

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

WASHINGTON UTILITIES AND  
TRANSPORTATION COMMISSION,

Complainant,

v.

PACIFICORP d/b/a PACIFIC POWER  
AND LIGHT COMPANY,

Respondent.

DOCKET UE-230172  
(*Consolidated*)

In the Matter of

ALLIANCE OF WESTERN ENERGY  
CONSUMERS'

Petition for Order Approving Deferral of  
Increased Fly Ash Revenues

DOCKET UE-210852  
(*Consolidated*)

**EXHIBIT LDK-4**  
**COST OF CAPITAL CALCULATIONS**

30-DAY CONSTANT GROWTH DCF -- PACIFIC POWER PROXY GROUP

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
Company	Ticker	Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	20-Year Monte Carlo Simulation	Value Line EPS Growth	Average Growth Rate	Monte Carlo ROE	Mean ROE	Value Line ROE
ALLETE, Inc.	ALE	\$2.71	\$56.16	4.82%	4.91%	1.21%	6.00%	3.60%	6.11%	8.51%	10.91%
Alliant Energy Corporation	LNT	\$1.81	\$51.86	3.49%	3.56%	1.70%	6.00%	3.85%	5.26%	7.41%	9.56%
Ameren Corporation	AEE	\$2.52	\$82.15	3.07%	3.15%	4.11%	6.50%	5.31%	7.26%	8.45%	9.65%
American Electric Power Company, Inc.	AEP	\$3.32	\$81.18	4.09%	4.31%	15.45%	6.50%	10.98%	19.77%	15.29%	10.81%
Avista Corporation	AVA	\$1.84	\$35.66	5.16%	5.25%		3.50%	3.50%		8.75%	8.75%
CMS Energy Corporation	CMS	\$1.95	\$58.26	3.35%	3.46%		6.50%	6.50%		9.96%	9.96%
Duke Energy Corporation	DUK	\$4.02	\$91.19	4.41%	4.52%		5.00%	5.00%		9.52%	9.52%
Entergy Corporation	ETR	\$4.28	\$97.48	4.39%	4.52%	7.60%	4.00%	5.80%	12.12%	10.32%	8.52%
Energy, Inc.	EVRG	\$2.45	\$57.61	4.25%	4.39%	5.14%	7.50%	6.32%	9.53%	10.71%	11.89%
IDACORP, Inc.	IDA	\$3.16	\$98.03	3.22%	3.29%	3.43%	4.50%	3.96%	6.72%	7.25%	7.79%
NextEra Energy, Inc.	NEE	\$1.87	\$69.69	2.68%	2.80%	6.56%	10.50%	8.53%	9.36%	11.33%	13.30%
NorthWestern Corporation	NWE	\$2.56	\$53.80	4.76%	4.85%	4.16%	3.50%	3.83%	9.01%	8.68%	8.35%
OGE Energy Corporation	OGE	\$1.66	\$34.85	4.75%	4.88%	3.88%	6.50%	5.19%	8.75%	10.06%	11.38%
Otter Tail Corporation	OTTR	\$1.75	\$86.08	2.03%	2.08%	4.91%	4.50%	4.70%	6.99%	6.78%	6.58%
Portland General Electric Company	POR	\$1.81	\$46.11	3.93%	4.01%	3.42%	5.00%	4.21%	7.43%	8.22%	9.01%
Southern Company	SO	\$2.72	\$68.88	3.95%	4.04%	3.09%	6.50%	4.79%	7.13%	8.84%	10.54%
Xcel Energy Inc.	XEL	\$2.08	\$60.18	3.46%	3.55%	5.01%	6.00%	5.50%	8.56%	9.06%	9.55%
Mean				3.87%	3.97%	4.98%	5.79%	5.39%	8.86%	9.36%	9.77%
Median				3.95%	4.04%	4.14%	6.00%	5.00%	7.99%	8.84%	9.56%

Notes:

[1] Source: Yahoo Finance

[2] Source: Yahoo Finance, equals 30-day, average as of August 26, 2023

[3] Equals [1] / [2]

[4] Equals [3] x (1 + 0.50 x [7])

