Sierra Club Exhibit TC-4

Exhibit No.: Issues: Revenue Requirement Witness: Type of Exhibit: Sponsoring Party:

Case No.:

Tyler Comings

Sierra Club ER-2024-0319 mber 3 2024

		Exhibit Table 1: Sample Group Key Data			Date Testir	December 3, 2024		
Company	Ticker	Value Line Beta	Value Line Dividend in next 12 mo	30-day average stock price	Dividend Yield (=C/D)	Moody's rating	Book value per share	Market- to-Book ratio (=D/G)
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Ameren	AEE	0.90	2.68	\$87.65	3.06%	Baa1	\$42.90	2.04
American Electric Power	AEP	0.85	3.60	\$98.94	3.64%	Baa2	\$55.05	1.80
Avista Corp	AVA	0.95	1.92	\$37.71	5.09%	Baa2	\$32.90	1.15
CMS Energy Corp	CMS	0.85	2.06	\$69.96	2.94%	Baa2	\$27.00	2.59
Duke Energy	DUK	0.90	4.18	\$115.45	3.62%	Baa2	\$66.25	1.74
Edison International	EIX	1.00	3.25	\$84.23	3.86%	Baa2	\$38.00	2.22
Entergy Corp	ETR	1.00	4.52	\$137.24	3.29%	Baa2	\$70.65	1.94
Evergy, Inc.	EVRG	0.95	2.61	\$60.73	4.30%	Baa2	\$44.10	1.38
Idacorp, Inc.	IDA	0.85	3.32	\$104.65	3.17%	Baa2	\$63.55	1.65
Alliant Energy	LNT	0.90	1.92	\$59.94	3.20%	Baa2	\$27.65	2.17
MGE Energy	MGEE	0.80	1.80	\$92.19	1.95%	NR	\$33.20	2.78
Nextera Energy	NEE	1.05	2.20	\$81.22	2.71%	Baa1	\$24.65	3.29
Northwestern Energy	NWE	1.00	2.63	\$54.93	4.79%	Baa2	\$46.40	1.18
OGE Energy Corp	OGE	1.10	1.69	\$40.74	4.15%	Baa1	\$23.10	1.76
TXNM Energy, Lnc.	TXNM	0.90	1.63	\$43.71	3.73%	Baa3	\$27.40	1.60
Pinnacle West	PNW	0.95	3.60	\$88.04	4.09%	Baa2	\$59.90	1.47
Portland General	POR	0.95	2.06	\$47.41	4.35%	A3	\$34.20	1.39
Southern Company	SO	0.95	2.88	\$90.37	3.19%	Baa2	\$29.90	3.02
Xcel Energy	XEL	0.85	2.27	\$64.51	3.52%	Baa1	\$33.30	1.94
Average		0.93			3.61%			

Sources:

(B), (C) Beta and "Dividend in Next 12 Months" directly from Value Line Summary and Index from November 15, 2024.

(D) "30-day average stock price" from October 1, 2024 through November 11, 2024 pulled from Yahoo Finance (available at: https://finance.yahoo.com/).

(F) Moody's rating for senior debt (available at moodys.com)

(G) Book value per share from 2024 reported by Value Line Investment Survey, September through November 2024 (latest available).

