Exhibit No.: _____
Issues: Return on Equity, Capital Structure
Witness: John J. Reed
Type of Exhibit: Rebuttal Testimony
Sponsoring Party: The Empire District Gas Company
Case No.: GR-2021-0320
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**Before the Public Service Commission**
**of the State of Missouri**

# Rebuttal Testimony

**of**

**John J. Reed**

**on behalf of**

**The Empire District Gas Company**

**March 2022**

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THE EMPIRE DISTRICT GAS COMPANY
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## I. INTRODUCTION AND PURPOSE

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

A. My name is John J. Reed. I am Chairman and Chief Executive Officer of Concentric Energy Advisors, Inc. ("Concentric") and CE Capital Advisors, Inc. My business address is 293 Boston Post Road West, Suite 500, Marlborough, Massachusetts 01752.

**Q. On whose behalf are you submitting this Rebuttal Testimony?**

A. I am submitting this Rebuttal Testimony on behalf of The Empire District Gas Company ("EDG" or "the "Company"), an indirect, wholly-owned subsidiary of Algonquin Power & Utilities Corp. ("APUC").

**Q. Did you previously provide Direct Testimony in this proceeding?**

A. Yes. In August 2021, I submitted Direct Testimony to the Missouri Public Service Commission ("Commission") regarding the appropriate Return on Equity ("ROE") and capital structure for EDG in this proceeding.

**Q. What is the purpose of your Rebuttal Testimony?**

A. The purpose of my Rebuttal Testimony is to respond to testimony offered by the Commission Staff ("Staff") and, in particular, the Direct Testimony of Staff witness Seong Joun Won, PhD, relating to the authorized ROE.

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

A. Yes, I am sponsoring **Rebuttal Schedule JJR-1** to support my Rebuttal Testimony, which was prepared by me or under my direction.

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

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

- In Section II, I provide a summary and overview of my Rebuttal Testimony and the important factors to be considered in establishing the ROE and capital structure for EDG's operations.
- In Section III, I discuss how the cost of capital recommendation of Dr. Won compares with the authorized returns for natural gas utilities in other jurisdictions.
- In Section IV, I respond to Dr. Won's testimony regarding capital market conditions and the implications for EDG's cost of equity.
- In Section V, I respond to Dr. Won's ROE analyses and recommendations.
- In Section VI, I comment on the capital structure recommendation of Dr. Won.
- Finally, in Section VII, I summarize my conclusions and recommendations.

## II. SUMMARY AND OVERVIEW

**Q. What factors should be considered in evaluating the cost of capital for EDG in this proceeding?**

A. There are two key questions that the Commission must answer in setting the cost of capital for EDG in this proceeding: 1) how much has the cost of equity increased for regulated natural gas utilities since the Commission issued its decision in Spire Missouri Inc.'s ("Spire Missouri") recent rate case; and 2) is EDG a higher than average risk natural gas utility? My evidence demonstrates that the cost of equity has increased substantially for regulated natural gas utilities since the first quarter of 2021 (i.e., the period in which the cost of capital analysis in Spire Missouri's rate case was conducted), and that EDG is a higher than average risk natural gas utility. On that basis, my recommendation of a 10.0 percent authorized ROE and a capital structure comprised of 52.44 percent common equity

and 47.56 percent long-term debt[1] are reasonable and should be adopted by the Commission.

**Q. Please explain why you believe the cost of equity for regulated natural gas utilities has increased since the first quarter of 2021.**

A. The Federal Reserve has announced plans to start withdrawing the extraordinary monetary stimulus that was provided to stabilize financial markets in the early days of the COVID-19 pandemic and to support the subsequent economic recovery, as discussed in more detail in Section IV of my Rebuttal Testimony. In addition, this monetary stimulus in conjunction with the aggressive fiscal stimulus provided by the U.S. Congress have contributed to a substantial increase in the money supply. Inflation pressures were mounting in early 2021, and the inflation rate at both the consumer and producer level has been increasing at rates not seen in 30 years, as also discussed in more detail in Section IV of my Rebuttal Testimony. The Federal Reserve initially indicated that inflation was expected to be "transitory;" however, leading economists and market participants are starting to believe that higher inflation will persist for longer than anticipated, as evidenced by the Blue Chip survey results from March 2022. These indicators point toward a higher cost of equity for regulated natural gas utilities such as EDG.

**Q. What is the basis for your conclusion that EDG is a higher than average risk natural gas utility?**

A. As discussed in Section VIII of my Direct Testimony, EDG has above average business risk relative to the proxy group companies that were used to estimate the cost of equity. In

[1] Balances should be updated to reflect the September 30, 2021, amounts of 51.47 percent common equity and 48.53 percent long-term debt.

particular, EDG has higher than average business risk for the following reasons: 1) the Company is substantially smaller than the companies in the proxy group; and 2) the Company has more regulatory risk than the proxy group, especially as it relates to the use of a historical test year, which contributes to regulatory lag, the absence of protection against volumetric risk through revenue decoupling or weather normalization mechanisms (although the Company is requesting a weather normalization rider in this case), and the absence of a capital cost tracking mechanism. Taken together, my analysis demonstrates that EDG is a higher than average risk natural gas utility.

**Q. What are your key conclusions and recommendations regarding the appropriate ROE and capital structure for EDG's natural gas utility operations in this proceeding?**

A. My key conclusions are as follows:

1. Although Dr. Won devotes many pages of testimony to discussing the results of his various ROE estimation models and attempting to explain why those models are producing reasonable results under current market conditions, he essentially discards his analyses in favor of a 9.50 percent recommendation that is not supported by any of his financial models.

2. Dr. Won derives his recommendation of 9.50 percent by adjusting upwards the ROE of 9.37 percent authorized by the Commission for Spire Missouri in Case No. GR-2021-0108 by 13 basis points to reflect the fact that EDG is much smaller than Spire Missouri and that interest rates and inflation rates are elevated relative to the 2021 Spire Missouri Case. However, Staff does not appear to have provided any evidence that 13 basis points is the appropriate adjustment for these factors. While 9.50 percent is the lower bound of my recommended ROE for EDG, Staff simply observes that its 9.50 percent recommendation is "generally consistent" with the

average of authorized ROEs for natural gas utilities in 2021 of 9.57 percent.[2] The same factor that makes EDG riskier than Spire Missouri (i.e., EDG's small size) also make EDG riskier than most gas utilities that received an authorized ROE in 2021. Therefore, by Dr. Won's own logic, EDG's authorized ROE should be higher than the 2021 average authorized ROE for natural gas utilities.

3. Without explanation, Dr. Won changed his approach to calculating his average DCF result, and in the process excludes the results of more than half of the companies in his proxy group. Considering the lack of explanation for this change, it is difficult to say why Dr. Won reflected it in his analysis. However, if he was concerned with the reliability of the DCF model, he should have instead considered how capital market conditions are affecting the inputs to DCF model, rather than just adjusting his approach to calculating the mean DCF result.

