

**EXH. CGP-AEB-TAS-4
DOCKETS UE-220066/UG-220067 et al.
2022 PSE GENERAL RATE CASE
WITNESS: CARA G. PETERMAN
ANN E. BULKLEY
TODD A. SHIPMAN**

**BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

**WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,**

Complainant,

v.

PUGET SOUND ENERGY,

Respondent.

**Docket UE-220066
Docket UG-220067**

In the Matter of the Petition of

PUGET SOUND ENERGY

**For an Order Authorizing Deferred
Accounting Treatment for Puget Sound
Energy's Share of Costs Associated
with the Tacoma LNG Facility**

Docket UG-210918

**THIRD EXHIBIT (NONCONFIDENTIAL) TO THE
JOINT TESTIMONY OF**

CARA G. PETERMAN, ANN E. BULKLEY AND TODD A. SHIPMAN

**ON BEHALF OF PUGET SOUND ENERGY IN SUPPORT OF THE
MULTIPARTY SETTLEMENT STIPULATION AND AGREEMENT
ON REVENUE REQUIREMENT AND ALL OTHER ISSUES EXCEPT
FOR TACOMA LNG AND PSE'S GREEN DIRECT PROGRAM**

AUGUST 26, 2022

CAPITAL ASSET PRICING MODEL -- CURRENT RISK-FREE RATE & VL BETA

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

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

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]
		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	3.16%	0.85	12.94%	9.78%	11.48%	11.84%
Alliant Energy Corporation	LNT	3.16%	0.80	12.94%	9.78%	10.99%	11.48%
Ameren Corporation	AEE	3.16%	0.80	12.94%	9.78%	10.99%	11.48%
Avista Corporation	AVA	3.16%	0.90	12.94%	9.78%	11.96%	12.21%
Black Hills Corporation	BKH	3.16%	0.95	12.94%	9.78%	12.45%	12.58%
CMS Energy Corporation	CMS	3.16%	0.75	12.94%	9.78%	10.50%	11.11%
Duke Energy Corporation	DUK	3.16%	0.85	12.94%	9.78%	11.48%	11.84%
MGE Energy, Inc.	MGEE	3.16%	0.70	12.94%	9.78%	10.01%	10.74%
NextEra Energy, Inc.	NEE	3.16%	0.90	12.94%	9.78%	11.96%	12.21%
NorthWestern Corporation	NWE	3.16%	0.95	12.94%	9.78%	12.45%	12.58%
Southern Company	SO	3.16%	0.90	12.94%	9.78%	11.96%	12.21%
Wisconsin Energy Corporation	WEC	3.16%	0.80	12.94%	9.78%	10.99%	11.48%
Xcel Energy Inc.	XEL	3.16%	0.80	12.94%	9.78%	10.99%	11.48%
Mean						11.40%	11.79%

Notes:

[1] Source: Bloomberg Professional, as of July 28, 2022

[2] Source: Value Line

[3] Source: Exh. AEB-18

[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

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

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

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]
		Near-term projected 30- year U.S. Treasury bond yield (Q4 2022 - Q4 2023)	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm - Rf)	ROE (K)	ECAPM ROE (K)
NiSource Inc.	NI	3.48%	0.85	12.94%	9.46%	11.52%	11.88%
Alliant Energy Corporation	LNT	3.48%	0.80	12.94%	9.46%	11.05%	11.52%
Ameren Corporation	AEE	3.48%	0.80	12.94%	9.46%	11.05%	11.52%
Avista Corporation	AVA	3.48%	0.90	12.94%	9.46%	12.00%	12.23%
Black Hills Corporation	BKH	3.48%	0.95	12.94%	9.46%	12.47%	12.59%
CMS Energy Corporation	CMS	3.48%	0.75	12.94%	9.46%	10.58%	11.17%
Duke Energy Corporation	DUK	3.48%	0.85	12.94%	9.46%	11.52%	11.88%
MGE Energy, Inc.	MGEE	3.48%	0.70	12.94%	9.46%	10.10%	10.81%
NextEra Energy, Inc.	NEE	3.48%	0.90	12.94%	9.46%	12.00%	12.23%
NorthWestern Corporation	NWE	3.48%	0.95	12.94%	9.46%	12.47%	12.59%
Southern Company	SO	3.48%	0.90	12.94%	9.46%	12.00%	12.23%
Wisconsin Energy Corporation	WEC	3.48%	0.80	12.94%	9.46%	11.05%	11.52%
Xcel Energy Inc.	XEL	3.48%	0.80	12.94%	9.46%	11.05%	11.52%
Mean						11.45%	11.82%