[5] Source: Stock Analysis

[6] Source: Value Line

[7] Equals Average ([5], [6])

[8] Equals [4] + [5]

[9] Equals [4] + [7]

[10] Equals [4] + [6]

90-DAY CONSTANT GROWTH DCF -- PACIFIC POWER PROXY GROUP

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
Company	Ticker	Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Monte Carlo Simulation	Value Line EPS Growth	Average Growth Rate	Monte Carlo ROE	Mean ROE	Value Line ROE
ALLETE, Inc.	ALE	\$2.71	\$57.55	4.71%	4.79%	1.21%	6.00%	3.60%	6.00%	8.39%	10.79%
Alliant Energy Corporation	LNT	\$1.81	\$52.26	3.46%	3.53%	1.70%	6.50%	4.10%	5.24%	7.64%	10.03%
Ameren Corporation	AEE	\$2.52	\$82.60	3.05%	3.13%	4.11%	6.50%	5.31%	7.24%	8.44%	9.63%
American Electric Power Company, Inc.	AEP	\$3.32	\$82.73	4.01%	4.23%	15.45%	6.00%	10.73%	19.68%	14.95%	10.23%
Avista Corporation	AVA	\$1.84	\$37.91	4.85%	4.94%		3.50%	3.50%		8.44%	8.44%
CMS Energy Corporation	CMS	\$1.95	\$58.87	3.31%	3.42%		6.50%	6.50%		9.92%	9.92%
Duke Energy Corporation	DUK	\$4.02	\$90.36	4.45%	4.56%		5.00%	5.00%		9.56%	9.56%
Entergy Corporation	ETR	\$4.28	\$97.98	4.37%	4.46%	7.60%	0.50%	4.05%	12.06%	8.51%	4.96%
Energy, Inc.	EVRG	\$2.45	\$58.04	4.22%	4.35%	5.14%	7.50%	6.32%	9.50%	10.68%	11.85%
IDACORP, Inc.	IDA	\$3.16	\$101.22	3.12%	3.18%	3.43%	4.50%	3.96%	6.61%	7.15%	7.68%
NextEra Energy, Inc.	NEE	\$1.87	\$72.24	2.59%	2.70%	6.56%	10.00%	8.28%	9.25%	10.98%	12.70%
NorthWestern Corporation	NWE	\$2.56	\$55.92	4.58%	4.67%	4.16%	3.50%	3.83%	8.83%	8.50%	8.17%
OGE Energy Corporation	OGE	\$1.66	\$35.38	4.68%	4.80%	3.88%	6.50%	5.19%	8.68%	9.99%	11.30%
Otter Tail Corporation	OTTR	\$1.75	\$80.64	2.17%	2.22%	4.91%	4.50%	4.70%	7.13%	6.92%	6.72%
Portland General Electric Company	POR	\$1.81	\$47.11	3.84%	3.92%	3.42%	5.00%	4.21%	7.34%	8.13%	8.92%
Southern Company	SO	\$2.72	\$69.51	3.91%	4.01%	3.09%	6.50%	4.79%	7.09%	8.80%	10.51%
Xcel Energy Inc.	XEL	\$2.08	\$62.12	3.35%	3.44%	5.01%	6.00%	5.50%	8.45%	8.94%	9.44%
Mean				3.80%	3.90%	4.98%	5.56%	5.27%	8.79%	9.17%	9.46%
Median				3.91%	4.01%	4.14%	6.00%	4.79%	7.90%	8.51%	9.63%

Notes:

[1] Source: Yahoo Finance

[2] Source: Yahoo Finance, equals 90-day, average as of August 26, 2023

[3] Equals [1] / [2]

[4] Equals [3] x (1 + 0.50 x [7])

[5] Source: Stock Analysis

[6] Source: Value Line

[7] Equals Average ([5], [6])

[8] Equals [4] + [5]

[9] Equals [4] + [7]

[10] Equals [4] + [6]

