

**BEFORE THE**  
**WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

WASHINGTON UTILITIES AND  
TRANSPORTATION COMMISSION,

Complainant,

v.

CASCADE NATURAL GAS  
CORPORATION,

Respondent.

DOCKET UG-240008

**CASCADE NATURAL GAS CORPORATION**

**FIFTH EXHIBIT TO THE**  
**DIRECT TESTIMONY OF ANN E. BULKLEY**

**March 29, 2024**

**CAPITAL ASSET PRICING MODEL  
CURRENT RISK FREE RATE AND VALUE LINE BETA**

$$K = R_f + \beta (R_m - R_f)$$

$$K = R_f + 0.25 \times (R_m - R_f) + 0.75 \times \beta \times (R_m - R_f)$$

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Current 30-day average of 30-year U.S. Treasury bond yield	Beta ( $\beta$ )	Market Return ( $R_m$ )	Market Risk Premium ( $R_m - R_f$ )	CAPM ROE (K)	ECAPM ROE (K)
Atmos Energy Corporation	ATO	4.19%	0.85	12.22%	8.03%	11.01%	11.32%
NiSource Inc.	NI	4.19%	0.90	12.22%	8.03%	11.42%	11.62%
Northwest Natural Gas Company	NWN	4.19%	0.85	12.22%	8.03%	11.01%	11.32%
ONE Gas, Inc.	OGS	4.19%	0.85	12.22%	8.03%	11.01%	11.32%
Spire, Inc.	SR	4.19%	0.85	12.22%	8.03%	11.01%	11.32%
Mean						11.09%	11.38%
Median						11.01%	11.32%

Notes:

[1] Bloomberg Professional 30-day average as of January 31, 2023

[2] Value Line

[3] Market Return

[4] Equals [3]-[1]

[5] Equals [1] + [2] x [4]

[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

**CAPITAL ASSET PRICING MODEL**  
**NEAR TERM PROJECTED RISK-FREE RATE AND VALUE LINE BETA**

$$K = R_f + \beta (R_m - R_f)$$

$$K = R_f + 0.25 \times (R_m - R_f) + 0.75 \times \beta \times (R_m - R_f)$$

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Near-term projected 30-year U.S. Treasury bond yield (Q2 2024 - Q2 2025)	Beta ( $\beta$ )	Market Return ( $R_m$ )	Market Risk Premium ( $R_m - R_f$ )	CAPM ROE (K)	ECAPM ROE (K)
Atmos Energy Corporation	ATO	4.10%	0.85	12.22%	8.12%	11.00%	11.31%
NiSource Inc.	NI	4.10%	0.90	12.22%	8.12%	11.41%	11.61%
Northwest Natural Gas Company	NWN	4.10%	0.85	12.22%	8.12%	11.00%	11.31%
ONE Gas, Inc.	OGS	4.10%	0.85	12.22%	8.12%	11.00%	11.31%
Spire, Inc.	SR	4.10%	0.85	12.22%	8.12%	11.00%	11.31%
Mean						11.08%	11.37%
Median						11.00%	11.31%

Notes:

[1] Blue Chip Financial Forecasts, Vol. 43, No. 2, February 1, 2024, at 2

[2] Value Line

[3] Market Return

[4] Equals [3]-[1]

[5] Equals [1] + [2] x [4]

[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

**CAPITAL ASSET PRICING MODEL**  
**LONG-TERM PROJECTED RISK-FREE RATE AND VALUE LINE BETA**

$$K = R_f + \beta (R_m - R_f)$$

$$K = R_f + 0.25 \times (R_m - R_f) + 0.75 \times \beta \times (R_m - R_f)$$

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Projected 30-year U.S. Treasury bond yield (2025 - 2029)	Beta ( $\beta$ )	Market Return (Rm)	Market Risk Premium (Rm - Rf)	CAPM ROE (K)	ECAPM ROE (K)
Atmos Energy Corporation	ATO	4.10%	0.85	12.22%	8.12%	11.00%	11.31%
NiSource Inc.	NI	4.10%	0.90	12.22%	8.12%	11.41%	11.61%
Northwest Natural Gas Company	NWN	4.10%	0.85	12.22%	8.12%	11.00%	11.31%
ONE Gas, Inc.	OGS	4.10%	0.85	12.22%	8.12%	11.00%	11.31%
Spire, Inc.	SR	4.10%	0.85	12.22%	8.12%	11.00%	11.31%
Mean						11.08%	11.37%
Median						11.00%	11.31%