4. The economy is in the recovery phase of the business cycle which means improving economic growth and increasing inflation and interest rates. Utility share prices are inversely related to the yields on long-term government bonds. Therefore, since interest rates are expected to increase over the near-term, investors expect the utility sector to underperform the broader market. As a result, Dr. Won's DCF results, which rely on recent historical share prices, and his CAPM results, which rely on current long-term government bond yields, are likely understating the forward-looking cost of equity for EDG.

5. The Company's requested equity ratio is conservative relative to the equity ratio recommended by Dr. Won.

[2] Direct Testimony of Seoung Joun Won, PhD, at p. 28.

## III. OVERVIEW OF COST OF CAPITAL RECOMMENDATIONS AND COMPARABLE RETURN STANDARD

**Q. Please provide an overview of Dr. Won's recommendations in this proceeding.**

A. Figure 1 summarizes the results of the ROE analyses presented by Dr. Won and his final recommendations. His DCF analysis, CAPM analysis and Bond Yield Risk Premium analysis indicate a cost of equity from 5.71 percent to 9.32 percent. Although Dr. Won does not rely on the results of his models when establishing his ROE recommendation, he does not question or reconsider the validity of the inputs and assumptions used in his respective models. Rather, Dr. Won simply recommends an ROE for EDG of 9.50 percent, which is 30 basis points higher than the average results of his DCF model and 241 basis points higher than the midpoint results of his CAPM analyses. In short, if the analyses which underlie a recommendation produce unreasonable results, and those results are essentially abandoned when the ultimate recommendation is made, the recommendation becomes nothing more than an unsubstantiated opinion. Unfortunately, that is what Dr. Won has offered, i.e., an unsubstantiated opinion which is not even supported by his own analyses.

**Figure 1: Recommended ROE Ranges and Point Estimates of Dr. Won**

| Witness | Staff |
|---|---|
| DCF | 9.08%-9.32%<br>Mean: 9.20%[3] |
| CAPM | 5.71%-8.47%<br>Mean: 7.09%[4] |
| Bond Yield Risk Premium | 7.08%-9.31%[5] |
| Recommendation | **9.50%** |

**Q. Are authorized returns in other jurisdictions a relevant benchmark to evaluate the reasonableness of the ROE recommendations of Staff?**

A. Yes. The *Hope* and *Bluefield* cases establish that authorized ROEs need to be comparable to other investments of commensurate risk. Therefore, the regulatory decisions of other commissions provide a basic test of reasonableness and a benchmark that investors consider in assessing the authorized ROE of one utility against the returns available from other regulated utilities with comparable risk.

**Q. Are the equity return analyses and recommendations of Staff witness Dr. Won consistent with the comparable return standard?**

A. No, they are not. Dr. Won indicates that one of the guidelines he used in determining the cost of equity for EDG was the comparable return standard established in *Hope* and

[3] Direct Testimony of Seoung Joun Won, PhD, at p. 22.
[4] Direct Testimony of Seoung Joun Won, PhD, at p. 24.
[5] Direct Testimony of Seoung Joun Won, PhD, at p. 25.

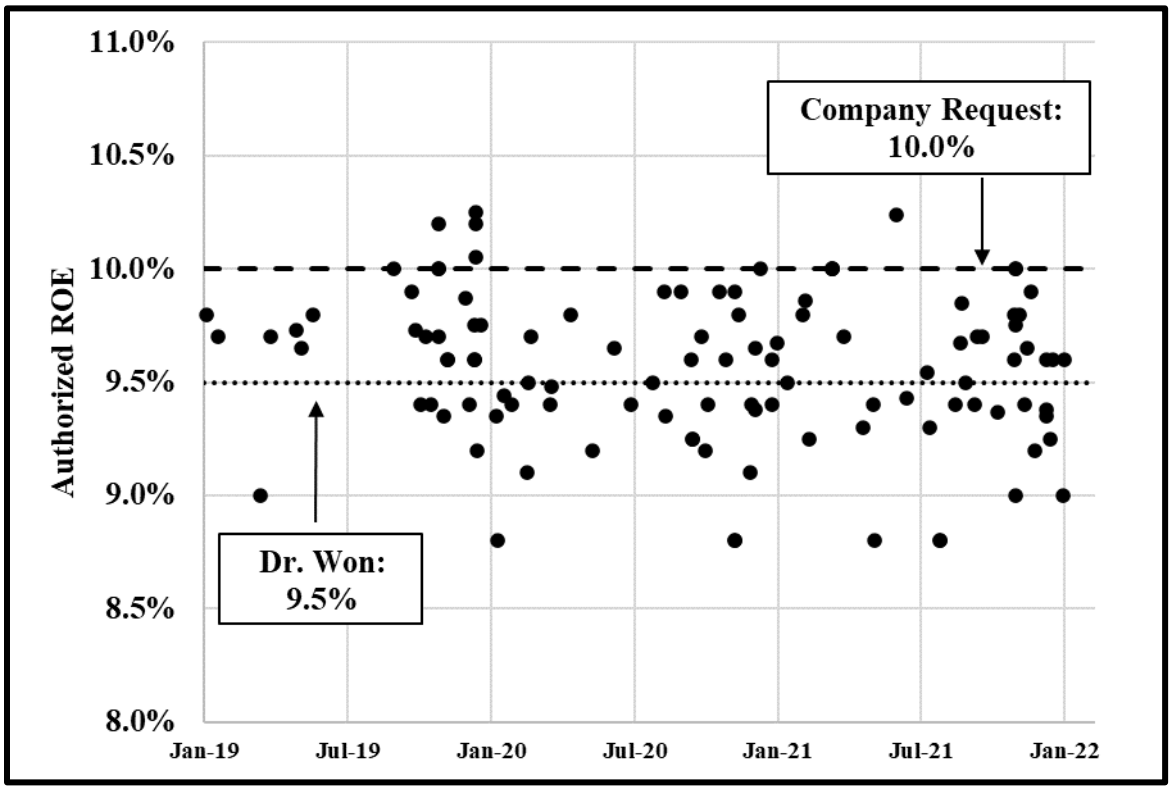
*Bluefield*.[6] While Dr. Won considers the authorized ROEs for natural gas utilities in other jurisdiction across the U.S., he cites the simple average authorized ROEs for all natural gas utilities 2021 to support his recommended ROE of 9.50 percent.[7] He does not take into consideration EDG's relative risk profile, including its small size and regulatory environment. Dr. Won's decision to authorize a below-average ROE for EDG is not consistent with EDG's above-average risk profile due to these factors.