180-DAY CONSTANT GROWTH DCF -- PACIFIC POWER PROXY GROUP

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
Company	Ticker	Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	20-Year Monte Carlo Simulation	Value Line EPS Growth	Average Growth Rate	Monte Carlo ROE	Mean ROE	Value Line ROE
ALLETE, Inc.	ALE	\$2.71	\$59.49	4.55%	4.63%	1.21%	6.00%	3.60%	5.84%	8.24%	10.63%
Alliant Energy Corporation	LNT	\$1.81	\$52.43	3.45%	3.52%	1.70%	6.50%	4.10%	5.23%	7.63%	10.02%
Ameren Corporation	AEE	\$2.52	\$84.05	3.00%	3.08%	4.11%	6.50%	5.31%	7.19%	8.38%	9.58%
American Electric Power Company, Inc.	AEP	\$3.32	\$85.82	3.87%	4.08%	15.45%	6.00%	10.73%	19.53%	14.80%	10.08%
Avista Corporation	AVA	\$1.84	\$39.77	4.63%	4.71%		3.50%			8.21%	8.21%
CMS Energy Corporation	CMS	\$1.95	\$59.30	3.29%	3.40%		6.50%	6.50%		9.90%	9.90%
Duke Energy Corporation	DUK	\$4.02	\$92.32	4.35%	4.46%		5.00%	5.00%		9.46%	9.46%
Entergy Corporation	ETR	\$4.28	\$100.77	4.25%	4.33%	7.60%	0.50%	4.05%	11.93%	8.38%	4.83%
Evergy, Inc.	EVRG	\$2.45	\$58.72	4.17%	4.30%	5.14%	7.50%	6.32%	9.45%	10.63%	11.80%
IDACORP, Inc.	IDA	\$3.16	\$103.72	3.05%	3.11%	3.43%	4.50%	3.96%	6.54%	7.07%	7.61%
NextEra Energy, Inc.	NEE	\$1.87	\$73.77	2.53%	2.64%	6.56%	10.00%	8.28%	9.20%	10.92%	12.64%
NorthWestern Corporation	NWE	\$2.56	\$56.62	4.52%	4.61%	4.16%	3.50%	3.83%	8.77%	8.44%	8.11%
OGE Energy Corporation	OGE	\$1.66	\$35.78	4.63%	4.75%	3.88%	6.50%	5.19%	8.63%	9.94%	11.25%
Otter Tail Corporation	OTTR	\$1.75	\$76.56	2.29%	2.34%	4.91%	4.50%	4.70%	7.25%	7.04%	6.84%
Portland General Electric Company	POR	\$1.81	\$47.79	3.79%	3.87%	3.42%	5.00%	4.21%	7.29%	8.08%	8.87%
Southern Company	SO	\$2.72	\$69.17	3.93%	4.03%	3.09%	6.50%	4.79%	7.11%	8.82%	10.53%
Xcel Energy Inc.	XEL	\$2.08	\$64.49	3.23%	3.31%	5.01%	6.00%	5.50%	8.32%	8.82%	9.31%
Mean				3.74%	3.83%	4.98%	5.56%	5.27%	8.73%	9.10%	9.39%
Median				3.87%	4.03%	4.14%	6.00%	4.79%	7.80%	8.44%	9.58%

Notes:

[1] Source: Yahoo Finance

[2] Source: Yahoo Finance, equals 180-day, average as of August 26, 2023

[3] Equals [1] / [2]

[4] Equals [3] x (1 + 0.50 x [7])

[5] Source: Stock Analysis

[6] Source: Value Line

[7] Equals Average ([5], [6])

[8] Equals [4] + [5]

[9] Equals [4] + [7]

[10] Equals [4] + [6]

