

**BEFORE THE WASHINGTON
UTILITIES & TRANSPORTATION COMMISSION**

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION,

Complainant,

v.

PUGET SOUND ENERGY, INC.

Respondent.

DOCKETS UE-240004 & UG-240005 (Consolidated)

**CROSS-EXAMINATION EXHIBIT OF ANN E. BULKLEY
ON BEHALF OF THE
WASHINGTON STATE OFFICE OF THE ATTORNEY GENERAL
PUBLIC COUNSEL UNIT**

EXHIBIT AEB-__X

Capital Asset Pricing Model

October 28, 2024

**EXH. AEB-6
DOCKETS UE-240004/UG-240005
2024 PSE GENERAL RATE CASE
WITNESS: ANN E. BULKLEY**

**BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

**WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,**

Complainant,

v.

PUGET SOUND ENERGY,

Respondent.

Docket UE-240004

Docket UG-240005

**FIFTH EXHIBIT (NONCONFIDENTIAL) TO THE
PREFILED DIRECT TESTIMONY OF**

ANN E. BULKLEY

ON BEHALF OF PUGET SOUND ENERGY

FEBRUARY 15, 2024

CAPITAL ASSET PRICING MODEL -- CURRENT RISK-FREE RATE & VL 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 (β)	Market Return (Rm)	Market Risk Premium (Rm - Rf)	ROE (K)	ECAPM ROE (K)
NiSource Inc.	NI	4.77%	0.90	12.56%	7.78%	11.78%	11.97%
ALLETE, Inc.	ALE	4.77%	0.90	12.56%	7.78%	11.78%	11.97%
Alliant Energy Corporation	LNT	4.77%	0.85	12.56%	7.78%	11.39%	11.68%
Ameren Corporation	AEE	4.77%	0.85	12.56%	7.78%	11.39%	11.68%
American Electric Power Company, Inc.	AEP	4.77%	0.80	12.56%	7.78%	11.00%	11.39%
Avista Corporation	AVA	4.77%	0.90	12.56%	7.78%	11.78%	11.97%
Black Hills Corporation	BKH	4.77%	1.00	12.56%	7.78%	12.56%	12.56%
CMS Energy Corporation	CMS	4.77%	0.80	12.56%	7.78%	11.00%	11.39%
Duke Energy Corporation	DUK	4.77%	0.85	12.56%	7.78%	11.39%	11.68%
Entergy Corporation	ETR	4.77%	0.95	12.56%	7.78%	12.17%	12.27%
Evergy, Inc.	EVRG	4.77%	0.90	12.56%	7.78%	11.78%	11.97%
IDACORP, Inc.	IDA	4.77%	0.85	12.56%	7.78%	11.39%	11.68%
MGE Energy, Inc.	MGEE	4.77%	0.75	12.56%	7.78%	10.61%	11.10%
NextEra Energy, Inc.	NEE	4.77%	0.95	12.56%	7.78%	12.17%	12.27%
NorthWestern Corporation	NWE	4.77%	0.95	12.56%	7.78%	12.17%	12.27%
OGE Energy Corporation	OGE	4.77%	1.05	12.56%	7.78%	12.95%	12.85%
Pinnacle West Capital Corporation	PNW	4.77%	0.95	12.56%	7.78%	12.17%	12.27%
Portland General Electric Company	POR	4.77%	0.90	12.56%	7.78%	11.78%	11.97%
Southern Company	SO	4.77%	0.90	12.56%	7.78%	11.78%	11.97%
Wisconsin Energy Corporation	WEC	4.77%	0.80	12.56%	7.78%	11.00%	11.39%
Xcel Energy Inc.	XEL	4.77%	0.85	12.56%	7.78%	11.39%	11.68%
Mean						11.69%	11.90%
Median						11.78%	11.97%

Notes:

- [1] Source: Bloomberg Professional, as of November 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 & VL 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 (Q1 2024 - Q1 2025)	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm - Rf)	ROE (K)	ECAPM ROE (K)
NiSource Inc.	NI	4.48%	0.90	12.56%	8.08%	11.75%	11.95%
ALLETE, Inc.	ALE	4.48%	0.90	12.56%	8.08%	11.75%	11.95%
Alliant Energy Corporation	LNT	4.48%	0.85	12.56%	8.08%	11.35%	11.65%
Ameren Corporation	AEE	4.48%	0.85	12.56%	8.08%	11.35%	11.65%
American Electric Power Company, Inc.	AEP	4.48%	0.80	12.56%	8.08%	10.94%	11.35%
Avista Corporation	AVA	4.48%	0.90	12.56%	8.08%	11.75%	11.95%
Black Hills Corporation	BKH	4.48%	1.00	12.56%	8.08%	12.56%	12.56%
CMS Energy Corporation	CMS	4.48%	0.80	12.56%	8.08%	10.94%	11.35%
Duke Energy Corporation	DUK	4.48%	0.85	12.56%	8.08%	11.35%	11.65%
Entergy Corporation	ETR	4.48%	0.95	12.56%	8.08%	12.15%	12.25%
Evergy, Inc.	EVRG	4.48%	0.90	12.56%	8.08%	11.75%	11.95%
IDACORP, Inc.	IDA	4.48%	0.85	12.56%	8.08%	11.35%	11.65%
MGE Energy, Inc.	MGEE	4.48%	0.75	12.56%	8.08%	10.54%	11.04%
NextEra Energy, Inc.	NEE	4.48%	0.95	12.56%	8.08%	12.15%	12.25%
NorthWestern Corporation	NWE	4.48%	0.95	12.56%	8.08%	12.15%	12.25%
OGE Energy Corporation	OGE	4.48%	1.05	12.56%	8.08%	12.96%	12.86%
Pinnacle West Capital Corporation	PNW	4.48%	0.95	12.56%	8.08%	12.15%	12.25%
Portland General Electric Company	POR	4.48%	0.90	12.56%	8.08%	11.75%	11.95%
Southern Company	SO	4.48%	0.90	12.56%	8.08%	11.75%	11.95%
Wisconsin Energy Corporation	WEC	4.48%	0.80	12.56%	8.08%	10.94%	11.35%
Xcel Energy Inc.	XEL	4.48%	0.85	12.56%	8.08%	11.35%	11.65%
Mean						11.65%	11.88%
Median						11.75%	11.95%

Notes:

- [1] Source: Blue Chip Financial Forecasts, Vol. 42, No. 12, December 1, 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 & VL 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)	ROE (K)	ECAPM ROE (K)
NiSource Inc.	NI	4.10%	0.90	12.56%	8.46%	11.71%	11.92%
ALLETE, Inc.	ALE	4.10%	0.90	12.56%	8.46%	11.71%	11.92%
Alliant Energy Corporation	LNT	4.10%	0.85	12.56%	8.46%	11.29%	11.61%
Ameren Corporation	AEE	4.10%	0.85	12.56%	8.46%	11.29%	11.61%
American Electric Power Company, Inc.	AEP	4.10%	0.80	12.56%	8.46%	10.87%	11.29%
Avista Corporation	AVA	4.10%	0.90	12.56%	8.46%	11.71%	11.92%
Black Hills Corporation	BKH	4.10%	1.00	12.56%	8.46%	12.56%	12.56%
CMS Energy Corporation	CMS	4.10%	0.80	12.56%	8.46%	10.87%	11.29%
Duke Energy Corporation	DUK	4.10%	0.85	12.56%	8.46%	11.29%	11.61%
Entergy Corporation	ETR	4.10%	0.95	12.56%	8.46%	12.13%	12.24%
Evergy, Inc.	EVRG	4.10%	0.90	12.56%	8.46%	11.71%	11.92%
IDACORP, Inc.	IDA	4.10%	0.85	12.56%	8.46%	11.29%	11.61%
MGE Energy, Inc.	MGEE	4.10%	0.75	12.56%	8.46%	10.44%	10.97%
NextEra Energy, Inc.	NEE	4.10%	0.95	12.56%	8.46%	12.13%	12.24%
NorthWestern Corporation	NWE	4.10%	0.95	12.56%	8.46%	12.13%	12.24%
OGE Energy Corporation	OGE	4.10%	1.05	12.56%	8.46%	12.98%	12.87%
Pinnacle West Capital Corporation	PNW	4.10%	0.95	12.56%	8.46%	12.13%	12.24%
Portland General Electric Company	POR	4.10%	0.90	12.56%	8.46%	11.71%	11.92%
Southern Company	SO	4.10%	0.90	12.56%	8.46%	11.71%	11.92%
Wisconsin Energy Corporation	WEC	4.10%	0.80	12.56%	8.46%	10.87%	11.29%
Xcel Energy Inc.	XEL	4.10%	0.85	12.56%	8.46%	11.29%	11.61%
Mean						11.61%	11.85%
Median						11.71%	11.92%