**Q. Have you compared the recommended ROEs of Dr. Won against the ROEs authorized by other utility regulatory commissions across the U.S.?**

A. Yes. Figure 2 shows the authorized returns for natural gas utilities in other jurisdictions since January 2019, compared to the return recommended by Dr. Won. Recent authorized ROEs for natural gas utilities range from 8.80 percent to 10.25 percent, with an average of 9.56 percent.

[6] Direct Testimony of Seoung Joun Won, PhD, at p. 6.
[7] Direct Testimony of Seoung Joun Won, PhD, at p. 28.

**Figure 2: Authorized ROEs – Natural Gas Utilities – January 2019 through February 2022**[8]




The majority of authorized returns for natural gas utilities (66 out of 110 decisions) from January 2019 through February 2022 have been greater than or equal to 9.50 percent. This range is consistent with the Company's requested ROE of 10.0 percent and higher than the ROE recommendation of Dr. Won, which is below the average of authorized ROEs for natural gas utilities over the past three years. This suggests that Dr. Won believes EDG has lower risk than other natural gas utilities across the U.S. However, he has not provided any evidence to support this conclusion because he does not consider the relative risk of EDG to his proxy group companies. Finally, he does not give appropriate consideration to

[8] Source: S&P Capital IQ. Data through February 28, 2022.

recently authorized ROEs in the context of current market conditions, as discussed in more detail in Section IV of my Rebuttal Testimony.

**Q. What are your conclusions concerning the ROE recommendation of Staff witness Dr. Won?**

A. My conclusion is that Dr. Won's ROE recommendation of 9.50 percent is at the very low end of a reasonable range of equity returns. Considering EDG's above-average risk profile, and current capital market conditions, my recommended ROE of 10.00 percent is more appropriate for EDG.

## IV. UPDATED CAPITAL MARKET CONDITIONS

**Q. Please summarize Dr. Won's position on capital market conditions and the implications for the cost of equity.**

A. Dr. Won's views on current economic and capital market conditions are difficult to understand. For example, regarding inflation, he explains over many pages of testimony that inflation is expected to subside due to vaccination progress and easing supply constraints.[9] He also notes that financial markets have already priced in high inflation rates, and therefore higher inflation rates "do not necessarily mean higher cost of capital than presently reflected."[10] However, when explaining his rational for recommending a

[9] Direct Testimony of Seoung Joun Won, PhD, at pp. 8-12.
[10] Direct Testimony of Seoung Joun Won, PhD, at p. 8.

return for EDG that is considerably higher than the results of his ROE models, Dr. Won observed as follows:

> [T]he current U.S. inflation rate is almost at its highest level in 40 years. The Fed previously forecasted that a higher inflation rate reflected "transitory" factors as during the period of the 2021 Spire Missouri rate case but not anymore.[11]

Similarly, regarding interest rates, Dr. Won states that "[t]he higher unemployment rate means that the economy is yet to fully recover to its pre-pandemic level and that supports a reasonable belief that the Fed will maintain near-zero interest rates to continue to support economic growth."[12] However, once again, Dr. Won relies on the exact opposite conclusion to support his ROE recommendation, opining that "interest rates are expected to rise after the Fed Chair Powell announced probable interest rate increases in 2022."[13]

**Q. Please discuss how you have analyzed changes in capital market conditions.**

A. In order to evaluate changes in capital market conditions, I have compared relevant market data at three points in time: 1) the first quarter of 2021, when Staff and intervenors filed Direct Testimony in the 2021 Spire Missouri case that forms the basis for Dr. Won's comparative ROE analyses: 2) the fourth quarter of 2022 (i.e., the period reflected in Dr. Won's analysis in this case); and 3) February 28, 2022 (current market conditions). In particular, my analysis focuses on two indicators that are important to equity investors: 1) Treasury bond yields; and 2) inflation. Together, these indicators demonstrate that the cost of equity for natural gas utilities is higher in 2022 than it was in the first quarter of 2021,

[11] Direct Testimony of Seoung Joun Won, PhD, at p. 27.
[12] Direct Testimony of Seoung Joun Won, PhD, at p. 12.
[13] Direct Testimony of Seoung Joun Won, PhD, at p. 27.

when the analysis supporting Spire Missouri's 9.37 percent authorized ROE was conducted.

**Q. Please discuss how government bond yields have changed over this period and the implications for equity investors considering the utility sector.**

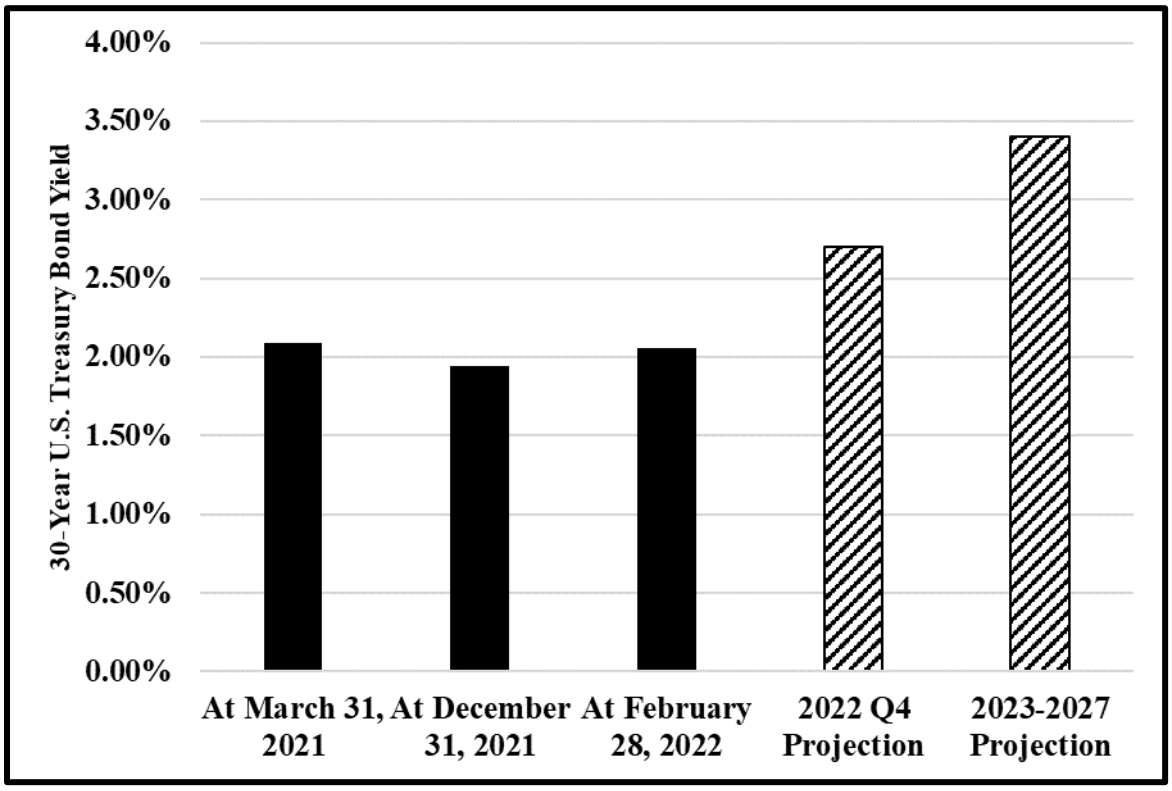
A. The average yield on 30-year U.S. Treasury bond yields in the first quarter of 2021 was 2.09 percent. As shown in Figure 3, the three-month average yield on 30-year Treasury bonds declined slightly by December 31, 2021, and February 28, 2022, to 1.94 percent and 2.05 percent, respectively.[14] However, as also shown in Figure 3, yields on 30-year Treasury bonds are projected to increase to 2.70 percent in the fourth quarter of 2022[15] and to 3.40 percent over the period from 2023-2027.[16]