Notes:

[1] Blue Chip Financial Forecasts, Vol. 42, No. 12, December 1, 2023, at 14

[2] Value Line

[3] Market Return

[4] Equals [3]-[1]

[5] Equals [1] + [2] x [4]

[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

**CAPITAL ASSET PRICING MODEL  
CURRENT RISK FREE RATE AND BLOOMBERG BETA**

$$K = R_f + \beta (R_m - R_f)$$

$$K = R_f + 0.25 \times (R_m - R_f) + 0.75 \times \beta \times (R_m - R_f)$$

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Current 30-day average of 30-year U.S. Treasury bond yield	Beta ( $\beta$ )	Market Return (Rm)	Market Risk Premium (Rm - Rf)	CAPM ROE (K)	ECAPM ROE (K)
Atmos Energy Corporation	ATO	4.19%	0.75	12.22%	8.03%	10.23%	10.72%
NiSource Inc.	NI	4.19%	0.81	12.22%	8.03%	10.66%	11.05%
Northwest Natural Gas Company	NWN	4.19%	0.70	12.22%	8.03%	9.83%	10.42%
ONE Gas, Inc.	OGS	4.19%	0.78	12.22%	8.03%	10.47%	10.91%
Spire, Inc.	SR	4.19%	0.77	12.22%	8.03%	10.37%	10.83%
Mean						10.31%	10.79%
Median						10.37%	10.83%

Notes:

[1] Bloomberg Professional 30-day average as of January 31, 2023

[2] Bloomberg Professional

[3] Market Return

[4] Equals [3]-[1]

[5] Equals [1] + [2] x [4]

[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

**CAPITAL ASSET PRICING MODEL**  
**NEAR TERM PROJECTED RISK-FREE RATE AND BLOOMBERG BETA**

$$K = R_f + \beta (R_m - R_f)$$

$$K = R_f + 0.25 \times (R_m - R_f) + 0.75 \times \beta \times (R_m - R_f)$$

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Near-term projected 30-year U.S. Treasury bond yield (Q2 2024 - Q2 2025)	Beta ( $\beta$ )	Market Return (Rm)	Market Risk Premium (Rm - Rf)	CAPM ROE (K)	ECAPM ROE (K)
Atmos Energy Corporation	ATO	4.10%	0.75	12.22%	8.12%	10.21%	10.71%
NiSource Inc.	NI	4.10%	0.81	12.22%	8.12%	10.65%	11.04%
Northwest Natural Gas Company	NWN	4.10%	0.70	12.22%	8.12%	9.80%	10.40%
ONE Gas, Inc.	OGS	4.10%	0.78	12.22%	8.12%	10.45%	10.90%
Spire, Inc.	SR	4.10%	0.77	12.22%	8.12%	10.35%	10.82%
Mean						10.29%	10.77%
Median						10.35%	10.82%

Notes:

[1] Blue Chip Financial Forecasts, Vol. 43, No. 2, February 1, 2024, at 2

[2] Bloomberg Professional

[3] Market Return

[4] Equals [3]-[1]

[5] Equals [1] + [2] x [4]

[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

**CAPITAL ASSET PRICING MODEL**  
**LONG-TERM PROJECTED RISK-FREE RATE AND BLOOMBERG BETA**

$$K = R_f + \beta (R_m - R_f)$$

$$K = R_f + 0.25 \times (R_m - R_f) + 0.75 \times \beta \times (R_m - R_f)$$

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Projected 30-year U.S. Treasury bond yield (2025 - 2029)	Beta ( $\beta$ )	Market Return (Rm)	Market Risk Premium (Rm - Rf)	CAPM ROE (K)	ECAPM ROE (K)
Atmos Energy Corporation	ATO	4.10%	0.75	12.22%	8.12%	10.21%	10.71%
NiSource Inc.	NI	4.10%	0.81	12.22%	8.12%	10.65%	11.04%
Northwest Natural Gas Company	NWN	4.10%	0.70	12.22%	8.12%	9.80%	10.40%
ONE Gas, Inc.	OGS	4.10%	0.78	12.22%	8.12%	10.45%	10.90%
Spire, Inc.	SR	4.10%	0.77	12.22%	8.12%	10.35%	10.82%
Mean						10.29%	10.77%
Median						10.35%	10.82%

Notes:

[1] Blue Chip Financial Forecasts, Vol. 42, No. 12, December 1, 2023, at 14

[2] Bloomberg Professional

[3] Market Return

[4] Equals [3]-[1]

