

COST OF CAPITAL STUDY

YIELD CAPITALIZATION

2017 Assessment Year

APPENDIX C

Electric Industry

EQUITY RATE					8.90%	
CAPITAL ASSET PRICING MODEL						PAGE
	CAPM Ex Ante		6.68%			4
DIVIDEND GROWTH MODELS						
	Value Line, based on Dividends Growth		8.90%			6
	Value Line, based on Earnings Growth		8.30%			7
	Value Line, based on Return on Equity		7.50%			8
				RANGE	6.68-8.90%	
DEBT RATE					4.70%	9
MARKET CAPITAL STRUCTURE						
	Equity	60%	x 8.90%	=	5.34%	3
	Debt	40%	x 4.70%	=	1.88%	3
	Marginal Tax Rate	38%	= (1-.38)	x 1.88%	<u>1.17%</u>	
WEIGHTED AVERAGE COST OF CAPITAL					6.51%	

SUPPORT FOR GUIDELINE COMPANIES

Washington State Department of Revenue

2017 Assessment Year

Electric Industry

Capital Structure at Book Value

Company	Ticker	Beta	Fin'l Strength	P/E Ratio	Div'd Yield	Common Stock	%	Preferred Stock	%	Long Term Debt	%	Total Debt & Equity
ALLETE Inc	ale	0.80	A	21.4	3.2%	1,910,371,093	24.2%			5,980,999,999	75.8%	7,891,371,092
Ameren Corp	aee	0.70	A	20.4	3.3%	7,101,920,537	53.7%	142,000,000	1.1%	5,981,000,000	45.2%	13,224,920,537
Avista Corp	ava	0.70	A	19.2	3.4%	1,639,911,394	53.2%			1,443,200,000	46.8%	3,083,111,394
Centerpoint Energy	cnp	0.85	B+	28.3	4.2%	3,458,431,602	31.1%			7,662,000,000	68.9%	11,120,431,602
CMS Energy Corp	cms	0.65	B++	22.3	3.0%	4,252,292,150	34.6%	37,000,000	0.3%	8,014,000,000	65.1%	12,303,292,150
Con. Edison	ed	0.55	A+	17.9	3.6%	14,261,248,076	55.3%			11,521,000,000	44.7%	25,782,248,076
DTE Energy Co	dte	0.65	B++	21.1	3.1%	9,011,125,210	50.4%			8,856,000,000	49.6%	17,867,125,210
Edison International	eix	0.65	A	18.7	2.8%	11,957,271,260	47.6%	2,191,000,000	8.7%	10,957,000,000	43.6%	25,105,271,260
El Paso Electric	ee	0.70	B++	20.4	2.6%	1,059,656,733	48.3%			1,134,300,000	51.7%	2,193,956,733
Eversource	es	0.70	A	19.8	3.2%	10,710,740,310	54.6%	155,600,000	0.8%	8,757,500,000	44.6%	19,623,840,310
Great Plains Energy	gxp	0.75	B+	17.8	3.9%	5,326,461,183	58.6%			3,763,500,000	41.4%	9,089,961,183
Idacorp Inc	ida	0.75	A	20.3	2.6%	2,149,635,405	55.2%			1,741,900,000	44.8%	3,891,535,405
NorthWestern Corp	nwe	0.70	B+	17.0	3.5%	1,662,470,885	47.9%			1,808,900,000	52.1%	3,471,370,885
OGE Energy Corp	oge	0.95	A	21.8	3.5%	3,442,896,132	56.5%			2,645,500,000	43.5%	6,088,396,132
Otter Tail Corp	ottr	0.85	A	23.6	3.1%	671,166,350	57.4%			498,300,000	42.6%	1,169,466,350
PG&E Corp	pcg	0.65	B+	35.9	3.2%	17,799,467,629	53.0%	252,000,000	0.8%	15,545,000,000	46.3%	33,596,467,629
Pinnacle West	pnw	0.70	A+	20.3	3.3%	4,741,640,158	59.3%			3,257,300,000	40.7%	7,998,940,158
Portland General	por	0.70	B++	21.4	2.9%	2,329,883,575	51.4%			2,204,000,000	48.6%	4,533,883,575
P.S. Enterprise Gp	peg	0.70	A++	15.3	3.7%	13,153,301,668	61.8%			8,132,000,000	38.2%	21,285,301,668
SCANA Corp	scg	0.65	B++	17.5	3.1%	5,688,093,297	48.6%			6,018,000,000	51.4%	11,706,093,297
Vectren Corp	vvc	0.75	A	22.1	3.1%	1,768,735,048	53.7%			1,522,700,000	46.3%	3,291,435,048
Westar Energy	wr	0.70	A	22.4	2.7%	3,832,614,866	56.6%			2,941,900,000	43.4%	6,774,514,866
Xcel Energy	xel	0.60	A+	19.0	3.3%	11,022,575,652	46.5%			12,691,000,000	53.5%	23,713,575,652
Mean		0.71		21.0	3.2%	6,041,387,401	50.4%		2.3%	5,785,956,522	49.1%	
Harmonic Mean		0.70					48.0%		0.7%		47.8%	
Weighted Mean						138,951,910,213	50.6%	2,777,600,000	1.0%	133,076,999,999	48.4%	274,806,510,212
Median		0.70			3.2%		53.2%		0.8%		46.3%	