[14] My typical practice is to rely on 30-day average yields, as opposed to 3-month average yields, on 30-Year U.S. Treasury bonds as the measure of the current risk-free rate. However, I have reflected 3-month average yields herein to be consistent with the approach utilized by Dr. Won.

[15] Blue Chip Financial Forecasts, Vol. 41, Issue No. 3, March 1, 2022, at p. 2.

[16] Blue Chip Financial Forecasts, Vol. 40, Issue No. 12, December 1, 2021, at p. 14.

**Figure 3: Comparison of U.S. Treasury Bond Yields**




While it is often reasonable to use current yields on government bonds as the risk-free rate in the CAPM and Risk Premium models, that assumption is not appropriate when bond yields are expected to change significantly from current levels during the period in which rates are to be in effect. Under these circumstances, the use of current government bond yields by Dr. Won contributes to the unreliability of the results of his CAPM and Risk Premium analyses. In addition, higher government bond yields place pressure on the valuations of utility companies. If the share prices of the companies in my natural gas utility proxy group were to decline, the dividend yields used in the DCF analysis for these companies would increase. As discussed in my Direct Testimony, using a dividend yield

based on recent historical stock prices may cause the DCF model to understate investors' forward-looking return requirements.[17]

**Q. Is there additional evidence that investors expect government bond yields to increase?**

A. Yes, there is. Several equity analysts have expressed their expectation that long-term government bond yields will increase through 2022. Figure 4 below summarizes the views of six different equity analysts who expect 10-year U.S. Treasury bond yields to range from 1.75 percent to 2.50 percent in 2022.

**Figure 5: 10-Year U.S. Treasury Bond Yield Forecasts – Survey of Equity Analysts[18]**

| Institution | 10-Year U.S. Treasury Bond Yield | |
|---|---|---|
| | 3-Month Average as of December 31, 2021 | 2022 Forecast |
| Barclays | 1.49% | 1.75% |
| Morgan Stanley | 1.49% | 2.10% |
| Goldman Sachs | 1.49% | 2.00% |
| JP Morgan | 1.49% | 2.10% |
| Wells Fargo | 1.49% | 2.00% - 2.50% |
| Amundi | 1.49% | 1.80% - 2.00% |

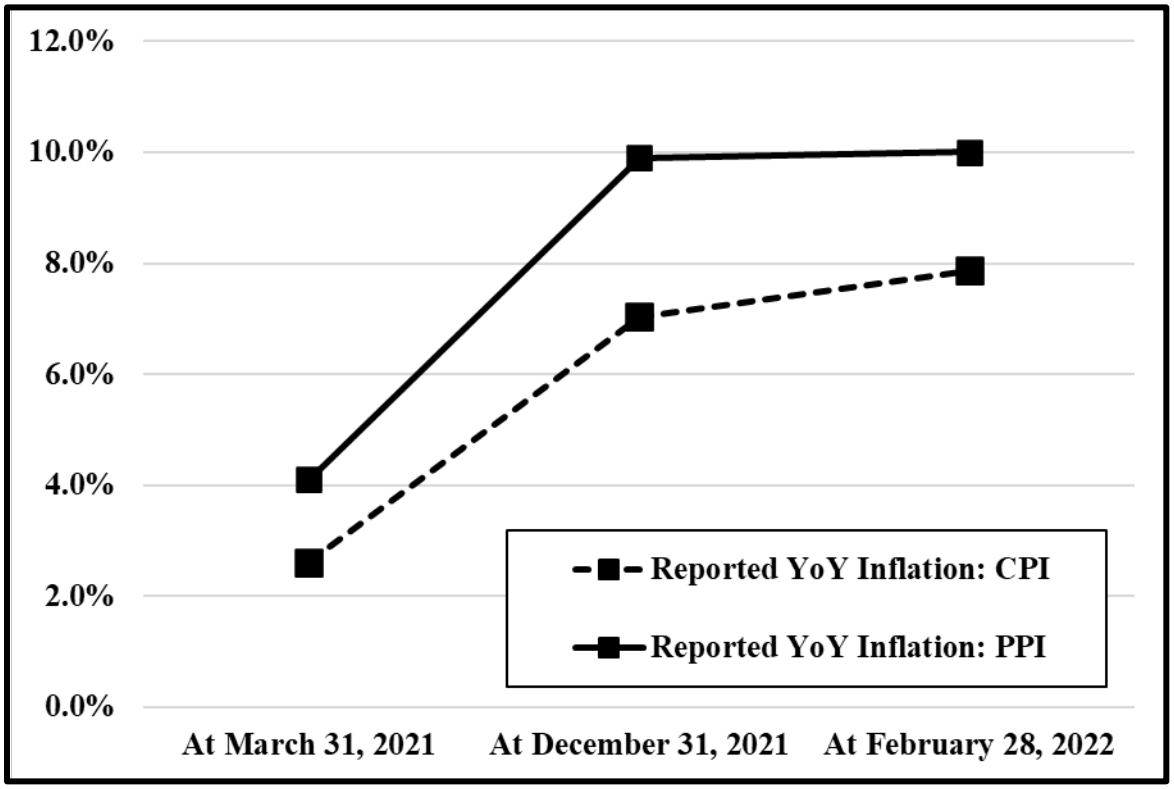
**Q. Dr. Won recognizes that inflation has increased, but he contends that inflation will moderate. What is your response?**

A. The inflation outlook has deteriorated significantly in recent months. In his testimony before the Senate Banking, Housing, and Urban Affairs Committee on November 30, 2021, Federal Reserve Chair Jerome Powell indicated that the central bank would no longer refer to inflation as "transitory."[19] As shown in Figure 5, inflation as measured by the consumer

[17] Direct Testimony of John J. Reed, at p. 29.
[18] "Factbox: Wall Street Forecasts for the U.S. Dollar and 10-Year Treasury Yield in 2022." Reuters, November 18, 2021, https://www.reuters.com/markets/us/wall-street-forecasts-us-dollar-10-year-treasury-yield-2022-2021-11-18/.
[19] CNBC, "Powell says Fed will discuss speeding up bond-buying taper at December meeting," November 30, 2021.

price index ("CPI") and the producer price index ("PPI") has increased significantly since Staff's analysis in the Spire Missouri 2021 rate case was conducted.

