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SCHEDULE 1
SUMMARY OF DISCOUNTED CASH FLOW ANALYSIS
FOR ELECTRIC UTILITIES

	COMPANY	MOST RECENT QUARTERLY DIVIDEND (D ₀)	D ₀	STOCK PRICE (P ₀)	DIVIDEND	FORECAST OF FUTURE EARNINGS GROWTH	MARKET CAP \$ (MIL)	DCF MODEL RESULT
1	ALLETE	0.560	2.24	73.557	2.401	6.0%	3,794	9.4%
2	Alliant Energy	0.335	1.34	41.013	1.423	5.9%	9,407	9.5%
3	Amer. Elec. Power	0.620	2.48	67.621	2.686	5.8%	32,122	10.0%
4	Ameren Corp.	0.458	1.83	56.556	1.977	6.3%	13,606	10.0%
5	AVANGRID Inc.	0.432	1.73	51.248	2.009	10.4%	15,905	14.5%
6	CenterPoint Energy	0.278	1.11	26.402	1.247	8.9%	10,912	13.9%
7	CMS Energy Corp.	0.358	1.43	44.958	1.533	7.0%	12,454	10.6%
8	Consol. Edison	0.715	2.86	77.102	2.990	3.5%	22,975	7.6%
9	Dominion Energy	0.835	3.34	67.047	3.498	7.4%	41,554	12.9%
10	DTE Energy	0.883	3.53	102.870	3.794	5.6%	18,025	9.5%
11	Duke Energy	0.890	3.56	77.140	3.839	4.2%	51,980	9.5%
12	El Paso Electric	0.335	1.44	51.321	1.452	5.2%	2,212	8.2%
13	Eversource Energy	0.505	2.02	58.410	2.143	5.7%	18,094	9.6%
14	Exelon Corp.	0.345	1.38	39.014	1.455	4.8%	37,988	8.8%
15	Hawaiian Elec.	0.310	1.24	34.033	1.419	9.1%	3,607	13.5%
16	NextEra Energy	1.110	4.44	160.232	4.642	9.5%	73,742	12.6%
17	NorthWestern Corp.	0.550	2.20	53.567	2.253	3.2%	2,635	7.6%
18	OGE Energy	0.333	1.33	32.764	1.399	4.3%	6,653	8.8%
19	Otter Tail Corp.	0.335	1.34	43.708	1.493	9.0%	1,729	12.6%
20	Pinnacle West Capital	0.695	2.78	78.493	2.923	3.8%	8,548	7.7%
21	PNM Resources	0.265	1.06	38.279	1.086	4.3%	3,011	7.3%
22	PPL Corp.	0.410	1.64	28.158	1.679	2.1%	18,693	8.4%
23	Public Serv. Enterprise	0.450	1.80	50.099	1.861	4.0%	25,039	7.9%
24	Sempra Energy	0.895	3.58	109.121	3.812	8.6%	26,990	12.3%
25	Southern Co.	0.600	2.40	44.603	2.478	2.7%	44,127	8.5%
26	WEC Energy Group	0.553	2.21	62.195	2.335	5.3%	19,055	9.3%
27	Xcel Energy Inc.	0.380	1.52	44.992	1.600	5.9%	22,303	9.6%
28	Average							10.0%

Notes:

- d_0 = Most recent quarterly dividend.
 d_1, d_2, d_3, d_4 = Next four quarterly dividends, calculated by multiplying the last four quarterly dividends by the factor $(1 + g)$.
 P_0 = Average of the monthly high and low stock prices during the three months ending May 2018 per Thomson Reuters.
FC = Flotation cost allowance (five percent) as a percent of stock price.
 g = I/B/E/S forecast of future earnings growth May 2018 from Thomson Reuters.
 k = Cost of equity using the quarterly version of the DCF model.

$$k = \frac{d_1(1+k)^{.75} + d_2(1+k)^{.50} + d_3(1+k)^{.25} + d_4}{P_0(1-FC)} + g$$

My analysis does not include outlier results that are less than one hundred basis points above the forecasted bond yield for a company's rating.