Exhibit Table 2: DCF 1 Estimate								
Ticker	Retained to	Retained to	Average	Market to	Share	Share	Div.	DCF
	common	common	internal	Book	Growth	Growth	Yield	(=C+F+G)
	equity 2022-	equity 2027-	growth	ratio		Factor		
	2024	2029				(=(D-1)*E)		
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
AEE	4.80%	4.00%	4.40%	2.04	1.62%	1.69%	3.06%	9.15%
AEP	3.10%	4.50%	3.80%	1.80	1.17%	0.93%	3.64%	8.37%
AVA	1.27%	2.50%	1.88%	1.15	2.57%	0.38%	5.09%	7.35%
CMS	4.33%	4.50%	4.42%	2.59	0.60%	0.95%	2.94%	8.31%
DUK	1.93%	3.00%	2.47%	1.74	0.57%	0.42%	3.62%	6.51%
EIX	5.07%	5.50%	5.28%	2.22	0.77%	0.94%	3.86%	10.08%
ETR	5.80%	3.50%	4.65%	1.94	1.59%	1.50%	3.29%	9.44%
EVRG	2.87%	3.50%	3.18%	1.38	0.15%	0.06%	4.30%	7.54%
IDA	3.53%	3.50%	3.52%	1.65	1.17%	0.76%	3.17%	7.45%
LNT	3.90%	4.50%	4.20%	2.17	0.48%	0.56%	3.20%	7.97%
MGEE	5.13%	5.50%	5.32%	2.78	0.43%	0.76%	1.95%	8.03%
NEE	5.73%	5.00%	5.37%	3.29	1.06%	2.44%	2.71%	10.51%
NWE	1.70%	3.00%	2.35%	1.18	2.52%	0.46%	4.79%	7.60%
OGE	3.67%	5.50%	4.58%	1.76	0.00%	0.00%	4.15%	8.74%
TXNM	4.70%	4.50%	4.60%	1.60	1.89%	1.13%	3.73%	9.45%
PNW	1.87%	3.00%	2.43%	1.47	0.99%	0.47%	4.09%	6.99%
POR	2.57%	3.50%	3.03%	1.39	2.24%	0.87%	4.35%	8.24%
SO	3.23%	5.00%	4.12%	3.02	0.39%	0.79%	3.19%	8.09%
XEL	4.20%	4.50%	4.35%	1.94	1.10%	1.03%	3.52%	8.90%

Exhibit Table 2: DCF 1 Estimate

Average 8.35% DCF

Sources:

(A), (B) "Retained to Common Equity" reported by Value Line Investment Survey, September through November 2024 (latest available).

(E) Average of 5-year historical and projected annual share growth reported by Value Line Investment Survey, September through November 2024 (latest available).

(D), (G) from Exhibit Table 1.

Exhibit Table 3: DCF 2 Estimate

	Value	e Line Proje	ected	Value Line Historica		rical	Zacks Projected	Yahoo Projected	Average EPS Projected	Average Growth	Dividend Yield	DCF COE <i>=(J)+(K)</i>
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(1)	(J)	(K)	(L)
	EPS	DPS	BVPS	EPS	DPS	BVPS	EPS	EPS				
AEE	6.50%	6.50%	6.50%	8.00%	5.00%	5.50%	6.58%	6.20%	6.43%	6.32%	3.06%	9.38%
AEP	6.50%	5.50%	6.00%	4.00%	5.00%	3.50%	6.24%	6.62%	6.45%	5.08%	3.64%	8.71%
AVA	5.00%	4.00%	2.00%	1.00%	4.50%	3.50%	3.87%	6.20%	5.02%	3.34%	5.09%	8.43%
CMS	6.00%	5.00%	5.00%	5.50%	6.50%	8.00%	7.56%	7.60%	7.05%	6.18%	2.94%	9.12%
DUK	5.00%	2.00%	2.50%	4.50%	3.50%	1.00%	6.13%	6.71%	5.95%	3.24%	3.62%	6.86%
EIX	6.50%	6.00%	5.00%	14.00%	5.00%	0.50%	8.45%	8.70%	7.88%	6.40%	3.86%	10.26%
ETR	0.50%	3.50%	5.00%	5.50%	3.00%	6.50%	8.30%	7.41%	5.40%	4.82%	3.29%	8.11%
EVRG	7.50%	7.00%	3.50%	4.86%	7.34%	1.38%	5.85%	6.20%	6.52%	5.10%	4.30%	9.40%
IDA	6.00%	5.50%	4.50%	3.50%	6.50%	4.50%	8.31%	5.50%	6.60%	5.18%	3.17%	8.36%
LNT	6.00%	6.00%	4.00%	7.00%	6.50%	6.50%	6.84%	7.05%	6.63%	6.11%	3.20%	9.31%
MGEE	7.00%	6.50%	5.50%	6.50%	4.50%	6.00%		5.40%	6.20%	5.87%	1.95%	7.82%
NEE	8.50%	9.00%	9.00%	12.50%	11.50%	6.00%	8.12%	8.17%	8.26%	9.38%	2.71%	12.09%
NWE	4.00%	2.00%	3.00%		3.50%	4.00%	6.14%	6.10%	5.41%	3.58%	4.79%	8.37%
OGE	6.50%	3.00%	5.50%	4.50%	6.50%	1.50%	5.18%		5.84%	4.47%	4.15%	8.62%
TXNM	5.00%	5.50%	4.50%	8.00%	7.00%	4.00%	2.54%	4.42%	3.99%	5.50%	3.73%	9.23%
PNW	4.50%	2.00%	5.00%	2.00%	5.00%	3.50%	8.22%	7.20%	6.64%	4.02%	4.09%	8.11%
POR	6.00%	5.50%	4.00%	3.00%	6.00%	3.00%	12.62%	12.60%	10.41%	5.32%	4.35%	9.66%
SO	6.50%	3.50%	3.50%	3.00%	3.50%	2.50%	6.95%	7.30%	6.92%	3.82%	3.19%	7.01%
XEL	6.00%	6.00%	5.00%	6.50%	6.50%	6.00%	6.90%	6.70%	6.53%	6.09%	3.52%	9.61%
											Average	