**Figure 6: Comparison of Inflation Rates**




Higher inflation rates are entirely predictable given the extraordinary monetary policy accommodation of the U.S. Federal Reserve and other central banks around the world during the COVID-19 pandemic and the aggressive actions taken by the U.S. Congress to stimulate the economy described in my Direct Testimony.[20] As a result, the money supply as measured by M2 has increased by more than 31 percent since January 2020. It is not surprising that consumer price inflation ("CPI") has surged to levels not seen since 1982, increasing by 7.9 percent for the 12-month period ending February 2022.

[20] Direct Testimony of John J. Reed, at pp. 16-17.

Similarly, producer price inflation increased at an annual rate of 10.0 percent over the same period, as reported by the BLS on March 15, 2022.

At its meeting in March 2022, the Federal Reserve lifted the federal funds rate by 25 basis points, the first such rate increase since 2018.[21] The Federal Reserve also indicated that it anticipates six additional 25-basis point increases in the federal funds rate in 2022. While these moves are intended to combat inflation, the Federal Reserve still projects that inflation will remain above 4 percent in 2022. Further, Federal Reserve Chair Jerome Powell noted in his post-meeting news conference that "[i]nflation remains elevated, reflecting supply and demand imbalances related to the pandemic, higher energy prices, and broader price pressures."[22]

The inflation risks in the market are twofold: 1) that either inflation becomes embedded in the economy if the Federal Reserve moves too slowly in tightening monetary policy, or 2) that the Federal Reserve responds to inflationary pressure by raising interest rates sooner than expected or more than expected, thereby causing a slowdown in economic growth or a recession.

The Chief Economist for Stifel, an investment management firm based in St. Louis, recently made the following comments about inflation and Federal Reserve policy:

> The Fed has absolutely lost control of inflation and inflation expectations, or at least it appears that way. Policy makes arguably should have moved a

[21] New York Times, "Fed Raises Rates and Projects Six More Increases in 2022," March 16, 2022, https://www.nytimes.com/live/2022/03/16/business/fed-meeting-interest-rates#fed-raises-interest-rates.

[22] CNBC, "Federal Reserve Approves First Interest Rate Hike in More Than Three Years, Sees Six More Ahead," March 16, 2022, https://www.cnbc.com/2022/03/16/federal-reserve-meeting.html.

> lot sooner to pull back on easy policy earlier this year, when inflation was showing signs of persisting beyond what most economists would be comfortable with, even temporarily.
>
> But they continued to stick with their assessment that this is transitory. The fear is not that they won't be able to rein in price pressures eventually, but that now they may have to move at a faster pace than they would have otherwise needed to. By waiting so long, they've created an even more difficult challenge for themselves.[23]

For all of these reasons, I disagree with Dr. Won that inflation is likely to significantly subside and that the Commission should not be concerned about how higher inflation will affect the cost of equity for regulated utilities such as EDG. The evidence demonstrates that inflation has increased significantly since the first quarter of 2021, and the market is coming to believe that inflation will not return to prior levels around 2.0 percent anytime soon. This suggests that investors will require a higher authorized ROE to compensate them for the risks associated with higher inflation.

**Q. What is the outlook for the utility sector among investors and equity analysts?**

A. The utility sector is expected to continue to underperform the broader market as the economy recovers and interest rates increase. Dr. Won shares this view, stating: "During economic recovery, utilities tend to underperform the broader market which, consequently, pushes COE for utilities higher."[24] Fidelity Investments, for example, recently reported that the utility sector had the weakest one-year return of the eleven S&P sectors, and

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[23] MarketWatch, "Behind highest U.S. inflation rate in 31 years lurks fear that Federal Reserve has 'lost control' of consumer prices," November 11, 2021.

[24] Direct Testimony of Seoung Joun Won, PhD, at p. 9.

Fidelity recommended underweighting the utility sector, noting that "weak fundamentals and high valuations could be headwinds for utilities and real estate, especially if rates increase."[25] Similarly, Charles Schwab has continued to classify the utility sector as "Underperform", noting several negative factors for the sector including that interest rates are expected to recover from their recent decline, that economic recovery makes the sector less attractive relative to other sectors, and unattractive valuations. Schwab has also noted risks for the sector including uncertainty regarding potential clean-energy legislative funding and much higher interest rates due to an unexpected rise in inflation.[26]

**Q. Do you have any further comments regarding capital market conditions?**

A. Yes, I do. Global events, and in particular the conflict between Russia and Ukraine, are having a significant effect on capital markets across the globe and have already increased market volatility. However, the outcome of these developments, and their longer-term impact, is currently uncertain. Therefore, while my recommended ROE takes into account current and prospective capital market conditions, I have not specifically adjusted my recommended ROE in response to these events.

**Q. What are your conclusions regarding the effect of capital market conditions on the cost of equity for EDG?**

A. There are two important conclusions regarding the effect of capital market conditions for EDG:

1) The trend in interest rates and inflation both demonstrate that the cost of equity has increased since Staff's analysis in Spire Missouri's 2021 rate case was developed.

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[25] Fidelity Investments, "Q4 2021 sector scorecard: Communication services, utilities, and health care led Q3 as economic growth slowed," October 27, 2021.

[26] Charles Schwab, "Sector Views: Utilities Sector Rating: Underperform," November 18, 2021.

Despite offering testimony contradicting this conclusion, Dr. Won appears to agree, recommending an ROE for EDG that is 13 basis points higher than the ROE that he recommended for Spire Missouri.

2) While the ROE estimation models use some historical data (i.e., stock prices and dividends in the DCF model, and bond yields in the CAPM), based on the expectation that interest rates will increase, it is also appropriate to consider near-term projections in the ROE estimation models.

## V. RESPONSE TO DR. WON'S ROE ANALYSES

**Q. Please provide an overview of Dr. Won's ROE analyses.**

A. Dr. Won develops multiple models including the DCF, CAPM and Bond Yield Risk Premium approaches and estimates a range of results from each methodology. Figure 6 summarizes the results of his ROE estimates and compares the ROE results to those that Dr. Won recalculated for the last Spire Missouri rate case.