SCHEDULE 2
CALCULATION OF CAPITAL ASSET PRICING MODEL COST OF EQUITY
USING AN HISTORICAL 7.1 PERCENT RISK PREMIUM

LINE	COMPANY	VALUE LINE BETA	RISK- FREE RATE	MARKET RISK PREMIUM	BETA X RISK PREMIUM	CAPM COST OF EQUITY
1	ALLETE	0.75	3.9%	7.1%	5.3%	9.4%
2	Alliant Energy	0.70	3.9%	7.1%	4.9%	9.1%
3	Amer. Elec. Power	0.65	3.9%	7.1%	4.6%	8.7%
4	Ameren Corp.	0.65	3.9%	7.1%	4.6%	8.7%
5	AVANGRID Inc.	0.40	3.9%	7.1%	2.8%	6.9%
6	Black Hills	0.85	3.9%	7.1%	6.0%	10.1%
7	CenterPoint Energy	0.90	3.9%	7.1%	6.4%	10.5%
8	CMS Energy Corp.	0.65	3.9%	7.1%	4.6%	8.7%
9	Consol. Edison	0.50	3.9%	7.1%	3.5%	7.7%
10	Dominion Energy	0.65	3.9%	7.1%	4.6%	8.7%
11	DTE Energy	0.65	3.9%	7.1%	4.6%	8.7%
12	Duke Energy	0.60	3.9%	7.1%	4.2%	8.4%
13	Edison Int'l	0.60	3.9%	7.1%	4.2%	8.4%
14	El Paso Electric	0.75	3.9%	7.1%	5.3%	9.4%
15	Entergy Corp.	0.65	3.9%	7.1%	4.6%	8.7%
16	Eversource Energy	0.65	3.9%	7.1%	4.6%	8.7%
17	Exelon Corp.	0.70	3.9%	7.1%	4.9%	9.1%
18	FirstEnergy Corp.	0.65	3.9%	7.1%	4.6%	8.7%
19	Fortis Inc.	0.70	3.9%	7.1%	4.9%	9.1%
20	Hawaiian Elec.	0.65	3.9%	7.1%	4.6%	8.7%
21	IDACORP Inc.	0.65	3.9%	7.1%	4.6%	8.7%
22	MGE Energy	0.70	3.9%	7.1%	4.9%	9.1%
23	NextEra Energy	0.65	3.9%	7.1%	4.6%	8.7%
24	NorthWestern Corp.	0.65	3.9%	7.1%	4.6%	8.7%
25	OGE Energy	0.95	3.9%	7.1%	6.7%	10.8%
26	Otter Tail Corp.	0.85	3.9%	7.1%	6.0%	10.1%
27	Pinnacle West Capital	0.65	3.9%	7.1%	4.6%	8.7%
28	PNM Resources	0.75	3.9%	7.1%	5.3%	9.4%
29	Portland General	0.65	3.9%	7.1%	4.6%	8.7%
30	PPL Corp.	0.75	3.9%	7.1%	5.3%	9.4%
31	Public Serv. Enterprise	0.70	3.9%	7.1%	4.9%	9.1%
32	Sempra Energy	0.75	3.9%	7.1%	5.3%	9.4%
33	Southern Co.	0.55	3.9%	7.1%	3.9%	8.0%
34	WEC Energy Group	0.60	3.9%	7.1%	4.2%	8.4%
35	Xcel Energy Inc.	0.60	3.9%	7.1%	4.2%	8.4%
36	Historical CAPM Result	0.68	3.9%	7.1%	4.8%	8.9%
1	Historical CAPM Result 0.88 Beta	0.88	3.9%	7.1%	6.2%	10.3%

SBBI Market Risk Premium	7.1%
Risk-Free Rate	3.9%
Flotation	0.21%

Historical Ibbotson® SBBI® risk premium including years 1926 through year end 2017 from 2018 Stocks, Bonds, Bills, and Inflation (SBBI). Value Line beta for comparable companies from Value Line Investment Analyzer. Historical beta developed per Schedule 3. Treasury bond yield forecast from data in Value Line Selection & Opinion, June 1, 2018, and Energy Information Administration, 2018, determined as follows. Value Line forecasts a yield on 10-year Treasury notes equal to 3.6 percent. The spread between the average yield on 10-year Treasury notes (2.98 percent) and 20-year Treasury bonds (3.05 percent) is 7 basis points. Adding 7 basis points to Value Line's 3.6 percent forecasted yield on 10-year Treasury notes produces a forecasted yield of 3.67 percent for 20-year Treasury bonds (see Value Line Investment Survey, Selection & Opinion, June 1, 2018). EIA forecasts a yield of 4.07 percent on 10-year Treasury notes. Adding the 7 basis point spread between 10-year Treasury notes and 20-year Treasury bonds to the EIA forecast of 4.07 percent for 10-year Treasury notes produces an EIA forecast for 20-year Treasury bonds equal to 4.14 percent. The average of the forecasts is 3.9 percent (3.7 percent using Value Line data and 4.1 percent using EIA data).

