

**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]
		Current 30-day average of 30-year Treasury bond yield	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm - Rf)	CAPM ROE (K)	ECAPM ROE (K)
Company	Ticker						
Atmos Energy Corporation	ATO	3.89%	0.85	12.68%	8.79%	11.36%	11.69%
NiSource Inc.	NI	3.89%	0.85	12.68%	8.79%	11.36%	11.69%
Northwest Natural Gas Company	NWN	3.89%	0.80	12.68%	8.79%	10.92%	11.36%
ONE Gas, Inc.	OGS	3.89%	0.80	12.68%	8.79%	10.92%	11.36%
Spire, Inc.	SR	3.89%	0.80	12.68%	8.79%	10.92%	11.36%
Mean						11.10%	11.49%
Median						10.92%	11.36%

Notes:

[1] Source: Bloomberg Professional 30-day average as of June 30, 2023

[2] Source: Value Line

[3] Source: 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 (Q4 2023 - Q4 2024)	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm - Rf)	CAPM ROE (K)	ECAPM ROE (K)
Atmos Energy Corporation	ATO	3.84%	0.85	12.68%	8.84%	11.36%	11.69%
NiSource Inc.	NI	3.84%	0.85	12.68%	8.84%	11.36%	11.69%
Northwest Natural Gas Company	NWN	3.84%	0.80	12.68%	8.84%	10.91%	11.36%
ONE Gas, Inc.	OGS	3.84%	0.80	12.68%	8.84%	10.91%	11.36%
Spire, Inc.	SR	3.84%	0.80	12.68%	8.84%	10.91%	11.36%
Mean						11.09%	11.49%
Median						10.91%	11.36%

Notes:

[1] Source: *Blue Chip Financial Forecasts*, Vol. 42, No. 7, June 30, 2023, at 2

[2] Source: Value Line

[3] Source: 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 (β)	Market Return (Rm)	Market Risk Premium (Rm - Rf)	CAPM ROE (K)	ECAPM ROE (K)
Atmos Energy Corporation	ATO	3.80%	0.85	12.68%	8.88%	11.35%	11.68%
NiSource Inc.	NI	3.80%	0.85	12.68%	8.88%	11.35%	11.68%
Northwest Natural Gas Company	NWN	3.80%	0.80	12.68%	8.88%	10.91%	11.35%
ONE Gas, Inc.	OGS	3.80%	0.80	12.68%	8.88%	10.91%	11.35%
Spire, Inc.	SR	3.80%	0.80	12.68%	8.88%	10.91%	11.35%
Mean						11.08%	11.48%
Median						10.91%	11.35%

Notes:

[1] Source: *Blue Chip Financial Forecasts*, Vol. 42, No. 6, June 1, 2023, at 14

[2] Source: Value Line

[3] Source: 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 Treasury bond yield	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm - Rf)	CAPM ROE (K)	ECAPM ROE (K)
Atmos Energy Corporation	ATO	3.89%	0.75	12.68%	8.79%	10.50%	11.05%
NiSource Inc.	NI	3.89%	0.81	12.68%	8.79%	11.05%	11.46%
Northwest Natural Gas Company	NWN	3.89%	0.70	12.68%	8.79%	10.03%	10.69%
ONE Gas, Inc.	OGS	3.89%	0.78	12.68%	8.79%	10.76%	11.24%
Spire, Inc.	SR	3.89%	0.76	12.68%	8.79%	10.57%	11.10%
Mean						10.58%	11.11%
Median						10.57%	11.10%

Notes:

[1] Source: Bloomberg Professional 30-day average as of June 30, 2023

[2] Source: Bloomberg Professional

[3] Source: 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 (Q4 2023 - Q4 2024)	Beta (β)	Market Return (R_m)	Market Risk Premium ($R_m - R_f$)	CAPM ROE (K)	ECAPM ROE (K)
Atmos Energy Corporation	ATO	3.84%	0.75	12.68%	8.84%	10.49%	11.04%
NiSource Inc.	NI	3.84%	0.81	12.68%	8.84%	11.05%	11.45%
Northwest Natural Gas Company	NWN	3.84%	0.70	12.68%	8.84%	10.01%	10.68%
ONE Gas, Inc.	OGS	3.84%	0.78	12.68%	8.84%	10.74%	11.23%
Spire, Inc.	SR	3.84%	0.76	12.68%	8.84%	10.56%	11.09%
Mean						10.57%	11.10%
Median						10.56%	11.09%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 42, No. 7, June 30, 2023, at 2