Notes:

- [1] Source: Blue Chip Financial Forecasts, Vol. 42, No. 12, December 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 & 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 (β)	Market Return (Rm)	Market Risk Premium (Rm - Rf)	ROE (K)	ECAPM ROE (K)
NiSource Inc.	NI	4.77%	0.81	12.56%	7.78%	11.10%	11.46%
ALLETE, Inc.	ALE	4.77%	0.83	12.56%	7.78%	11.20%	11.54%
Alliant Energy Corporation	LNT	4.77%	0.79	12.56%	7.78%	10.92%	11.33%
Ameren Corporation	AEE	4.77%	0.75	12.56%	7.78%	10.61%	11.10%
American Electric Power Company, Inc.	AEP	4.77%	0.76	12.56%	7.78%	10.65%	11.13%
Avista Corporation	AVA	4.77%	0.76	12.56%	7.78%	10.70%	11.16%
Black Hills Corporation	BKH	4.77%	0.90	12.56%	7.78%	11.79%	11.98%
CMS Energy Corporation	CMS	4.77%	0.75	12.56%	7.78%	10.58%	11.08%
Duke Energy Corporation	DUK	4.77%	0.72	12.56%	7.78%	10.34%	10.89%
Entergy Corporation	ETR	4.77%	0.86	12.56%	7.78%	11.46%	11.73%
Evergy, Inc.	EVRG	4.77%	0.78	12.56%	7.78%	10.85%	11.28%
IDACORP, Inc.	IDA	4.77%	0.80	12.56%	7.78%	10.99%	11.38%
MGE Energy, Inc.	MGEE	4.77%	0.68	12.56%	7.78%	10.08%	10.70%
NextEra Energy, Inc.	NEE	4.77%	0.81	12.56%	7.78%	11.10%	11.47%
NorthWestern Corporation	NWE	4.77%	0.87	12.56%	7.78%	11.52%	11.78%
OGE Energy Corporation	OGE	4.77%	0.92	12.56%	7.78%	11.90%	12.06%
Pinnacle West Capital Corporation	PNW	4.77%	0.82	12.56%	7.78%	11.15%	11.50%
Portland General Electric Company	POR	4.77%	0.79	12.56%	7.78%	10.92%	11.33%
Southern Company	SO	4.77%	0.77	12.56%	7.78%	10.80%	11.24%
Wisconsin Energy Corporation	WEC	4.77%	0.73	12.56%	7.78%	10.47%	10.99%
Xcel Energy Inc.	XEL	4.77%	0.74	12.56%	7.78%	10.51%	11.02%
Mean						10.93%	11.34%
Median						10.92%	11.33%

Notes:

- [1] Source: Bloomberg Professional, as of November 30, 2023
- [2] Source: Bloomberg Professional, based on 10-year weekly returns
- [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 & 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 (Q1 2024 - Q1 2025)	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm - Rf)	ROE (K)	ECAPM ROE (K)
NiSource Inc.	NI	4.48%	0.81	12.56%	8.08%	11.04%	11.42%
ALLETE, Inc.	ALE	4.48%	0.83	12.56%	8.08%	11.15%	11.50%
Alliant Energy Corporation	LNT	4.48%	0.79	12.56%	8.08%	10.85%	11.28%
Ameren Corporation	AEE	4.48%	0.75	12.56%	8.08%	10.54%	11.04%
American Electric Power Company, Inc.	AEP	4.48%	0.76	12.56%	8.08%	10.58%	11.08%
Avista Corporation	AVA	4.48%	0.76	12.56%	8.08%	10.63%	11.11%
Black Hills Corporation	BKH	4.48%	0.90	12.56%	8.08%	11.76%	11.96%
CMS Energy Corporation	CMS	4.48%	0.75	12.56%	8.08%	10.51%	11.02%
Duke Energy Corporation	DUK	4.48%	0.72	12.56%	8.08%	10.26%	10.83%
Entergy Corporation	ETR	4.48%	0.86	12.56%	8.08%	11.42%	11.70%
Evergy, Inc.	EVRG	4.48%	0.78	12.56%	8.08%	10.78%	11.23%
IDACORP, Inc.	IDA	4.48%	0.80	12.56%	8.08%	10.93%	11.34%
MGE Energy, Inc.	MGEE	4.48%	0.68	12.56%	8.08%	9.99%	10.63%
NextEra Energy, Inc.	NEE	4.48%	0.81	12.56%	8.08%	11.05%	11.42%
NorthWestern Corporation	NWE	4.48%	0.87	12.56%	8.08%	11.48%	11.75%
OGE Energy Corporation	OGE	4.48%	0.92	12.56%	8.08%	11.87%	12.04%
Pinnacle West Capital Corporation	PNW	4.48%	0.82	12.56%	8.08%	11.09%	11.46%
Portland General Electric Company	POR	4.48%	0.79	12.56%	8.08%	10.86%	11.28%
Southern Company	SO	4.48%	0.77	12.56%	8.08%	10.74%	11.19%
Wisconsin Energy Corporation	WEC	4.48%	0.73	12.56%	8.08%	10.39%	10.93%
Xcel Energy Inc.	XEL	4.48%	0.74	12.56%	8.08%	10.43%	10.96%
Mean						10.87%	11.29%
Median						10.85%	11.28%

Notes:

- [1] Source: Blue Chip Financial Forecasts, Vol. 42, No. 12, December 1, 2023, at 2
- [2] Source: Bloomberg Professional, based on 10-year weekly returns
- [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 & 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)	ROE (K)	ECAPM ROE (K)
NiSource Inc.	NI	4.10%	0.81	12.56%	8.46%	10.97%	11.37%
ALLETE, Inc.	ALE	4.10%	0.83	12.56%	8.46%	11.08%	11.45%
Alliant Energy Corporation	LNT	4.10%	0.79	12.56%	8.46%	10.77%	11.22%
Ameren Corporation	AEE	4.10%	0.75	12.56%	8.46%	10.44%	10.97%
American Electric Power Company, Inc.	AEP	4.10%	0.76	12.56%	8.46%	10.49%	11.01%
Avista Corporation	AVA	4.10%	0.76	12.56%	8.46%	10.54%	11.04%
Black Hills Corporation	BKH	4.10%	0.90	12.56%	8.46%	11.72%	11.93%
CMS Energy Corporation	CMS	4.10%	0.75	12.56%	8.46%	10.41%	10.95%
Duke Energy Corporation	DUK	4.10%	0.72	12.56%	8.46%	10.15%	10.75%
Entergy Corporation	ETR	4.10%	0.86	12.56%	8.46%	11.36%	11.66%
Evergy, Inc.	EVRG	4.10%	0.78	12.56%	8.46%	10.70%	11.16%
IDACORP, Inc.	IDA	4.10%	0.80	12.56%	8.46%	10.85%	11.28%
MGE Energy, Inc.	MGEE	4.10%	0.68	12.56%	8.46%	9.87%	10.54%
NextEra Energy, Inc.	NEE	4.10%	0.81	12.56%	8.46%	10.98%	11.37%
NorthWestern Corporation	NWE	4.10%	0.87	12.56%	8.46%	11.43%	11.71%
OGE Energy Corporation	OGE	4.10%	0.92	12.56%	8.46%	11.84%	12.02%
Pinnacle West Capital Corporation	PNW	4.10%	0.82	12.56%	8.46%	11.02%	11.41%
Portland General Electric Company	POR	4.10%	0.79	12.56%	8.46%	10.78%	11.22%
Southern Company	SO	4.10%	0.77	12.56%	8.46%	10.65%	11.13%
Wisconsin Energy Corporation	WEC	4.10%	0.73	12.56%	8.46%	10.29%	10.85%
Xcel Energy Inc.	XEL	4.10%	0.74	12.56%	8.46%	10.33%	10.89%
Mean						10.79%	11.23%
Median						10.77%	11.22%