Notes:

[1] Blue Chip Financial Forecasts, Vol. 41, No. 8, August 2, 2022, at 2

[2] Source: Value Line

[3] Source: Exh. AEB-18

[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 (2024 - 2028)	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm - Rf)	ROE (K)	ECAPM ROE (K)
NiSource Inc.	NI	3.80%	0.85	12.94%	9.14%	11.57%	11.91%
Alliant Energy Corporation	LNT	3.80%	0.80	12.94%	9.14%	11.11%	11.57%
Ameren Corporation	AEE	3.80%	0.80	12.94%	9.14%	11.11%	11.57%
Avista Corporation	AVA	3.80%	0.90	12.94%	9.14%	12.03%	12.26%
Black Hills Corporation	BKH	3.80%	0.95	12.94%	9.14%	12.49%	12.60%
CMS Energy Corporation	CMS	3.80%	0.75	12.94%	9.14%	10.66%	11.23%
Duke Energy Corporation	DUK	3.80%	0.85	12.94%	9.14%	11.57%	11.91%
MGE Energy, Inc.	MGEE	3.80%	0.70	12.94%	9.14%	10.20%	10.89%
NextEra Energy, Inc.	NEE	3.80%	0.90	12.94%	9.14%	12.03%	12.26%
NorthWestern Corporation	NWE	3.80%	0.95	12.94%	9.14%	12.49%	12.60%
Southern Company	SO	3.80%	0.90	12.94%	9.14%	12.03%	12.26%
Wisconsin Energy Corporation	WEC	3.80%	0.80	12.94%	9.14%	11.11%	11.57%
Xcel Energy Inc.	XEL	3.80%	0.80	12.94%	9.14%	11.11%	11.57%
Mean						11.50%	11.86%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 41, No. 6, June 1, 2022, at 14

[2] Source: Value Line

[3] Source: Exh. AEB-18

[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	3.16%	0.82	12.94%	9.78%	11.23%	11.66%
Alliant Energy Corporation	LNT	3.16%	0.80	12.94%	9.78%	11.02%	11.50%
Ameren Corporation	AEE	3.16%	0.76	12.94%	9.78%	10.61%	11.20%
Avista Corporation	AVA	3.16%	0.75	12.94%	9.78%	10.53%	11.14%
Black Hills Corporation	BKH	3.16%	0.91	12.94%	9.78%	12.05%	12.27%
CMS Energy Corporation	CMS	3.16%	0.75	12.94%	9.78%	10.53%	11.14%
Duke Energy Corporation	DUK	3.16%	0.72	12.94%	9.78%	10.25%	10.92%
MGE Energy, Inc.	MGEE	3.16%	0.69	12.94%	9.78%	9.87%	10.64%
NextEra Energy, Inc.	NEE	3.16%	0.81	12.94%	9.78%	11.13%	11.58%
NorthWestern Corporation	NWE	3.16%	0.88	12.94%	9.78%	11.81%	12.10%
Southern Company	SO	3.16%	0.79	12.94%	9.78%	10.92%	11.43%
Wisconsin Energy Corporation	WEC	3.16%	0.74	12.94%	9.78%	10.39%	11.03%
Xcel Energy Inc.	XEL	3.16%	0.75	12.94%	9.78%	10.46%	11.08%
Mean						10.83%	11.36%

Notes:

[1] Source: Bloomberg Professional, as of July 28, 2022

[2] Source: Bloomberg Professional, based on 10-year weekly returns

[3] Source: Exh. AEB-18

[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

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

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

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]
		Near-term projected 30-year U.S. Treasury bond yield (Q4 2022 - Q4 2023)	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm - Rf)	ROE (K)	ECAPM ROE (K)
NiSource Inc.	NI	3.48%	0.82	12.94%	9.46%	11.29%	11.70%
Alliant Energy Corporation	LNT	3.48%	0.80	12.94%	9.46%	11.08%	11.55%
Ameren Corporation	AEE	3.48%	0.76	12.94%	9.46%	10.69%	11.25%
Avista Corporation	AVA	3.48%	0.75	12.94%	9.46%	10.61%	11.20%
Black Hills Corporation	BKH	3.48%	0.91	12.94%	9.46%	12.08%	12.30%
CMS Energy Corporation	CMS	3.48%	0.75	12.94%	9.46%	10.61%	11.20%
Duke Energy Corporation	DUK	3.48%	0.72	12.94%	9.46%	10.34%	10.99%
MGE Energy, Inc.	MGEE	3.48%	0.69	12.94%	9.46%	9.97%	10.72%
NextEra Energy, Inc.	NEE	3.48%	0.81	12.94%	9.46%	11.19%	11.63%
NorthWestern Corporation	NWE	3.48%	0.88	12.94%	9.46%	11.85%	12.12%
Southern Company	SO	3.48%	0.79	12.94%	9.46%	10.99%	11.47%
Wisconsin Energy Corporation	WEC	3.48%	0.74	12.94%	9.46%	10.48%	11.09%
Xcel Energy Inc.	XEL	3.48%	0.75	12.94%	9.46%	10.55%	11.15%
Mean						10.90%	11.41%

Notes:

[1] Blue Chip Financial Forecasts, Vol. 41, No. 8, August 2, 2022, at 2

[2] Source: Bloomberg Professional, based on 10-year weekly returns

[3] Source: Exh. AEB-18

[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

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

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

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]
		Projected 30-year U.S. Treasury bond yield (2024 - 2028)	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm - Rf)	ROE (K)	ECAPM ROE (K)
NiSource Inc.	NI	3.80%	0.82	12.94%	9.14%	11.34%	11.74%
Alliant Energy Corporation	LNT	3.80%	0.80	12.94%	9.14%	11.15%	11.60%
Ameren Corporation	AEE	3.80%	0.76	12.94%	9.14%	10.77%	11.31%
Avista Corporation	AVA	3.80%	0.75	12.94%	9.14%	10.69%	11.25%
Black Hills Corporation	BKH	3.80%	0.91	12.94%	9.14%	12.11%	12.32%
CMS Energy Corporation	CMS	3.80%	0.75	12.94%	9.14%	10.69%	11.26%
Duke Energy Corporation	DUK	3.80%	0.72	12.94%	9.14%	10.42%	11.05%
MGE Energy, Inc.	MGEE	3.80%	0.69	12.94%	9.14%	10.07%	10.79%
NextEra Energy, Inc.	NEE	3.80%	0.81	12.94%	9.14%	11.25%	11.67%
NorthWestern Corporation	NWE	3.80%	0.88	12.94%	9.14%	11.89%	12.15%
Southern Company	SO	3.80%	0.79	12.94%	9.14%	11.05%	11.52%
Wisconsin Energy Corporation	WEC	3.80%	0.74	12.94%	9.14%	10.56%	11.15%
Xcel Energy Inc.	XEL	3.80%	0.75	12.94%	9.14%	10.63%	11.21%
Mean						10.97%	11.46%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 41, No. 6, June 1, 2022, at 14

[2] Source: Bloomberg Professional, based on 10-year weekly returns

[3] Source: Exh. AEB-18

[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	3.16%	0.72	12.94%	9.78%	10.22%	10.90%
Alliant Energy Corporation	LNT	3.16%	0.74	12.94%	9.78%	10.39%	11.03%
Ameren Corporation	AEE	3.16%	0.71	12.94%	9.78%	10.12%	10.82%
Avista Corporation	AVA	3.16%	0.77	12.94%	9.78%	10.71%	11.27%
Black Hills Corporation	BKH	3.16%	0.88	12.94%	9.78%	11.80%	12.09%
CMS Energy Corporation	CMS	3.16%	0.68	12.94%	9.78%	9.79%	10.58%
Duke Energy Corporation	DUK	3.16%	0.64	12.94%	9.78%	9.46%	10.33%
MGE Energy, Inc.	MGEE	3.16%	0.68	12.94%	9.78%	9.84%	10.62%
NextEra Energy, Inc.	NEE	3.16%	0.71	12.94%	9.78%	10.06%	10.78%
NorthWestern Corporation	NWE	3.16%	0.73	12.94%	9.78%	10.28%	10.95%
Southern Company	SO	3.16%	0.63	12.94%	9.78%	9.30%	10.21%
Wisconsin Energy Corporation	WEC	3.16%	0.64	12.94%	9.78%	9.46%	10.33%
Xcel Energy Inc.	XEL	3.16%	0.64	12.94%	9.78%	9.41%	10.29%
Mean						10.07%	10.78%

