-65 curve instead of CEHE's proposed R2.5-62 curve. CEHE's proposed curve is significantly shorter than the approved service lives of the other utilities in Mr. Garrett's comparison group. To compare, SWEPCO's own witness proposed a 70-year life which the Commission approved.[191] PSO has a much longer 78-year service life for this account. Both of these estimates were based on actuarial data.[192] Further, TCUC's curve ranks as "excellent" in both the CI and REI scales.[193] In addition, a 65-year life is a conservative recommendation given the longer approved lives for SWEPCO and PSO.

g. Account 367 – Underground Conductor and Devices

For Account 367, TCUC recommends the L0-42 curve instead of CEHE's proposed R0.5-38 curve. Even though CEHE's curve may have been the top-ranked curve in the SPR

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188 *Id.*

189 *Id.*

190 *Id.* at 29.

191 *Id.*

192 *Id.* at 30.

193 *Id.* at 31.

analysis it has a CI score of 23 which is "poor."[194] Further, the approved lives for SWEPCO, PSO and OG&E are 45, 65 and 64 years respectively, are based on actuarial data, and are much longer than the 38 years proposed by CEHE.[195] TCUC's proposed 42-year service life is derived from CEHE's SPR analysis, but moves CEHE's proposal closer to the range of reasonableness for this account and should be approved.

h. Account 368 – Line Transformers

For Account 368, TCUC recommends the L0-32 curve instead of CEHE's proposed R1-28 curve. While CEHE's curve has a 51 CI score, that is still on a "fair" score.[196] TCUC's curve has a superior CI score of 40 and REI score of 100. Moreover, CEHE's 28-year service life is much less than the approved service lives based on actuarial for SWEPCO, PSO and OG&E which are 50, 36 and 44 years respectively.[197] In fact, the Commission found that it would be reasonable to use a 55-year life in the case of SWEPCO.[198] Even though TCUC's recommended curve is substantially shorter than the approved service life for other utilities in Mr. Garrett's comparison, it is more reasonable than CEHE's proposed curve.

XII. Conclusion

For the reasons noted above, TCUC respectfully urges the Administrative Law Judges to adopt a revenue requirement that employs an overall rate of return of 6.23% as recommended by

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[194] *Id.* at 32.

[195] *Id.*

[196] *Id.* at 33.

[197] *Id.*

[198] *Id.*

Dr. Woolridge in his primary recommendation.[199] Dr. Woolridge's proposed cost of equity, cost of debt, and capital structure are shown in Table 1, below:

Table 1
TCUC's Primary Rate of Return Recommendation[200]

Capital Source	Capitalization Ratio	Cost Rate	Weighted Cost Rate
Short-Term Debt	**0.00%**	**0.00%**	**0.00%**
Long-Term Debt	**60.00%**	**4.38%**	**2.63%**
Common Equity	**40.00%**	**9.00%**	**3.60%**
Total	**100.00%**		**6.23%**

TCUC estimates that adopting Dr. Woolridge's proposed return on equity ("ROE") of 9.00% with a capital structure of 60% long-term debt and 40% common equity, reduces CEHE's proposed total increase in revenue of approximately $161.1 million, by approximately $96.1 million.[201] The effect of TCUC's proposed cost of capital and capital structure is shown in the table below:

Rate of Return Adjustments[202]	Wholesale Transmission	Retail Dist/Met/CS	TOTAL
Reflect Capital Structure of 40% Equity and 60% Debt	(20.242)	(32.894)	(53.136)
Reflect Return on Equity of 9.0%	(16.371)	(26.604)	(42.976)
TOTAL	**(36.613)**	**(59.498)**	**(96.112)**

Alternatively, TCUC urges the ALJs to adopt Dr. Woolridge's alternative recommended overall rate of return of 6.20%.

[199] TCUC Exh. 1 – Woolridge Dir. at 4.

[200] *Id.*

[201] *See* GCCC Exh. 1 –Kollen Dir. at 14 at Table 1.

[202] *Id.*

Table 2
TCUC's Alternative Rate of Return Recommendation[203]

Capital Source	Capitalization Ratio	Cost Rate	Weighted Cost Rate
Short-Term Debt	**0.90%**	**2.27%**	**0.02%**
Long-Term Debt	**55.48%**	**4.38%**	**2.43%**
Common Equity	**43.62%**	**8.65%**	**3.77%**
Total	**100.00%**		**6.22%**

Dr. Woolridge's alternative recommended rate of return is premised on the inclusion of short-term debt in CEHE's capital structure and a ROE, of 8.65%.

Further, TCUC urges the Administrative Law Judges to adopt the depreciation rates and expenses Mr. David Garrett, TCUC's depreciation expert witness, recommends in his pre-filed direct testimony.[204] Compared to CEHE's depreciation expense, Mr. Garrett's testimony establishes that CEHE's depreciation expense should be reduced by a total of approximately $36.52 million. The effect of TCUC's proposed cost of capital and capital structure is shown in the table below:

DEPRECIATION EXPENSE ADJUSTMENTS[205]	**Wholesale Transmission**	**Retail/Dist/Met/CS**	**TOTAL**
Reduce Depreciation Expense Related to Depreciation Rate Adjustments	(5.491)	(31.025)	(36.516)

Adoption of Dr. Woolridge's and Mr. D. Garrett's recommendations, in conjunction with adoption of GCCC's and the Houston Coalition's recommended changes to CEHE's cost of service, produces overall revenues at a level that will permit CEHE a reasonable opportunity to

[203] TCUC Exh. 1 – Woolridge, Dir. at 5.

[204] *See* TCUC Exh. 2 –Garrett Dir.

[205] *See* GCCC Exh. 1 – Kollen Dir. at 14 at Table 1.

earn a reasonable return on its invested capital used and useful in providing service to the public in excess of the utility's reasonable and necessary operating expenses.

Respectfully submitted,

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ATTORNEYS FOR TEXAS COAST UTILITIES COALITION

CERTIFICATE OF SERVICE

I hereby certify that on this the 9th day of July 2019, a true and correct copy of the ***Texas Coast Utilities Coalition's Initial Post-Hearing Brief*** was served upon all parties via electronic mail in compliance with SOAH Order No. 2.

By: _____
Mariann Wood