Notes:

- [1] Source: Blue Chip Financial Forecasts, Vol. 42, No. 12, December 1, 2023, at 14
- [2] Source: Bloomberg Professional, based on 10-year weekly returns
- [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 & VALUE LINE LT AVERAGE 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 (β)	Market Return (Rm)	Market Risk Premium (Rm - Rf)	ROE (K)	ECAPM ROE (K)
NiSource Inc.	NI	4.77%	0.74	12.56%	7.78%	10.51%	11.02%
ALLETE, Inc.	ALE	4.77%	0.79	12.56%	7.78%	10.88%	11.30%
Alliant Energy Corporation	LNT	4.77%	0.75	12.56%	7.78%	10.61%	11.10%
Ameren Corporation	AEE	4.77%	0.73	12.56%	7.78%	10.42%	10.95%
American Electric Power Company, Inc.	AEP	4.77%	0.68	12.56%	7.78%	10.03%	10.66%
Avista Corporation	AVA	4.77%	0.79	12.56%	7.78%	10.88%	11.30%
Black Hills Corporation	BKH	4.77%	0.89	12.56%	7.78%	11.70%	11.91%
CMS Energy Corporation	CMS	4.77%	0.69	12.56%	7.78%	10.14%	10.75%
Duke Energy Corporation	DUK	4.77%	0.67	12.56%	7.78%	9.95%	10.60%
Entergy Corporation	ETR	4.77%	0.75	12.56%	7.78%	10.57%	11.07%
Evergy, Inc.	EVRG	4.77%	0.95	12.56%	7.78%	12.17%	12.27%
IDACORP, Inc.	IDA	4.77%	0.73	12.56%	7.78%	10.46%	10.98%
MGE Energy, Inc.	MGEE	4.77%	0.69	12.56%	7.78%	10.11%	10.72%
NextEra Energy, Inc.	NEE	4.77%	0.73	12.56%	7.78%	10.46%	10.98%
NorthWestern Corporation	NWE	4.77%	0.75	12.56%	7.78%	10.57%	11.07%
OGE Energy Corporation	OGE	4.77%	0.93	12.56%	7.78%	12.01%	12.15%
Pinnacle West Capital Corporation	PNW	4.77%	0.74	12.56%	7.78%	10.49%	11.01%
Portland General Electric Company	POR	4.77%	0.75	12.56%	7.78%	10.61%	11.10%
Southern Company	SO	4.77%	0.66	12.56%	7.78%	9.87%	10.54%
Wisconsin Energy Corporation	WEC	4.77%	0.66	12.56%	7.78%	9.91%	10.57%
Xcel Energy Inc.	XEL	4.77%	0.66	12.56%	7.78%	9.87%	10.54%
Mean						10.58%	11.08%
Median						10.49%	11.01%

Notes:

[1] Source: Bloomberg Professional, as of November 30, 2023

[2] Source: LT Beta

[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 & VALUE LINE LT AVERAGE 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 (Q1 2024 - Q1 2025)	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm - Rf)	ROE (K)	ECAPM ROE (K)
NiSource Inc.	NI	4.48%	0.74	12.56%	8.08%	10.44%	10.97%
ALLETE, Inc.	ALE	4.48%	0.79	12.56%	8.08%	10.82%	11.25%
Alliant Energy Corporation	LNT	4.48%	0.75	12.56%	8.08%	10.54%	11.04%
Ameren Corporation	AEE	4.48%	0.73	12.56%	8.08%	10.34%	10.89%
American Electric Power Company, Inc.	AEP	4.48%	0.68	12.56%	8.08%	9.93%	10.59%
Avista Corporation	AVA	4.48%	0.79	12.56%	8.08%	10.82%	11.25%
Black Hills Corporation	BKH	4.48%	0.89	12.56%	8.08%	11.67%	11.89%
CMS Energy Corporation	CMS	4.48%	0.69	12.56%	8.08%	10.05%	10.68%
Duke Energy Corporation	DUK	4.48%	0.67	12.56%	8.08%	9.85%	10.53%
Entergy Corporation	ETR	4.48%	0.75	12.56%	8.08%	10.50%	11.01%
Evergy, Inc.	EVRG	4.48%	0.95	12.56%	8.08%	12.15%	12.25%
IDACORP, Inc.	IDA	4.48%	0.73	12.56%	8.08%	10.38%	10.92%
MGE Energy, Inc.	MGEE	4.48%	0.69	12.56%	8.08%	10.01%	10.65%
NextEra Energy, Inc.	NEE	4.48%	0.73	12.56%	8.08%	10.38%	10.92%
NorthWestern Corporation	NWE	4.48%	0.75	12.56%	8.08%	10.50%	11.01%
OGE Energy Corporation	OGE	4.48%	0.93	12.56%	8.08%	11.99%	12.13%
Pinnacle West Capital Corporation	PNW	4.48%	0.74	12.56%	8.08%	10.42%	10.95%
Portland General Electric Company	POR	4.48%	0.75	12.56%	8.08%	10.54%	11.04%
Southern Company	SO	4.48%	0.66	12.56%	8.08%	9.77%	10.47%
Wisconsin Energy Corporation	WEC	4.48%	0.66	12.56%	8.08%	9.81%	10.50%
Xcel Energy Inc.	XEL	4.48%	0.66	12.56%	8.08%	9.77%	10.47%
Mean						10.51%	11.02%
Median						10.42%	10.95%

Notes:

- [1] Source: Blue Chip Financial Forecasts, Vol. 42, No. 12, December 1, 2023, at 2
- [2] Source: LT Beta
- [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 & VALUE LINE LT 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)	ROE (K)	ECAPM ROE (K)
NiSource Inc.	NI	4.10%	0.74	12.56%	8.46%	10.34%	10.89%
ALLETE, Inc.	ALE	4.10%	0.79	12.56%	8.46%	10.74%	11.19%
Alliant Energy Corporation	LNT	4.10%	0.75	12.56%	8.46%	10.44%	10.97%
Ameren Corporation	AEE	4.10%	0.73	12.56%	8.46%	10.23%	10.81%
American Electric Power Company, Inc.	AEP	4.10%	0.68	12.56%	8.46%	9.81%	10.50%
Avista Corporation	AVA	4.10%	0.79	12.56%	8.46%	10.74%	11.19%
Black Hills Corporation	BKH	4.10%	0.89	12.56%	8.46%	11.63%	11.86%
CMS Energy Corporation	CMS	4.10%	0.69	12.56%	8.46%	9.94%	10.59%
Duke Energy Corporation	DUK	4.10%	0.67	12.56%	8.46%	9.72%	10.43%
Entergy Corporation	ETR	4.10%	0.75	12.56%	8.46%	10.40%	10.94%
Evergy, Inc.	EVRG	4.10%	0.95	12.56%	8.46%	12.13%	12.24%
IDACORP, Inc.	IDA	4.10%	0.73	12.56%	8.46%	10.27%	10.84%
MGE Energy, Inc.	MGEE	4.10%	0.69	12.56%	8.46%	9.89%	10.56%
NextEra Energy, Inc.	NEE	4.10%	0.73	12.56%	8.46%	10.27%	10.84%
NorthWestern Corporation	NWE	4.10%	0.75	12.56%	8.46%	10.40%	10.94%
OGE Energy Corporation	OGE	4.10%	0.93	12.56%	8.46%	11.97%	12.11%
Pinnacle West Capital Corporation	PNW	4.10%	0.74	12.56%	8.46%	10.32%	10.88%
Portland General Electric Company	POR	4.10%	0.75	12.56%	8.46%	10.44%	10.97%
Southern Company	SO	4.10%	0.66	12.56%	8.46%	9.64%	10.37%
Wisconsin Energy Corporation	WEC	4.10%	0.66	12.56%	8.46%	9.68%	10.40%
Xcel Energy Inc.	XEL	4.10%	0.66	12.56%	8.46%	9.64%	10.37%
Mean						10.41%	10.95%
Median						10.32%	10.88%

Notes:

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

[2] Source: LT Beta

[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])