Notes:

[1] Source: Bloomberg Professional, as of July 28, 2022

[2] Source: Exh. AEB-17

[3] Source: Exh. AEB-18

[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 (Q4 2022 - Q4 2023)	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm - Rf)	ROE (K)	ECAPM ROE (K)
NiSource Inc.	NI	3.48%	0.72	12.94%	9.46%	10.31%	10.97%
Alliant Energy Corporation	LNT	3.48%	0.74	12.94%	9.46%	10.47%	11.09%
Ameren Corporation	AEE	3.48%	0.71	12.94%	9.46%	10.21%	10.89%
Avista Corporation	AVA	3.48%	0.77	12.94%	9.46%	10.79%	11.33%
Black Hills Corporation	BKH	3.48%	0.88	12.94%	9.46%	11.84%	12.11%
CMS Energy Corporation	CMS	3.48%	0.68	12.94%	9.46%	9.89%	10.66%
Duke Energy Corporation	DUK	3.48%	0.64	12.94%	9.46%	9.58%	10.42%
MGE Energy, Inc.	MGEE	3.48%	0.68	12.94%	9.46%	9.95%	10.70%
NextEra Energy, Inc.	NEE	3.48%	0.71	12.94%	9.46%	10.16%	10.85%
NorthWestern Corporation	NWE	3.48%	0.73	12.94%	9.46%	10.37%	11.01%
Southern Company	SO	3.48%	0.63	12.94%	9.46%	9.42%	10.30%
Wisconsin Energy Corporation	WEC	3.48%	0.64	12.94%	9.46%	9.58%	10.42%
Xcel Energy Inc.	XEL	3.48%	0.64	12.94%	9.46%	9.53%	10.38%
Mean						10.16%	10.86%

Notes:

[1] Blue Chip Financial Forecasts, Vol. 41, No. 8, August 2, 2022, at 2

[2] Source: Exh. AEB-17

[3] Source: Exh. AEB-18

[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 (2024 - 2028)	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm - Rf)	ROE (K)	ECAPM ROE (K)
NiSource Inc.	NI	3.80%	0.72	12.94%	9.14%	10.40%	11.03%
Alliant Energy Corporation	LNT	3.80%	0.74	12.94%	9.14%	10.56%	11.15%
Ameren Corporation	AEE	3.80%	0.71	12.94%	9.14%	10.30%	10.96%
Avista Corporation	AVA	3.80%	0.77	12.94%	9.14%	10.86%	11.38%
Black Hills Corporation	BKH	3.80%	0.88	12.94%	9.14%	11.88%	12.14%
CMS Energy Corporation	CMS	3.80%	0.68	12.94%	9.14%	10.00%	10.73%
Duke Energy Corporation	DUK	3.80%	0.64	12.94%	9.14%	9.69%	10.50%
MGE Energy, Inc.	MGEE	3.80%	0.68	12.94%	9.14%	10.05%	10.77%
NextEra Energy, Inc.	NEE	3.80%	0.71	12.94%	9.14%	10.25%	10.92%
NorthWestern Corporation	NWE	3.80%	0.73	12.94%	9.14%	10.45%	11.08%
Southern Company	SO	3.80%	0.63	12.94%	9.14%	9.54%	10.39%
Wisconsin Energy Corporation	WEC	3.80%	0.64	12.94%	9.14%	9.69%	10.50%
Xcel Energy Inc.	XEL	3.80%	0.64	12.94%	9.14%	9.64%	10.47%
Mean						10.25%	10.93%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 41, No. 6, June 1, 2022, at 14

[2] Source: Exh. AEB-17

[3] Source: Exh. AEB-18

[4] Equals [3] - [1]

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

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