SUPPORT FOR CAPITAL STRUCTURE Market Value

Washington State Department of Revenue

2017 Assessment Year

Electric Industry

Company	Ticker	Stock Price	Common Shares	Common Stock	%	Preferred Stock	%	Long Term Debt	%	Total Debt & Equity
ALLETE Inc	ale	64.19	50,049,020	3,212,646,594	66.0%			1,653,800,000	34.0%	4,866,446,594
Ameren Corp	aee	52.46	242,634,798	12,728,621,503	61.7%	142,000,000	0.7%	7,772,000,000	37.7%	20,642,621,503
Avista Corp	ava	39.99	64,184,399	2,566,734,116	58.4%	-		1,825,372,000	41.6%	4,392,106,116
Centerpoint Energy	cnp	24.64	430,688,867	10,612,173,683	54.5%	-		8,846,000,000	45.5%	19,458,173,683
CMS Energy Corp	cms	41.62	279,205,000	11,620,512,100	53.8%	37,000,000	0.2%	9,953,000,000	46.1%	21,610,512,100
Con. Edison	ed	73.68	304,727,523	22,452,323,895	58.2%	-		16,093,000,000	41.8%	38,545,323,895
DTE Energy Co	dte	98.51	179,432,999	17,675,944,731	59.8%	-		11,905,000,000	40.2%	29,580,944,731
Edison International	eix	71.99	325,811,206	23,455,148,720	61.7%	2,191,000,000	5.8%	12,368,000,000	32.5%	38,014,148,720
El Paso Electric	ee	46.50	40,522,246	1,884,284,439	57.1%	-		1,417,958,000	42.9%	3,302,242,439
Eversource	es	55.23	316,885,808	17,501,603,176	63.3%	155,600,000	0.6%	9,980,500,000	36.1%	27,637,703,176
Great Plains Energy	gxp	27.35	215,384,601	5,890,768,837	59.6%	-		4,000,000,000	40.4%	9,890,768,837
Idacorp Inc	ida	80.55	50,401,768	4,059,862,412	68.6%	-		1,858,666,000	31.4%	5,918,528,412
NorthWestern Corp	nwe	56.87	48,327,642	2,748,393,001	59.4%	-		1,878,377,000	40.6%	4,626,770,001
OGE Energy Corp	oge	33.45	199,703,952	6,680,097,194	70.4%	-		2,803,900,000	29.6%	9,483,997,194
Otter Tail Corp	ottr	40.80	39,410,825	1,607,961,660	73.4%	-		583,835,000	26.6%	2,191,796,660
PG&E Corp	pcg	60.77	505,666,694	30,729,364,994	61.7%	252,000,000	0.5%	18,842,000,000	37.8%	49,823,364,994
Pinnacle West	pnw	78.03	111,306,107	8,685,215,529	66.2%	-		4,425,789,000	33.8%	13,111,004,529
Portland General	por	43.33	88,926,854	3,853,200,584	58.9%	-		2,693,000,000	41.1%	6,546,200,584
P.S. Enterprise Gp	peg	43.88	505,896,218	22,198,726,046	64.9%	-		12,003,000,000	35.1%	34,201,726,046
SCANA Corp	scg	73.28	142,916,917	10,472,951,678	59.3%	-		7,183,300,000	40.7%	17,656,251,678
Vectren Corp	vvc	52.15	82,922,412	4,324,403,786	70.2%	-		1,835,800,000	29.8%	6,160,203,786
Westar Energy	wr	56.35	141,791,153	7,989,931,472	69.0%	-		3,597,441,000	31.0%	11,587,372,472
Xcel Energy	xel	40.70	507,952,795	20,673,678,757	57.1%	-		15,513,209,000	42.9%	36,186,887,757
Mean					62.3%		1.5%		37.4%	
Harmonic Mean					61.9%		0.4%		36.5%	
Weighted Mean			253,624,548,906	61.1%	2,777,600,000	0.7%	159,032,947,000	38.3%	415,435,095,906	
Median					61.7%		0.6%		37.8%	
Std Dev					5.4%		2.4%		5.5%	
Coefficient of Variation					8.6%		154.0%		14.6%	
Target					60%			40%	100%	