**SCHEDULE 3
 COMPARISON OF RISK PREMIA ON
 S&P500 AND S&P UTILITIES 1937 – 2018**

YEAR	S&P UTILITIES STOCK RETURN	SP500 STOCK RETURN	10-YR. TREASURY BOND YIELD	UTILITIES RISK PREMIUM	MARKET RISK PREMIUM
2016	0.1172	0.2471	0.0223	0.0939	0.2238
2016	0.1744	0.2080	0.0184	0.1560	0.1896
2015	-0.0390	-0.0332	0.0214	-0.0604	-0.0546
2014	0.2891	0.1339	0.0254	0.2637	0.1085
2013	0.1301	0.2524	0.0235	0.1066	0.2289
2012	0.0209	0.1602	0.0180	0.0029	0.1422
2011	0.1999	0.0325	0.0278	0.1721	0.0047
2010	0.0704	0.1618	0.0322	0.0382	0.1296
2009	0.1071	0.3291	0.0326	0.0745	0.2965
2008	-0.2590	-0.3516	0.0367	-0.2957	-0.3883
2007	0.1656	-0.0138	0.0463	0.1193	-0.0601
2006	0.2076	0.1320	0.0479	0.1597	0.0841
2005	0.1605	0.1001	0.0429	0.1176	0.0572
2004	0.2284	0.0594	0.0427	0.1857	0.0167
2003	0.2348	0.2822	0.0401	0.1947	0.2421
2002	-0.1473	-0.2005	0.0461	-0.1934	-0.2466
2001	-0.1790	-0.1347	0.0502	-0.2292	-0.1849
2000	0.3278	-0.0513	0.0603	0.2675	-0.1116
1999	-0.0172	0.1546	0.0564	-0.0736	0.0982
1998	0.1547	0.3125	0.0526	0.1021	0.2599
1997	0.1858	0.2768	0.0635	0.1223	0.2133
1996	0.0383	0.2702	0.0644	-0.0261	0.2058
1995	0.3749	0.3493	0.0658	0.3091	0.2835
1994	-0.0383	0.0105	0.0708	-0.1091	-0.0603
1993	0.1095	0.1156	0.0587	0.0508	0.0569
1992	0.1246	0.0750	0.0701	0.0545	0.0049
1991	0.1425	0.3165	0.0786	0.0639	0.2379
1990	0.0033	-0.0085	0.0855	-0.0822	-0.0940
1989	0.3468	0.2276	0.0850	0.2618	0.1426
1988	0.1480	0.1761	0.0884	0.0596	0.0877
1987	-0.0574	-0.0213	0.0838	-0.1412	-0.1051
1986	0.3787	0.3095	0.0768	0.3019	0.2327
1985	0.3000	0.2583	0.1062	0.1938	0.1521
1984	0.1995	0.0741	0.1244	0.0751	-0.0503
1983	0.2016	0.2012	0.1110	0.0906	0.0902
1982	0.3020	0.2896	0.1300	0.1720	0.1596
1981	0.0940	-0.0700	0.1391	-0.0451	-0.2091
1980	0.1301	0.2534	0.1146	0.0155	0.1388
1979	0.0879	0.1652	0.0944	-0.0065	0.0708