[5] Equals [1] + [2] x [4]

[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

**CAPITAL ASSET PRICING MODEL**  
**CURRENT RISK FREE RATE AND LONG-TERM VALUE LINE BETA**

$$K = R_f + \beta (R_m - R_f)$$

$$K = R_f + 0.25 \times (R_m - R_f) + 0.75 \times \beta \times (R_m - R_f)$$

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Current 30-day average of 30-year U.S. Treasury bond yield	Beta ( $\beta$ )	Market Return (Rm)	Market Risk Premium (Rm - Rf)	CAPM ROE (K)	ECAPM ROE (K)
Atmos Energy Corporation	ATO	4.19%	0.75	12.22%	8.03%	10.21%	10.71%
NiSource Inc.	NI	4.19%	0.76	12.22%	8.03%	10.26%	10.75%
Northwest Natural Gas Company	NWN	4.19%	0.71	12.22%	8.03%	9.88%	10.47%
ONE Gas, Inc.	OGS	4.19%	0.74	12.22%	8.03%	10.11%	10.64%
Spire, Inc.	SR	4.19%	0.74	12.22%	8.03%	10.14%	10.66%
Mean						10.12%	10.64%
Median						10.14%	10.66%

Notes:

[1] Bloomberg Professional 30-day average as of January 31, 2023

[2] Source: LT Beta

[3] Market Return

[4] Equals [3]-[1]

[5] Equals [1] + [2] x [4]

[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])



**CAPITAL ASSET PRICING MODEL**  
**NEAR-TERM PROJECTED RISK FREE RATE AND LONG-TERM VALUE LINE BETA**

$$K = R_f + \beta (R_m - R_f)$$

$$K = R_f + 0.25 \times (R_m - R_f) + 0.75 \times \beta \times (R_m - R_f)$$

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Near-term projected 30-year U.S. Treasury bond yield (Q2 2024 - Q2 2025)	Beta ( $\beta$ )	Market Return ( $R_m$ )	Market Risk Premium ( $R_m - R_f$ )	CAPM ROE (K)	ECAPM ROE (K)
Atmos Energy Corporation	ATO	4.10%	0.75	12.22%	8.12%	10.19%	10.70%
NiSource Inc.	NI	4.10%	0.76	12.22%	8.12%	10.23%	10.73%
Northwest Natural Gas Company	NWN	4.10%	0.71	12.22%	8.12%	9.86%	10.45%
ONE Gas, Inc.	OGS	4.10%	0.74	12.22%	8.12%	10.09%	10.62%
Spire, Inc.	SR	4.10%	0.74	12.22%	8.12%	10.12%	10.64%
Mean						10.10%	10.63%
Median						10.12%	10.64%

Notes:

[1] Blue Chip Financial Forecasts, Vol. 43, No. 2, February 1, 2024, at 2

[2] Source: LT Beta

[3] Market Return

[4] Equals [3]-[1]

[5] Equals [1] + [2] x [4]

[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

**CAPITAL ASSET PRICING MODEL**  
**LONG-TERM PROJECTED RISK FREE RATE AND LONG-TERM VALUE LINE BETA**

$$K = R_f + \beta (R_m - R_f)$$

$$K = R_f + 0.25 \times (R_m - R_f) + 0.75 \times \beta \times (R_m - R_f)$$

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Projected 30-year U.S. Treasury bond yield (2025 - 2029)	Beta ( $\beta$ )	Market Return (Rm)	Market Risk Premium (Rm - Rf)	CAPM ROE (K)	ECAPM ROE (K)
Atmos Energy Corporation	ATO	4.10%	0.75	12.22%	8.12%	10.19%	10.70%
NiSource Inc.	NI	4.10%	0.76	12.22%	8.12%	10.23%	10.73%
Northwest Natural Gas Company	NWN	4.10%	0.71	12.22%	8.12%	9.86%	10.45%
ONE Gas, Inc.	OGS	4.10%	0.74	12.22%	8.12%	10.09%	10.62%
Spire, Inc.	SR	4.10%	0.74	12.22%	8.12%	10.12%	10.64%
Mean						10.10%	10.63%
Median						10.12%	10.64%

Notes:

[1] Blue Chip Financial Forecasts, Vol. 42, No. 12, December 1, 2023, at 14

[2] Source: LT Beta

[3] Market Return

[4] Equals [3]-[1]

[5] Equals [1] + [2] x [4]

[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])