SUPPORT FOR YIELD CAPITALIZATION EQUITY COMPONENT CAPITAL ASSET PRICING MODEL

2017 Assessment Year

$$\text{Ex Ante} \\ \text{Ke} = \text{Rf} + \text{B} (\text{Rp})$$

Ke = Cost of Equity		6.68%	
			to page 1
Rm =	rate of return	8.25%	
Rf =	risk free rate	3.00%	
Rp =	risk premium	5.25%	
B =	Beta	0.70	page 7
Rp = Risk Premium		5.25%	
			to above
Shannon Pratt and Roger Grabowski		3.50% - 6.00%	
	Cost of Capital, Applications and Examples, 3rd Ed, 2008		
Dr. Aswath Damodaran		5.69%	chart page 13
	http://pages.stern.nyu.edu/~adamodar/	5.14%	adjusted for Rf
	2016 Implied Premium		
John Graham & Campbell Harvey		5.70%	10 year expected real ret
Duke CFO magazine Global Business Outlook survey - U.S.		2.23%	Rf rate used in survey
	4th Qtr 2016	4.93%	adjusted for Rf
Rf = Risk Free Rate		3.00%	
			to above
2016 Valuation Handbook			
as of 12-30-16	Long Term (20 years) US Treasury Bond Yield	2.79%	
Value Line Investment Survey, Selected Yields January 6, 2017, page 3197			
as of 12-28-16	US Treasury Securities year end data		
	5 year	2.00%	
	10 year	2.51%	
	30 year	3.09%	
	30 year Zero	3.17%	
Federal Reserve Statistical Release (http://www.federalreserve.gov/Releases/H15/Current/)			
as of 12-30-16	Treasury Constant Maturities		
	5 year	1.93%	
	10 year	2.45%	
	20 year	2.79%	
	30 year	3.06%	
	20 year TIPS	<u>0.82%</u>	1.97%
	30 year TIPS	<u>0.99%</u>	2.07%
			TIPS inflation indication
Inflation		2.00%	
Value Line Investment Survey, Economic Series January 6, 2017, page 1500			
	Consumer Price Index Annual Rate of Change 2019-2021	2.50%	
Federal Reserve Bank of Philadelphia			
	The Livingston Survey December 9, 2016	Table 3	
	Inflation median (measured by the CPI) over next 10 years	2.30%	
	https://www.philadelphiafed.org/research-and-data/real-time-center/livingston-survey		
Nominal Gross Domestic Product (GDP)		3.80%	
Federal Reserve Projected Long Run Real GDP Growth			
	Median Projection Value From Dec 14, 2016 Report	1.80%	
	http://www.federalreserve.gov/monetarypolicy/fomccalendars.htm		
Congressional Budget Office Real GDP Economic Projections			Table C-1 pg 126
	The Budget and Economic Outlook 2017-2027	2017-2021	1.86%
	Average Percentage Change From Year to Year	2022-2027	1.90%
	http://www.cbo.gov/publication/52370		
Federal Reserve Bank of Philadelphia			
	The Livingston Survey, December 9, 2016		pg 4
	Average Annual Real GDP Growth Rate for Next Ten Years		2.20%
	https://www.philadelphiafed.org/research-and-data/real-time-center/livingston-survey		