**Figure 7: Comparison of Dr. Won's ROE Results to Staff's Recalculated Results For the 2021 Spire Missouri Case**

| Methodology | Recalculated 2021 Spire Missouri Results | Dr. Won's Current Range |
|---|---|---|
| DCF | 9.03%-9.25%<br>Mean: 9.14% | 9.08%-9.32%<br>Mean: 9.20%[27] |
| CAPM | 5.83%-8.48%<br>Mean: 7.16% | 5.71%-8.47%<br>Mean: 7.09%[28] |
| Bond Yield Plus Risk Premium | NA | 7.08%-9.31%[29] |
| Recently Authorized ROEs for Natural Gas Utilities | 12-Month Average: 9.51% | 2021 Average: 9.57%[30] |

[27] Direct Testimony of Seoung Joun Won, PhD, at p. 22.
[28] Ibid, at p. 24.
[29] Ibid, at p. 25.
[30] Ibid, at p. 28.

**Q. Is Dr. Won's ROE recommendation based on the results of his ROE estimation models?**

A. No, it is not. As shown in Figure 6, Dr. Won's ROE estimation models suggest a range of 5.71 percent to 9.32 percent, and his mean values are all at or below 9.20 percent. However, he essentially disregards the results of his ROE estimation methodologies when he establishes a recommended range for EDG from 9.25 percent to 9.75 percent. He does not explain how the upper end of his recommended range (i.e., 9.75 percent) is derived, which is notable because the upper end of his recommended range is 43 basis points higher than any of his ROE model results. Dr. Won arrives at his recommendation of 9.50 percent by adding 13 basis points (rather than subtracting 1 basis point, as suggested by his comparative analysis) to the 9.37 percent ROE that was authorized in the 2021 Spire Missouri rate case.

**Q. What are the principal areas of disagreement with the methodologies that Dr. Won uses as the basis for his modeling?**

A. I have many areas of disagreement with the technical aspects of Dr. Won's ROE analysis. However, as a practical matter, Dr. Won does not actually rely on any of those analyses to support his recommendation for EDG, as they all produce results that are significantly below his recommended ROE range and point estimate of 9.50 percent. Dr. Won's ROE recommendation is also not based on his comparison of the results of his ROE models in this case to the results of the ROEs model that he recalculated for Spire Missouri's 2021 rate case. Instead, Dr. Won subjectively adds 13 basis points to the 9.37 ROE recently authorized for Spire Missouri due to EDG's small size and changes in capital market conditions. While I disagree with many aspects of Dr. Won's DCF, CAPM and Risk

Premium analyses, the fact is that he has not relied on those models in the development of his range or his ROE recommendation. Therefore, my response to Dr. Won will address each methodology at only a high level, and I will focus more specifically on the comparison underlying his recommended return.

**A. DCF Analysis**

**Q. Please summarize Dr. Won's DCF model.**

A. Dr. Won's DCF analysis is a two-stage model which relies on projected earnings growth rates from Value Line, S&P Global Market Intelligence, and Zacks Investment Research as the estimate of the short-term growth rate and projected GDP growth as the long-term growth rate.[31] For the long-term growth rate, Dr. Won relies on a projected nominal GDP growth estimate from the Congressional Budget Office of 3.70 percent. As shown in Schedule SJW-13, Dr. Won's combined growth rate is the result of assigning an 80 percent weight to the average EPS growth rates and a 20 percent weight to the long-term GDP growth rate. Schedule SJW-13 shows the results of Dr. Won's DCF analysis.

**Q. Are the results of Dr. Won's DCF model reasonable?**

A. No. Dr. Won's DCF analysis understates the cost of equity when compared with the authorized equity returns for natural gas utilities in other jurisdictions. The mean result of Dr. Won's DCF analysis of 9.20 percent is well below the average authorized ROEs for natural gas utilities of since January 1, 2021, of 9.54 percent. Of the 46 natural gas utility

[31] Direct Testimony of Seoung Joun Won, PhD, at p. 22.

rate cases with authorized ROEs since January 1, 2021, only five resulted in authorized ROEs that are lower than the result of Dr. Won's DCF analysis. Further, all five such cases relate to natural gas utilities operating in New York. The *Hope* and *Bluefield* decisions, which Dr. Won acknowledges are standards for setting a just and reasonable return,[32] require the authorized return to be comparable to other returns available to investors in companies with similar risk. Dr. Won's DCF results do not meet this standard.

**Q. What are the primary drivers of the unreasonably low results of Dr. Won's DCF analyses?**

A. There are three main factors that contribute to the unreasonably low results of Dr. Won's DCF model: 1) the dividend yield; 2) the long-term growth rate; and 3) Dr. Won's averaging convention. As discussed in my Direct Testimony, dividend yields for natural gas utilities are currently suppressed by the low interest rate environment.[33] One assumption of the DCF model is that the P/E ratio will remain constant in perpetuity. As interest rates increase, high natural gas utility valuations are expected to decline. As such, it is not reasonable to set the forward-looking cost of equity for EDG based entirely on the DCF model when the underlying assumptions of that model are being violated. If the utilities sector underperforms as analysts expect, utility stock valuations will decline, and

[32] Direct Testimony of Seoung Joun Won, PhD, at p. 6.
[33] Direct Testimony of John J. Reed, at p. 43.

the dividend yield in the DCF model (which is based on average historical stock prices) will increase.

With respect to the long-term growth rate, Dr. Won's estimate of projected nominal GDP growth of 3.70 percent is well below Blue Chip's consensus forecast of nominal GDP growth rate of 4.24 percent, which is based on real GDP growth of 2.00 percent and projected inflation of 2.20 percent for the period from 2028-2032.[34] In addition, Dr. Won's projected GDP growth rate is much lower than the 5.49 percent GDP growth rate used in my Multi-Stage DCF analysis, which was based on historical average real GDP growth of 3.14 percent and projected inflation of 2.28 percent.[35]

Finally, with respect to the averaging convention, Dr. Won has inexplicably changed his approach to calculating the average DCF result. Dr. Won's adjustment to his approach is not explained anywhere in his testimony, and it substantially affects both (1) the results of his DCF model, and (2) the results of his comparative DCF analysis.

**Q. How does Dr. Won calculate the average DCF result?**

A. Dr. Won states that his DCF analysis produced results ranging from 9.08 percent to 9.32 percent, with a point estimate of 9.20 percent (i.e., the average of the upper and lower bounds of his range).[36] However, as shown on Schedule SJW-13, Dr. Won's individual company DCF results actually range from 8.30 percent to 11.78 percent. The average of all seven of Dr. Won's individual company DCF results is 9.53 percent, or 33 basis points higher than the result Dr. Won cites in his testimony.