CAPITAL ASSET PRICING MODEL -- Mean ERP, Regression Betas, and PAC Model

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

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

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]
		Near-term projected 30-year U.S. Treasury bond yield (Q3 2023 - Q3 2024)	Beta ( $\beta$ )	Market Return (Rm)	Market Risk Premium (Rm - Rf)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	4.08%	0.70	11.07%	6.98%	8.97%	9.50%
Alliant Energy Corporation	LNT	4.08%	0.61	11.07%	6.98%	8.35%	9.03%
Ameren Corporation	AEE	4.08%	0.54	11.07%	6.98%	7.86%	8.66%
American Electric Power Company, Inc.	AEP	4.08%	0.57	11.07%	6.98%	8.07%	8.82%
Avista Corporation	AVA	4.08%	0.45	11.07%	6.98%	7.26%	8.21%
CMS Energy Corporation	CMS	4.08%	0.42	11.07%	6.98%	7.04%	8.05%
Duke Energy Corporation	DUK	4.08%	0.50	11.07%	6.98%	7.58%	8.45%
Entergy Corporation	ETR	4.08%	0.79	11.07%	6.98%	9.61%	9.97%
Energy, Inc.	EVRG	4.08%	0.58	11.07%	6.98%	8.17%	8.89%
IDACORP, Inc.	IDA	4.08%	0.57	11.07%	6.98%	8.04%	8.80%
NextEra Energy, Inc.	NEE	4.08%	0.57	11.07%	6.98%	8.04%	8.79%
NorthWestern Corporation	NWE	4.08%	0.47	11.07%	6.98%	7.38%	8.30%
OGE Energy Corporation	OGE	4.08%	0.72	11.07%	6.98%	9.09%	9.58%
Otter Tail Corporation	OTTR	4.08%	0.50	11.07%	6.98%	7.60%	8.47%
Portland General Electric Company	POR	4.08%	0.51	11.07%	6.98%	7.65%	8.50%
Southern Company	SO	4.08%	0.57	11.07%	6.98%	8.09%	8.84%
Xcel Energy Inc.	XEL	4.08%	0.44	11.07%	6.98%	7.17%	8.15%
Mean						8.00%	8.77%
Median						8.04%	8.79%

Notes:

- [1] Source: U.S. DEPARTMENT OF THE TREASURY
- [2] Source: Regression
- [3] Source: Mean of Value Line and Current Implied Risk Premium
- [4] Equals [4] - [1]
- [5] Equals [1] + [2] x [4]
- [6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL -- Mean ERP, Unadjusted Bloomberg Betas, and PAC Model

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

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]
		Projected 30-year U.S. Treasury bond yield (2024 - 2028)	Beta ( $\beta$ )	Market Return (Rm)	Market Risk Premium (Rm - Rf)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	4.08%	0.75	11.07%	6.98%	9.31%	9.75%
Alliant Energy Corporation	LNT	4.08%	0.70	11.07%	6.98%	8.95%	9.48%
Ameren Corporation	AEE	4.08%	0.64	11.07%	6.98%	8.55%	9.18%
American Electric Power Company, Inc.	AEP	4.08%	0.66	11.07%	6.98%	8.67%	9.27%
Avista Corporation	AVA	4.08%	0.64	11.07%	6.98%	8.53%	9.16%
CMS Energy Corporation	CMS	4.08%	0.64	11.07%	6.98%	8.53%	9.16%
Duke Energy Corporation	DUK	4.08%	0.59	11.07%	6.98%	8.20%	8.92%
Entergy Corporation	ETR	4.08%	0.79	11.07%	6.98%	9.59%	9.96%
Energy, Inc.	EVRG	4.08%	0.68	11.07%	6.98%	8.85%	9.41%
IDACORP, Inc.	IDA	4.08%	0.71	11.07%	6.98%	9.06%	9.56%
NextEra Energy, Inc.	NEE	4.08%	0.74	11.07%	6.98%	9.22%	9.68%
NorthWestern Corporation	NWE	4.08%	0.80	11.07%	6.98%	9.64%	10.00%
OGE Energy Corporation	OGE	4.08%	0.89	11.07%	6.98%	10.33%	10.51%
Otter Tail Corporation	OTTR	4.08%	0.82	11.07%	6.98%	9.84%	10.15%
Portland General Electric Company	POR	4.08%	0.68	11.07%	6.98%	8.84%	9.40%
Southern Company	SO	4.08%	0.67	11.07%	6.98%	8.76%	9.34%
Xcel Energy Inc.	XEL	4.08%	0.62	11.07%	6.98%	8.44%	9.10%
Mean						9.02%	9.53%
Median						8.85%	9.41%

[2] Source: Unadjusted Bloomberg Beta