YEAR	S&P UTILITIES STOCK RETURN	SP500 STOCK RETURN	10-YR. TREASURY BOND YIELD	UTILITIES RISK PREMIUM	MARKET RISK PREMIUM
1978	0.0396	0.1580	0.0841	-0.0445	0.0739
1977	0.0416	-0.0906	0.0742	-0.0326	-0.1648
1976	0.2270	0.1096	0.0761	0.1509	0.0335
1975	0.3224	0.3856	0.0799	0.2425	0.3057
1974	-0.1429	-0.2086	0.0756	-0.2185	-0.2842
1973	-0.1345	-0.1614	0.0684	-0.2029	-0.2298
1972	0.0512	0.1758	0.0621	-0.0109	0.1137
1971	-0.0007	0.1381	0.0616	-0.0623	0.0765
1970	0.1945	0.0708	0.0735	0.1210	-0.0027
1969	-0.1438	-0.0840	0.0667	-0.2105	-0.1507
1968	0.0528	0.1045	0.0565	-0.0037	0.0480
1967	0.0022	0.1605	0.0507	-0.0485	0.1098
1966	-0.0172	-0.0648	0.0492	-0.0664	-0.1140
1965	0.0134	0.1135	0.0428	-0.0294	0.0707
1964	0.1611	0.1570	0.0419	0.1192	0.1151
1963	0.0947	0.2082	0.0400	0.0547	0.1682
1962	0.0425	-0.0284	0.0395	0.0030	-0.0679
1961	0.2247	0.1894	0.0388	0.1859	0.1506
1960	0.2252	0.0618	0.0412	0.1840	0.0206
1959	0.0500	0.0757	0.0433	0.0067	0.0324
1958	0.3688	0.3974	0.0332	0.3356	0.3642
1957	0.0790	-0.0518	0.0365	0.0425	-0.0883
1956	0.0716	0.0714	0.0318	0.0398	0.0396
1955	0.1016	0.2840	0.0282	0.0734	0.2558
1954	0.2237	0.4552	0.0240	0.1997	0.4312
1953	0.0962	0.0270	0.0281	0.0681	-0.0011
1952	0.1536	0.1405	0.0248	0.1288	0.1157
1951	0.1710	0.2039	0.0241	0.1469	0.1798
1950	0.0460	0.3230	0.0205	0.0255	0.3025
1949	0.2783	0.1610	0.0193	0.2590	0.1417
1948	0.0541	0.0928	0.0215	0.0326	0.0713
1947	-0.1041	0.0199	0.0185	-0.1226	0.0014
1946	-0.0700	-0.1203	0.0174	-0.0874	-0.1377
1945	0.5789	0.3818	0.0173	0.5616	0.3645
1944	0.2065	0.1879	0.0209	0.1856	0.1670
1943	0.3745	0.2298	0.0207	0.3538	0.2091
1942	0.1736	0.2087	0.0211	0.1525	0.1876
1941	-0.2838	-0.0898	0.0199	-0.3037	-0.1097
1940	-0.1652	-0.0965	0.0220	-0.1872	-0.1185
1939	0.1126	0.0189	0.0235	0.0891	-0.0046
1938	0.1954	0.1836	0.0255	0.1699	0.1581
1937	-0.3693	-0.3136	0.0269	-0.3962	-0.3405
Risk Premium 1937 to 2018				0.0552	0.0628
RP Utilities/RP SP500				0.88	

SCHEDULE 4
CALCULATION OF CAPITAL ASSET PRICING MODEL (CAPM) COST OF EQUITY
USING DCF ESTIMATE OF THE EXPECTED RATE OF RETURN
ON THE MARKET PORTFOLIO