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[34] Blue Chip Financial Forecasts, Vol. 40, Issue No. 12, December 1, 2021, at p. 14.
[35] Direct Testimony of John J. Reed, at pp. 40-41.
[36] Direct Testimony of Seoung Joun Won, PhD, at p. 22.

To calculate the lower bound DCF result, Dr. Won takes the average of his third and fourth lowest individual company DCF results (i.e., his 9.07 percent result for Atmos Energy Corporation and his 9.10 percent result for Northwest Natural Holding Company). To calculate the upper bound DCF result, Dr. Won takes the average of his third and fourth highest individual company DCF result (i.e., his 9.55 percent result for Southwest Gas Holdings, Inc. and his 9.10 percent result for Northwest Natural Holding Company). In doing so, Dr. Won excludes four of his seven individual company DCF results (i.e., more than half of his proxy companies). Considering the already small size of Dr. Won's proxy group, this procedure undermines the reliability of his DCF model.

While it is generally reasonable to consider whether outlier results are unduly distorting the proxy group average DCF results, the adjustment rationale should be explained. Further, an adjustment methodology that excludes more than half of proxy group is unlikely to be the optimal adjustment methodology.

**Q. Is Dr. Won's approach consistent with the approach he has taken in prior cases?**

A. No, it is not. In the 2021 Spire Missouri proceeding that Dr. Won relies on for his comparative DCF analysis, Dr. Won did not use this approach. Rather, he relied on the average of all his individual company DCF results.[37] Dr. Won does not provide any rational for departing from that methodology in this case.

[37] Case No. GR-2021-0108, Schedule SJW-13.

**Q. Please briefly explain Dr. Won's comparative DCF analysis.**

A. Dr. Won compares the results of his DCF model using data through the fourth quarter of 2021 with the results of the same model that he recalculated using data only through the first quarter of 2021 (i.e., a period intended to represent Spire Missouri's 2021 rate case).

**Q. Do you agree with the comparison that Dr. Won performs between the recalculated analysis from the 2021 Spire Missouri rate case and the analysis he performed in this proceeding?**

A. No, I do not. Dr. Won compares the mean results from the 2021 Q1 DCF analysis of 9.14 percent to the mean result of his current analysis of 9.20 percent. However, Dr. Won's revised approach to calculating his mean DCF results significantly affects this comparison. Had Dr. Won used his standard approach of relying on the average of all his individual company DCF results, as opposed to his current approach of excluding the results of more than half his proxy group, his comparative DCF analysis would have suggested that the cost of equity has decreased by 120 basis points (a clearly nonsensical result). Rather than adjusting his approach to calculating the mean DCF result, Dr. Won should have instead considered how market factors are undermining the reliability of his DCF model.

**Q. How would Dr. Won's results in the 2021 Spire Missouri rate case have changed if he had employed the averaging methodology he developed for this proceeding?**

A. In the 2021 Spire Missouri rate case, Dr. Won's comparative DCF analysis suggested that the cost of equity for natural gas utilities fell by 52 basis points between the two time periods he studied (i.e., 2020 and 2017). However, as shown in **Rebuttal Schedules JJR-1**, had Dr. Won employed the averaging methodology he reflected in this proceeding, his

analysis would have suggested a 57-basis point increase in the cost of equity, an increase of more than 100 basis points.

### B. Capital Asset Pricing Model

**Q. Please summarize Dr. Won's application of the CAPM.**

A. As shown in Schedule SJW-14, Dr. Won's CAPM analysis uses a risk-free rate based on the average yield on the 30-year Treasury bond of 1.95 percent, Value Line betas that average 0.90 for his proxy group companies, and four measures of the market risk premium. The first (4.63 percent) is the long-term geometric average of historical return differences between large company stocks and long-term government bond yields from 1926-2020. The second (6.07 percent) is based on the long-term arithmetic average of historical return differences between large company stocks and long-term government bond yields over the same time-period. The third (4.84 percent) is the long-term geometric average of historical return differences between the S&P 500 and long-term government bonds from 1928-2020. The fourth (6.43 percent) reflects the long-term arithmetic mean of historical return differences between the S&P 500 and long-term government bonds from 1928-2020. The results of Dr. Won's CAPM analyses range from 5.71 percent to 8.47 percent, with a mean of 7.09 percent.[38]

**Q. How do the results of Dr. Won's CAPM analysis compare to authorized ROEs for natural gas utilities?**

A. The range produced by Dr. Won's CAPM analysis of 5.71 percent to 8.47 percent is too low to be considered reasonable. According to data from Regulatory Research Associates,

[38] Direct Testimony of Seoung Joun Won, PhD, at p. 24.

there have been no authorized returns at these levels for natural gas utilities over the past 40 years.

**Q. Do you disagree with Dr. Won's estimated risk-free rate and market risk premium range?**

A. Yes, I do. For example, as discussed in Section IV above, I do not agree with Dr. Won's exclusive reliance on the current risk-free rate. Further, the cost of capital is a forward-looking methodology, and it is therefore not appropriate to rely on a historical measure of the market risk premium. For example, as Duff & Phelps note:

> The risk-free rate and the ERP, like all components of the cost of equity capital (and the cost of equity capital itself), are forward-looking concepts. The reason that the cost of capital is a forward- looking concept is straightforward: when we value a company (for instance), we are trying to value how much we would pay (now) for the future economic benefits associated with owning the company. Since we will ultimately use the cost of capital to discount these future economic benefits (usually measured as expected cash flows) back to their present value, the cost of capital itself must also be forward-looking.[39]

However, because Dr. Won does not rely on his CAPM methodology when making his recommendation, and the result of this approach demonstrates that his assumptions are unreasonable, I do not address in further detail the concerns I have with the methodology that Dr. Won uses to estimate the risk-free rate and MRP.

### C. Bond Yield Plus Risk Premium Approach

**Q. Please summarize Dr. Won's Bond Yield Plus Risk Premium analysis.**

A. In this analysis, Dr. Won adds an equity risk premium to the yield-to-maturity on a company's long-term debt. The yield-to-maturity is the three-month average yield on

[39] Duff & Phelps, 2018 Cost of Capital: Annual U.S. Guidance and Examples, Chapter 3: Basic Building Blocks of the Cost of Equity Capital – Risk-Free Rate & Equity Risk Premium, at p. 2.

Moody's A- and Baa rated public utility bonds as of December 31, 2021 of 3.08 percent and 3.31 percent, respectively. Dr. Won establishes his range by adding to this yield a range of risk premiums from 4% to 6%. The result of his bond-yield risk premium approach is a range from 7.08 percent to 9.31 percent.[40]

**Q. Do you agree with this methodology?**

A. While I agree that it is generally appropriate to rely on risk premium methodologies, Dr. Won's risk premium approach relies on unsupported estimates of the market risk premium. In addition to lacking support for the critical assumption in this analysis, Dr. Won's analysis relies on a three-month average yield on utility bonds that does not reflect the expectation of rising interest rates. As such, this methodology is not reflective of investor's forward-looking return requirements. Dr. Won does not rely on his risk premium analysis, concluding only that it supports the reasonableness of his DCF and CAPM analyses.