SUPPORT FOR YIELD CAPITALIZATION EQUITY COMPONENT

DIVIDEND GROWTH MODEL

Washington State Department of Revenue

2017 Assessment Year

Electric Industry

Based on Dividend Growth

$$K_e = (D1 / P_o) + G$$

K_e = Cost of Equity
 $D1$ = Expected Dividends
 P_o = Current Price
 G = Sustainable Growth

Company	Ticker	Stock Price (Po)	Expected Dividend (D1)	Dividend Yield (D1/Po)	Dividend Growth (G)	Ke with Short Term Growth	Ke with Multi Stage Adj
ALLETE Inc	ale	64.19	2.14	3.33%	4.00%	7.33%	7.50%
Ameren Corp	ae	52.46	1.78	3.39%	4.50%	7.89%	7.96%
Avista Corp	ava	39.99	1.37	3.43%	3.00%	6.43%	7.00%
Centerpoint Energy	cnp	24.64	1.07	4.34%	3.50%	7.84%	NMF
CMS Energy Corp	cms	41.62	1.33	3.20%	6.50%	9.70%	9.27%
Con. Edison	ed	73.68	2.76	3.75%	3.00%	6.75%	7.15%
DTE Energy Co	dte	98.51	3.36	3.41%	7.00%	10.41%	9.92%
Edison International	eix	71.99	2.21	3.07%	10.00%	13.07%	11.90%
El Paso Electric	ee	46.50	1.30	2.80%	7.00%	9.80%	9.49%
Eversource	es	55.23	1.90	3.44%	5.50%	8.94%	8.59%
Great Plains Energy	gxp	27.35	1.12	4.10%	5.00%	9.10%	9.62%
Idacorp Inc	ida	80.55	2.24	2.78%	7.50%	10.28%	9.82%
NorthWestern Corp	nwe	56.87	2.08	3.66%	5.50%	9.16%	9.08%
OGE Energy Corp	oge	33.45	1.27	3.80%	9.00%	12.80%	11.90%
Otter Tail Corp	ottr	40.80	1.25	3.06%	1.50%	4.56%	nmf
PG&E Corp	pcg	60.77	2.08	3.42%	7.00%	10.42%	9.84%
Pinnacle West	pnw	78.03	2.68	3.43%	5.00%	8.43%	8.43%
Portland General	por	43.33	1.34	3.09%	6.00%	9.09%	8.93%
P.S. Enterprise Gp	peg	43.88	1.72	3.92%	5.00%	8.92%	8.97%
SCANA Corp	scg	73.28	2.42	3.30%	4.50%	7.80%	7.90%
Vectren Corp	vvc	52.15	1.70	3.26%	4.50%	7.76%	7.70%
Westar Energy	wr	56.35	1.60	2.84%	5.00%	7.84%	7.75%
Xcel Energy	xel	40.70	1.44	3.54%	6.00%	9.54%	9.31%
Mean						8.86%	8.95%
Harmonic Mean						8.44%	8.78%
Median						8.94%	8.97%
Max						13.07%	11.90%
Min						4.56%	7.00%
Std Dev						1.90%	1.33%
Coefficient of Variation						21.38%	14.89%