LINE	COMPANY	VALUE LINE BETA	RISK- FREE RATE	DCF S&P 500	MARKET RISK PREMIUM	BETA X RISK PREMIUM	CAPM COST OF EQUITY
1	ALLETE	0.75	3.9%	14.1%	10.1%	7.61%	11.7%
2	Alliant Energy	0.70	3.9%	14.1%	10.1%	7.10%	11.2%
3	Amer. Elec. Power	0.65	3.9%	14.1%	10.1%	6.59%	10.7%
4	Ameren Corp.	0.65	3.9%	14.1%	10.1%	6.59%	10.7%
5	AVANGRID Inc.	0.40	3.9%	14.1%	10.1%	4.06%	8.2%
6	Black Hills	0.85	3.9%	14.1%	10.1%	8.62%	12.7%
7	CenterPoint Energy	0.90	3.9%	14.1%	10.1%	9.13%	13.2%
8	CMS Energy Corp.	0.65	3.9%	14.1%	10.1%	6.59%	10.7%
9	Consol. Edison	0.50	3.9%	14.1%	10.1%	5.07%	9.2%
10	Dominion Energy	0.65	3.9%	14.1%	10.1%	6.59%	10.7%
11	DTE Energy	0.65	3.9%	14.1%	10.1%	6.59%	10.7%
12	Duke Energy	0.60	3.9%	14.1%	10.1%	6.09%	10.2%
13	Edison Int'l	0.60	3.9%	14.1%	10.1%	6.09%	10.2%
14	El Paso Electric	0.75	3.9%	14.1%	10.1%	7.61%	11.7%
15	Energys Corp.	0.65	3.9%	14.1%	10.1%	6.59%	10.7%
16	Eversource Energy	0.65	3.9%	14.1%	10.1%	6.59%	10.7%
17	Exelon Corp.	0.70	3.9%	14.1%	10.1%	7.10%	11.2%
18	FirstEnergy Corp.	0.65	3.9%	14.1%	10.1%	6.59%	10.7%
19	Fortis Inc.	0.70	3.9%	14.1%	10.1%	7.10%	11.2%
20	Hawaiian Elec.	0.65	3.9%	14.1%	10.1%	6.59%	10.7%
21	IDACORP Inc.	0.65	3.9%	14.1%	10.1%	6.59%	10.7%
22	MGE Energy	0.70	3.9%	14.1%	10.1%	7.10%	11.2%
23	NextEra Energy	0.65	3.9%	14.1%	10.1%	6.59%	10.7%
24	NorthWestern Corp.	0.65	3.9%	14.1%	10.1%	6.59%	10.7%
25	OGE Energy	0.95	3.9%	14.1%	10.1%	9.63%	13.8%
26	Otter Tail Corp.	0.85	3.9%	14.1%	10.1%	8.62%	12.7%
27	Pinnacle West Capital	0.65	3.9%	14.1%	10.1%	6.59%	10.7%
28	PNM Resources	0.75	3.9%	14.1%	10.1%	7.61%	11.7%
29	Portland General	0.65	3.9%	14.1%	10.1%	6.59%	10.7%
30	PPL Corp.	0.75	3.9%	14.1%	10.1%	7.61%	11.7%
31	Public Serv. Enterprise	0.70	3.9%	14.1%	10.1%	7.10%	11.2%
32	Sempra Energy	0.75	3.9%	14.1%	10.1%	7.61%	11.7%
33	Southern Co.	0.55	3.9%	14.1%	10.1%	5.58%	9.7%
34	WEC Energy Group	0.60	3.9%	14.1%	10.1%	6.09%	10.2%
35	Xcel Energy Inc.	0.60	3.9%	14.1%	10.1%	6.09%	10.2%
36	DCF CAPM Result	0.68	3.9%	14.1%	10.1%	6.88%	11.0%
1	Historical Utility Beta	0.88	3.9%	14.1%	10.1%	8.92%	13.0%
	Average DCF CAPM Result						12.0%

Notes: Historical Ibbotson® SBBI® risk premium including years 1926 through year end 2017 from 2018 Stocks, Bonds, Bills, and Inflation (SBBI). Historical utility beta per Schedule 3. Value Line beta for comparable companies from Value Line Investment Analyzer. Treasury bond yield forecast from data in Value Line Selection & Opinion, June 1, 2018, and Energy Information Administration, 2018, determined as follows. Value Line forecasts a yield on 10-year Treasury notes equal to 3.6 percent. The spread between the average yield on 10-year Treasury notes (2.98 percent) and 20-year Treasury bonds (3.05 percent) is 7 basis points. Adding 7 basis points to Value Line's 3.6 percent forecasted yield on 10-year Treasury notes produces a forecasted yield of 3.67 percent for 20-year Treasury bonds (see Value Line Investment Survey, Selection & Opinion, June 1, 2018). EIA forecasts a yield of 4.07 percent on 10-year Treasury notes. Adding the 7 basis point spread between 10-year Treasury notes and 20-year Treasury bonds to the EIA forecast of 4.07 percent for 10-year Treasury notes produces an EIA forecast for 20-year Treasury bonds equal to 4.14 percent. The average of the forecasts is 3.9 percent (3.7 percent using Value Line data and 4.1 percent using EIA data).