[2] Source: Bloomberg Professional

[3] Source: 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 (β)	Market Return (Rm)	Market Risk Premium (Rm - Rf)	CAPM ROE (K)	ECAPM ROE (K)
Atmos Energy Corporation	ATO	3.80%	0.75	12.68%	8.88%	10.48%	11.03%
NiSource Inc.	NI	3.80%	0.81	12.68%	8.88%	11.04%	11.45%
Northwest Natural Gas Company	NWN	3.80%	0.70	12.68%	8.88%	10.00%	10.67%
ONE Gas, Inc.	OGS	3.80%	0.78	12.68%	8.88%	10.74%	11.22%
Spire, Inc.	SR	3.80%	0.76	12.68%	8.88%	10.55%	11.08%
Mean						10.56%	11.09%
Median						10.55%	11.08%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 42, No. 6, June 1, 2023, at 14

[2] Source: Bloomberg Professional

[3] Source: Market Return

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**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 Treasury bond yield	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm - Rf)	CAPM ROE (K)	ECAPM ROE (K)
Atmos Energy Corporation	ATO	3.89%	0.74	12.68%	8.79%	10.40%	10.97%
NiSource Inc.	NI	3.89%	0.74	12.68%	8.79%	10.37%	10.95%
Northwest Natural Gas Company	NWN	3.89%	0.70	12.68%	8.79%	10.04%	10.70%
ONE Gas, Inc.	OGS	3.89%	0.73	12.68%	8.79%	10.30%	10.89%
Spire, Inc.	SR	3.89%	0.73	12.68%	8.79%	10.31%	10.90%
Mean						10.28%	10.88%
Median						10.31%	10.90%

Notes:

[1] Source: Bloomberg Professional 30-day average as of June 30, 2023

[2] Source: LT Beta

[3] Source: Market Return

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[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 (Q4 2023 - Q4 2024)	Beta (β)	Market Return (R_m)	Market Risk Premium ($R_m - R_f$)	CAPM ROE (K)	ECAPM ROE (K)
Atmos Energy Corporation	ATO	3.84%	0.74	12.68%	8.84%	10.38%	10.96%
NiSource Inc.	NI	3.84%	0.74	12.68%	8.84%	10.36%	10.94%
Northwest Natural Gas Company	NWN	3.84%	0.70	12.68%	8.84%	10.03%	10.69%
ONE Gas, Inc.	OGS	3.84%	0.73	12.68%	8.84%	10.28%	10.88%
Spire, Inc.	SR	3.84%	0.73	12.68%	8.84%	10.29%	10.89%
Mean						10.27%	10.87%
Median						10.29%	10.89%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 42, No. 7, June 30, 2023, at 2

[2] Source: LT Beta

[3] Source: Market Return

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[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

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

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Projected 30-year U.S. Treasury bond yield (2025 - 2029)	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm - Rf)	CAPM ROE (K)	ECAPM ROE (K)
Atmos Energy Corporation	ATO	3.80%	0.74	12.68%	8.88%	10.37%	10.95%
NiSource Inc.	NI	3.80%	0.74	12.68%	8.88%	10.35%	10.93%
Northwest Natural Gas Company	NWN	3.80%	0.70	12.68%	8.88%	10.02%	10.68%
ONE Gas, Inc.	OGS	3.80%	0.73	12.68%	8.88%	10.27%	10.87%
Spire, Inc.	SR	3.80%	0.73	12.68%	8.88%	10.28%	10.88%
Mean						10.26%	10.86%
Median						10.28%	10.88%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 42, No. 6, June 1, 2023, at 14

[2] Source: LT Beta

[3] Source: Market Return

[4] Equals [3]-[1]

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