Say **8.90%**

SUPPORT FOR YIELD CAPITALIZATION EQUITY COMPONENT DIVIDEND GROWTH MODEL

Washington State Department of Revenue

2017 Assessment Year

Electric Industry

Based on Earnings Growth

$$K_e = (D_1 / P_o) + G$$

K_e = Cost of Equity
 D_1 = Expected Dividends
 P_o = Current Price
 G = Sustainable Growth

Company	Ticker	Stock Price (Po)	Expected Dividend (D1)	Dividend Yield (D1/Po)	Earnings Growth (G)	Ke with Short Term Growth	Ke with Multi Stage FCFE Adj
ALLETE Inc	ale	64.19	2.14	3.33%	5.00%	8.33%	7.73%
Ameren Corp	ae	52.46	1.78	3.39%	6.00%	9.39%	8.37%
Avista Corp	ava	39.99	1.37	3.43%	3.00%	6.43%	6.77%
Centerpoint Energy	cnp	24.64	1.07	4.34%	6.00%	10.34%	8.33%
CMS Energy Corp	cms	41.62	1.33	3.20%	6.50%	9.70%	8.13%
Con. Edison	ed	73.68	2.76	3.75%	3.00%	6.75%	8.49%
DTE Energy Co	dte	98.51	3.36	3.41%	5.00%	8.41%	8.35%
Edison International	eix	71.99	2.21	3.07%	3.50%	6.57%	9.08%
El Paso Electric	ee	46.50	1.30	2.80%	4.00%	6.80%	7.54%
Eversource	es	55.23	1.90	3.44%	7.00%	10.44%	9.59%
Great Plains Energy	gxp	27.35	1.12	4.10%	1.50%	5.60%	7.11%
Idacorp Inc	ida	80.55	2.24	2.78%	3.00%	5.78%	6.89%
NorthWestern Corp	nwe	56.87	2.08	3.66%	6.50%	10.16%	9.50%
OGE Energy Corp	oge	33.45	1.27	3.80%	5.50%	9.30%	9.90%
Otter Tail Corp	ottr	40.80	1.25	3.06%	5.00%	8.06%	5.69%
PG&E Corp	pcg	60.77	2.08	3.42%	11.00%	14.42%	9.40%
Pinnacle West	pnw	78.03	2.68	3.43%	4.00%	7.43%	8.00%
Portland General	por	43.33	1.34	3.09%	4.00%	7.09%	7.42%
P.S. Enterprise Gp	peg	43.88	1.72	3.92%	2.50%	6.42%	10.65%
SCANA Corp	scg	73.28	2.42	3.30%	4.50%	7.80%	8.87%
Vectren Corp	vvc	52.15	1.70	3.26%	7.00%	10.26%	8.15%
Westar Energy	wr	56.35	1.60	2.84%	6.00%	8.84%	6.36%
Xcel Energy	xel	40.70	1.44	3.54%	5.50%	9.04%	8.79%
Mean						8.41%	8.22%
Harmonic Mean						8.00%	8.05%
Median						8.33%	8.33%
Max						14.42%	10.65%
Min						5.60%	5.69%
Std Dev						2.01%	1.20%
Coefficient of Variation						23.94%	14.58%
Say							8.30%

SUPPORT FOR YIELD CAPITALIZATION EQUITY COMPONENT

DIVIDEND GROWTH MODEL

Washington State Department of Revenue

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Electric Industry

Based on Return on Equity $K_e = (D1 / P_o) + G$

K_e = Cost of Equity
D1 = Expected Dividends
E1 = Expected Earnings
P_o = Current Price
G = Sustainable Growth
b = Retained Earnings % = (1 - Payout Ratio)
ROE = Return on Equity = (E1 / P_o)