SCHEDULE 4 (CONTINUED)
SUMMARY OF DISCOUNTED CASH FLOW ANALYSIS
FOR S&P 500 COMPANIES

	COMPANY	STOCK PRICE (P ₀)	D ₀	FORECAST OF FUTURE EARNINGS GROWTH	MODEL RESULT	MARKET CAP \$ (MILS)
1	ABBOTT LABORATORIES	59.84	1.12	11.86%	14.0%	107,050
2	ACTIVISION BLIZZARD	69.03	0.34	16.32%	16.9%	54,548
3	AETNA	174.14	2.00	10.06%	11.3%	57,907
4	AGILENT TECHS.	67.03	0.60	10.32%	11.3%	20,506
5	ALTRIA GROUP	59.22	2.80	9.99%	15.3%	104,645
6	AMERICAN AIRLINES GROUP	48.09	0.40	11.51%	12.4%	20,426
7	AMERICAN EXPRESS	96.96	1.40	11.22%	12.8%	87,086
8	AMERISOURCEBERGEN	89.51	1.52	10.06%	11.9%	19,138
9	AMETEK	74.13	0.56	11.33%	12.2%	17,445
10	ANTHEM	228.89	3.00	15.36%	16.9%	59,153
11	APPLE	173.94	2.92	13.45%	15.4%	919,081
12	AUTOMATIC DATA PROC.	117.48	2.76	13.86%	16.6%	56,382
13	AVERY DENNISON	107.59	2.08	12.15%	14.3%	9,524
14	BALL	39.61	0.40	10.38%	11.5%	13,268
15	BANK OF NEW YORK MELLON	54.07	0.96	9.35%	11.3%	57,892
16	BAXTER INTL.	68.01	0.76	13.53%	14.8%	37,832
17	BECTON DICKINSON	222.87	3.00	14.10%	15.6%	59,912
18	BRISTOL MYERS SQUIBB	57.86	1.60	10.99%	14.1%	86,206
19	BROADCOM	244.03	7.00	13.37%	16.7%	98,355
20	CENTERPOINT EN.	26.40	1.11	8.21%	12.8%	10,912
21	CH ROBINSON WWD.	90.60	1.84	12.07%	14.4%	12,192
22	CHURCH & DWIGHT CO.	47.92	0.87	10.56%	12.6%	11,425
23	CIGNA	174.50	0.04	13.72%	13.7%	43,523
24	CISCO SYSTEMS	43.69	1.32	9.49%	12.8%	204,387
25	CITIGROUP	70.41	1.28	13.94%	16.0%	182,473
26	CLOROX	124.24	3.84	7.89%	11.3%	15,325
27	COCA COLA	43.17	1.56	7.60%	11.5%	179,998
28	COGNIZANT TECH.SLTN.'A'	80.43	0.80	13.45%	14.6%	44,399
29	CONAGRA BRANDS	36.70	0.85	11.71%	14.3%	14,844
30	CONSTELLATION BRANDS 'A'	225.29	2.08	15.48%	16.5%	37,334
31	COSTCO WHOLESALE	190.96	2.28	11.74%	13.1%	87,588
32	CUMMINS	157.71	4.32	10.73%	13.8%	24,116
33	CVS HEALTH	65.22	2.00	11.36%	14.8%	66,855
34	DARDEN RESTAURANTS	89.32	2.52	13.53%	16.8%	10,638
35	DELTA AIR LINES	53.88	1.22	12.00%	14.6%	37,248
36	DISCOVER FINANCIAL SVS.	73.22	1.40	11.64%	13.8%	27,161
37	DOLLAR GENERAL	93.45	1.16	15.63%	17.1%	25,960
38	DOMINION ENERGY	67.05	3.34	6.38%	11.8%	41,554
39	DR PEPPER SNAPPLE GROUP	118.57	2.32	10.29%	12.5%	21,515
40	ECOLAB	138.93	1.64	12.83%	14.2%	42,433