DCF 8.87%

Sources:

(A)-(F) Value Line Investment Survey, September through November 2024 (latest available).
(G) Zacks Investment Research 3-5 year earnings per share (EPS) forecast (available at: <u>zacks.com</u>).
(H) Yahoo Finance EPS 5-year forecast, originally pulled on November 5, 2024, later updated (if there was a change) on November 11, 2024) (available at: <u>https://finance.yahoo.com/</u>).
(K) from Exhibit Table 1.

Notes:

(I) Average of (C), (G), and (H)
(J) Average of (B), (C), (D), (E), (F), and (I).
EPS = earnings per share.
DPS=dividends per share.
BVPS=book value per share.
Blank spaces represent excluded outliers (negative or >20% growth) and unavailable data.

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а	Beta	0.93
b	20 yr Treasury rate	4.50%
с	Kroll risk premium	5.00%
d	CAPM using Kroll (= b + c*a)	9.15%
е	ECAPM using Kroll (= b + c*a*.75+c*.25)	9.24%
f	10 yr Treasury rate	4.16%
g	Hist Risk premium (arithmetic)	6.80%
h	Hist Risk premium (geometric)	5.23%
i	CAPM (arithmetic) (= f + g*a)	10.50%
j	CAPM (geometric) (= f + h*a)	9.03%
k	Avg of the two hist CAPMs	9.77%
Ι	ECAPM (arithmetic) (= f + g*a*.75 + g*.25)	10.61%
m	ECAPM (geometric) (= f + h*a*.75 + h*.25)	9.12%
n	Avg of the two hist ECAPMs	9.87%
р	Average of hist and projected CAPMs	<u>9.46%</u>
q	Average of hist and projected ECAPMs	<u>9.55%</u>

Exhibit Table 4: Capital Asset Pricing Model (CAPM)

Sources:

a. Average from Exhibit Table 1.

b,f. Bond rates from October 1 through November 13, 2024 (available at

https://home.treasury.gov/resource-center/data-chart-center/interest-

rates/TextView?type=daily_treasury_yield_curve&field_tdr_date_value=2024).

c. Projected risk premium is from Kroll's recommended equity risk premium for U.S. (available at: <u>https://www.kroll.com/en/insights/publications/cost-of-capital/recommended-us-equity-risk-premium-and-corresponding-risk-free-rates</u>).

g, h. Historical market risk premium from Damodaran (=return on S&P with dividends minus return on 10 Year Treasury Bonds): (<u>https://pages.stern.nyu.edu/~adamodar/New_Home_Page/data.html)</u>