### D. Authorized Returns in Other Jurisdictions

**Q. Please summarize Dr. Won's analysis of authorized returns in other jurisdictions.**

A. Dr. Won summarizes the authorized returns for all rate cases, fully litigated rate cases only and settled rate cases only for natural gas utilities in other jurisdictions from 2010 to 2021.[41] Dr. Won's data from Regulatory Research Associates indicate that the average authorized ROE for natural gas utilities in both fully litigated and settled proceedings has been in the range of 9.46 percent to 10.15 percent over this period.

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[40] Direct Testimony of Seoung Joun Won, PhD, at p. 25.
[41] Direct Testimony of Seoung Joun Won, PhD, at p. 28.

**Q. Do you have any concerns with the authorized returns Dr. Won has considered?**

A. Yes. As shown in Figure 2, Dr. Won's recommendation is lower than the average authorized ROE for natural gas utilities since 2019. As noted above, 66 out of 110 decisions (i.e., 60.00 percent) from January 2019 through February 2022 have been at 9.50 percent or higher.

**Q. Has Dr. Won presented any evidence that EDG is a below-average risk utility?**

A. No. Dr. Won has presented no evidence that EDG is of below-average risk relative to other natural gas utilities across the U.S., or his proxy group companies. In fact, he has acknowledged that EDG has a "unique risk profile" due to its small size.[42] As discussed in my Direct Testimony, it is well recognized by both academics and investors that smaller companies are riskier, all else equal.[43] While Dr. Won does not explicitly comment on the effect of EDG's small size on its risk profile, he appears to acknowledge EDG's above-average risk by recommending an ROE that is higher than the results of his ROE models.

**Q. Is it important to conduct an analysis of the relative risk of EDG and the proxy companies?**

A. Yes, it is, and the Commission has expressly considered relative risk in assessing the sufficiency of ROE recommendations. For example, in its decision in Spire Missouri's 2017 rate case, the Commission concluded that the ROE recommendation of 9.20 percent proposed by the OPC was too low because the OPC did not consider the fact that Spire Missouri faced increased business risk when compared to OPC's proxy group.[44]

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[42] Direct Testimony of Seoung Joun Won, PhD, at p. 26.
[43] Direct Testimony of John J. Reed, at pp. 54-57.
[44] *In the Matter of Laclede Gas Company's Request to increase its Revenues for Gas Service*, File No. ER-2017-0215 and File No. GR-2017-0216, Report and Order (Feb. 21, 2018), at p. 31.

**Q. Have you conducted a comparative risk analysis?**

A. Yes, as discussed in my Direct Testimony, I evaluated the small size of EDG relative to the proxy group companies and the regulatory risk of EDG as compared to the companies in the proxy group. I concluded that EDG had greater business risk than the average company in the proxy group.[45] Based on this risk assessment, an authorized ROE below the average authorized ROE for natural gas utilities would not sufficiently compensate equity investors for the incremental risk faced by EDG relative to the proxy group companies.

## VI. CAPITAL STRUCTURE

**Q. Please summarize Staff's position regarding the authorized capital structure for EDG in this case.**

A. Staff recommends that the Commission set EDG's allowed rate of return based on the most economical capital structure, which Staff states is EDE's capital structure as of September 30, 2021, of 53.84 percent common equity and 46.16 percent long-term debt.[46] Staff observes that EDG does not have an issuer rating from any credit rating agency and Staff therefore recommends that EDG's ratemaking capital structure reflect the consolidated capital structure of one of its parents. Dr. Won selects EDE's consolidated capital structure as the basis for his recommendation because EDE's consolidated capital structure contains

[45] Direct Testimony of John J. Reed, Section VIII, at pp. 55-66.
[46] Direct Testimony of Seoung Joun Won, PhD, at pp. 17-19.

less equity than the consolidated capital structures of APUC or LUCo. Dr. Won indicates that Staff's recommendation is subject to change based on any "true-up data" the Company may provide.[47]

**Q. How do you respond to Dr. Won's capital structure recommendation?**

A. I do not agree that the Commission should reflect the capital structure of EDG's corporate parent for ratemaking purposes instead of EDG's stand-alone capital structure, as recommended in my Direct Testimony. However, as a practical matter, Staff recommends that the Commission adopt a ratemaking common equity ratio for EDG that is higher than the common equity ratio the Company originally requested. Thus, the Company's initially proposed common equity ratio is conservative compared to Staff's recommendation.

## VII. SUMMARY AND RECOMMENDATIONS

**Q. Please summarize your conclusions and recommendations regarding the appropriate ROE for EDG in this proceeding.**

A. I continue to support the results of the ROE analysis presented in my Direct Testimony, which results in a reasonable range of ROE for EDG of 9.50 percent to 10.40 percent. While the results of financial models provide a starting point, my ROE recommendation also considers other factors, including company-specific risk factors, capital market conditions and the capital attraction standard. Considering the financial and business risk factors facing EDG, and the expectation that interest rates will continue to increase over the near term as the economy recovers from COVID-19, my recommended ROE of 10.0 percent is reasonable and appropriate.

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[47] Direct Testimony of Seoung Joun Won, PhD, at p. 19.

- Nothing in Dr. Won's testimony has caused me to change my range of results and or my recommendation.
- Dr. Won does not rely on the results of any of his models to develop his ROE recommendation of 9.50 percent.
- Dr. Won's reliance on a comparison of his DCF and CAPM results for EDG in this proceeding to those for a similar model at the time of Spire Missouri's 2021 rate case does not provide sufficient support for his recommendation.
- Finally, recently authorized ROEs for natural gas utilities support a higher ROE for EDG than that recommended by Staff, and the prospective economic climate, which is becoming very challenging in terms of inflation and interest rates, supports an ROE for EDG that is at the high end of the peer group range.

**Q. What is your recommendation regarding a reasonable capital structure for EDG?**

A. I support the Company's proposed actual pro forma capital structure of 52.44 percent common equity and 47.56 percent long-term debt.[48] This capital structure represents the manner in which the Company is actually capitalized. Further, this capital structure is conservative relative to the capital structure Staff recommends.

**Q. Does this conclude your Rebuttal Testimony?**

A. Yes, it does.

[48] Balances should be updated to reflect the September 30, 2021, amounts of 51.47 percent common equity and 48.53 percent long-term debt.

**VERIFICATION**

I, John J. Reed, under penalty of perjury, on this 17th day of March, 2022, declare that the foregoing is true and correct to the best of my knowledge and belief.

/s/ John J. Reed