	COMPANY	STOCK PRICE (P ₀)	D ₀	FORECAST OF FUTURE EARNINGS GROWTH	MODEL RESULT	MARKET CAP \$ (MILS)
41	ELI LILLY	79.36	2.25	11.84%	15.0%	88,636
42	EXPEDIA GROUP	111.65	1.20	15.46%	16.7%	15,887
43	EXPEDITOR INTL.OF WASH.	65.02	0.90	11.23%	12.8%	12,566
44	FEDEX	244.83	2.00	14.81%	15.8%	66,392
45	FIDELITY NAT.INFO.SVS.	98.13	1.28	13.89%	15.4%	34,366
46	GAP	31.05	0.97	10.82%	14.3%	12,221
47	HCA HEALTHCARE	98.77	1.40	12.21%	13.8%	36,013
48	HERSHEY	95.80	2.62	9.64%	12.7%	13,765
49	HP	22.16	0.56	9.08%	11.9%	36,603
50	HUMANA	280.12	2.00	14.65%	15.5%	40,054
51	ILLINOIS TOOL WORKS	152.51	3.12	13.24%	15.6%	49,381
52	INTEL	51.84	1.20	9.84%	12.4%	255,415
53	INTERPUBLIC GROUP	23.50	0.84	8.47%	12.4%	9,225
54	INVESCO	30.43	1.20	9.55%	13.9%	11,768
55	JACOBS ENGR.	59.14	0.60	15.10%	16.3%	9,069
56	JP MORGAN CHASE & CO.	111.05	2.24	10.91%	13.2%	384,604
57	KRAFT HEINZ	60.00	2.50	7.05%	11.6%	70,785
58	L BRANDS	37.11	2.40	8.36%	15.5%	9,493
59	M&T BANK	182.78	3.20	13.16%	15.2%	26,760
60	MCCORMICK & COMPANY NV.	106.06	2.08	10.48%	12.7%	12,753
61	MICROSOFT	93.70	1.68	12.28%	14.3%	738,970
62	MONDELEZ INTERNATIONAL CL.A	40.90	0.88	10.68%	13.1%	58,295
63	MOTOROLA SOLUTIONS	107.65	2.08	9.27%	11.4%	17,227
64	NEXTERA ENERGY	160.23	4.44	9.13%	12.2%	73,742
65	NORTHROP GRUMMAN	334.68	4.80	13.17%	14.8%	56,591
66	NVIDIA	233.96	0.60	14.06%	14.4%	150,369
67	PACKAGING CORP.OF AM.	115.50	3.16	11.36%	14.4%	11,353
68	PAYCHEX	62.56	2.24	9.29%	13.3%	23,145
69	PEPSICO	104.96	3.71	7.69%	11.5%	138,836
70	PERKINELMER	74.96	0.28	14.32%	14.7%	8,231
71	PHILIP MORRIS INTL.	91.85	4.28	8.62%	13.8%	125,975
72	PNC FINL.SVS.GP.	149.43	3.00	12.20%	14.5%	70,730
73	PVH	152.84	0.15	12.38%	12.5%	12,039
74	QUEST DIAGNOSTICS	102.34	2.00	9.25%	11.4%	13,814
75	REPUBLIC SVS.'A'	66.79	1.38	14.23%	16.6%	21,843
76	ROCKWELL AUTOMATION	173.84	3.68	12.20%	14.6%	22,573
77	ROCKWELL COLLINS	134.75	1.32	12.51%	13.6%	22,332
78	S&P GLOBAL	191.62	2.00	14.97%	16.2%	49,672
79	SEAGATE TECH.	56.96	2.52	10.70%	15.7%	16,942
80	SKYWORKS SOLUTIONS	98.25	1.28	14.82%	16.3%	18,155
81	STANLEY BLACK & DECKER	149.28	2.52	10.93%	12.8%	22,091
82	STRYKER	165.61	1.88	10.03%	11.3%	64,002
83	SYMANTEC	25.91	0.30	10.56%	11.8%	13,873
84	SYSCO	61.68	1.44	14.27%	17.0%	33,270

	COMPANY	STOCK PRICE (P ₀)	D ₀	FORECAST OF FUTURE EARNINGS GROWTH	MODEL RESULT	MARKET CAP \$ (MILS)
85	T ROWE PRICE GROUP	112.07	2.80	13.20%	16.1%	29,209
86	TAPESTRY	50.23	1.35	11.51%	14.5%	12,785
87	TEXAS INSTRUMENTS	105.23	2.48	12.77%	15.5%	108,004
88	THERMO FISHER SCIENTIFIC	211.29	0.68	11.78%	12.1%	84,894
89	TIFFANY & CO	104.63	2.20	9.58%	11.9%	12,943
90	TIME WARNER	94.48	1.61	10.23%	12.1%	72,662
91	TRACTOR SUPPLY	65.22	1.24	13.73%	15.9%	8,747
92	UNITED PARCEL SER.'B'	109.41	3.64	11.02%	14.8%	80,396
93	V F	76.61	1.84	10.99%	13.7%	31,541
94	WALGREENS BOOTS ALLIANCE	65.60	1.60	11.82%	14.6%	65,440
95	WALT DISNEY	101.28	1.68	12.08%	14.0%	155,521
96	WASTE MANAGEMENT	83.74	1.86	12.73%	15.3%	35,230
97	WELLS FARGO & CO	53.47	1.56	9.37%	12.6%	264,207
98	WHIRLPOOL	155.28	4.60	9.80%	13.1%	11,458
99	WILLIS TOWERS WATSON	152.15	2.40	12.62%	14.4%	20,322
100	XILINX	69.89	1.44	11.52%	13.8%	18,111
101	ZOETIS	82.44	0.50	15.04%	15.7%	40,137
102	Market-weighted Average				14.1%	

Notes: In applying the DCF model to the S&P 500, I include in the DCF analysis only those companies in the S&P 500 group which pay a dividend, have a positive growth rate, and have at least three analysts' long-term growth estimates. I also eliminate those twenty-five percent of companies with the highest and lowest DCF results, a decision which had no impact on my CAPM estimate of the cost of equity.

D₀ = Current dividend per Thomson Reuters.
P₀ = Average of the monthly high and low stock prices during the three months ending May 2018 per Thomson Reuters.
g = I/B/E/S forecast of future earnings growth May 2018.
k = Cost of equity using the quarterly version of the DCF model shown below:

$$k = \left[\frac{d_0(1+g)^{\frac{1}{4}}}{P_0} + (1+g)^{\frac{1}{4}} \right]^4 - 1$$

SCHEDULE 5
COMPARABLE EARNINGS VALUE LINE ELECTRIC UTILITIES

	COMPANY	AVERAGE FORECAST ROE 2018 TO 2021-2023	ADJUSTMENT FACTOR	FORECASTED RETURN ON AVERAGE EQUITY
1	ALLETE	8.2%	1.0288	8.4%
2	Alliant Energy	11.2%	1.0040	11.2%
3	Amer. Elec. Power	10.2%	1.0278	10.4%
4	Ameren Corp.	10.0%	1.0258	10.3%
5	AVANGRID Inc.	5.2%	1.0090	5.2%
6	Black Hills	9.7%	1.0359	10.0%
7	CenterPoint Energy	14.2%	1.0254	14.5%
8	CMS Energy Corp.	13.8%	1.0391	14.4%
9	Consol. Edison	8.3%	1.0191	8.5%
10	Dominion Energy	14.3%	1.0266	14.7%
11	DTE Energy	10.5%	1.0338	10.9%
12	Duke Energy	8.0%	1.0159	8.1%
13	Edison Int'l	12.3%	1.0214	12.6%
14	El Paso Electric	8.7%	1.0187	8.8%
15	Entergy Corp.	10.7%	1.0313	11.0%
16	Eversource Energy	9.2%	1.0178	9.3%
17	Exelon Corp.	8.8%	1.0266	9.1%
18	FirstEnergy Corp.	12.5%	1.0931	13.7%
19	Fortis Inc.	8.0%	1.0352	8.3%
20	Hawaiian Elec.	9.7%	1.0255	9.9%
21	IDACORP Inc.	9.0%	1.0172	9.2%
22	MGE Energy	10.0%	1.0409	10.4%
23	NextEra Energy	12.2%	1.0420	12.7%
24	NorthWestern Corp.	9.2%	1.0195	9.3%
25	OGE Energy	10.5%	1.0153	10.7%
26	Otter Tail Corp.	10.2%	1.0437	10.6%
27	Pinnacle West Capital	10.2%	1.0196	10.4%
28	PNM Resources	9.2%	1.0274	9.4%
29	Portland General	8.5%	1.0159	8.6%
30	PPL Corp.	12.8%	1.0410	13.4%
31	Public Serv. Enterprise	11.0%	1.0233	11.3%
32	Sempra Energy	10.2%	1.0505	10.7%
33	Southern Co.	11.8%	1.0319	12.2%
34	WEC Energy Group	11.2%	1.0167	11.4%
35	Xcel Energy Inc.	10.5%	1.0244	10.8%
36	Average			10.6%

Source of Data: The Value Line Investment Survey, East Electric Utilities, May 18, 2018; Central Electric Utilities, March 16, 2018; West Electric Utilities, April 27, 2018. The adjustment factor is computed using the formula: $2 \times (1 + 5\text{-year change in equity}) \div (2 + 5\text{-year change in equity})$. The adjustment factor is required to convert the Value Line ROE data, which are based on year-end equity, to a rate of return on equity based on average equity for the year.