Company	Ticker	Stock Price (P _o)	Expected Dividend (D1)	Expected Earnings (E1)	Dividend Yield (D1/P _o)	Retained Earnings (b)	ROE (E1/P _o)	Growth (b*ROE)	K _e Dividends	K _e Earnings
Ameren Corp	aee	52.46	1.78	3.30	3.39%	36.0%	6.29%	2.26%	5.66%	8.56%
Avista Corp	ava	39.99	1.37	2.80	3.43%	33.0%	7.00%	2.31%	5.74%	9.31%
Centerpoint Energy	cnp	24.64	1.07	1.95	4.34%	-3.0%	7.91%	-0.24%	4.11%	7.68%
CMS Energy Corp	cms	41.62	1.33	1.30	3.20%	37.0%	3.12%	1.16%	4.35%	4.28%
Con. Edison	ed	73.68	2.76	2.15	3.75%	33.0%	2.92%	0.96%	4.71%	3.88%
DTE Energy Co	dte	98.51	3.36	4.15	3.41%	39.0%	4.21%	1.64%	5.05%	5.86%
Edison International	eix	71.99	2.21	5.30	3.07%	46.0%	7.36%	3.39%	6.46%	10.75%
El Paso Electric	ee	46.50	1.30	4.15	2.80%	47.0%	8.92%	4.19%	6.99%	13.12%
Eversource	es	55.23	1.90	2.45	3.44%	39.0%	4.44%	1.73%	5.17%	6.17%
Great Plains Energy	gxp	27.35	1.12	3.15	4.10%	33.0%	11.52%	3.80%	7.90%	15.32%
Idacorp Inc	ida	80.55	2.24	1.30	2.78%	47.0%	1.61%	0.76%	3.54%	2.37%
NorthWestern Corp	nwe	56.87	2.08	4.05	3.66%	41.0%	7.12%	2.92%	6.58%	10.04%
OGE Energy Corp	oge	33.45	1.27	3.45	3.80%	33.0%	10.31%	3.40%	7.20%	13.72%
Otter Tail Corp	ottr	40.80	1.25	2.05	3.06%	22.0%	5.02%	1.11%	4.17%	6.13%
PG&E Corp	pcg	60.77	2.08	1.60	3.42%	33.0%	2.63%	0.87%	4.29%	3.50%
Pinnacle West	pnw	78.03	2.68	3.65	3.43%	35.0%	4.68%	1.64%	5.07%	6.31%
Portland General	por	43.33	1.34	4.30	3.09%	40.0%	9.92%	3.97%	7.06%	13.89%
P.S. Enterprise Gp	peg	43.88	1.72	2.30	3.92%	41.0%	5.24%	2.15%	6.07%	7.39%
SCANA Corp	scg	73.28	2.42	2.85	3.30%	43.0%	3.89%	1.67%	4.97%	5.56%
Vectren Corp	vvc	52.15	1.70	4.15	3.26%	37.0%	7.96%	2.94%	6.20%	10.90%
Westar Energy	wr	56.35	1.60	2.70	2.84%	37.0%	4.79%	1.77%	4.61%	6.56%
Xcel Energy	xel	40.70	1.44	2.55	3.54%	38.0%	6.27%	2.38%	5.92%	8.65%
Mean									5.54%	8.18%
Harmonic Mean									5.30%	6.55%
Median									5.41%	7.53%
Std Dev									1.17%	3.62%
Coefficient of Variation									21.20%	44.21%

say **7.50%**

SUPPORT FOR DEBT RATING AND DEBT YIELD |

Washington State Department of Revenue

2017 Assessment Year

Electric Industry

Company	Ticker	Mergent's Ratings	S&P Ratings
Ameren Corp	aee		BBB+
Avista Corp	ava		BBB
Centerpoint Energy	cnp	A1	A-
CMS Energy Corp	cms	Baa2	BBB+
Con. Edison	ed	A2	A-
DTE Energy Co	dte	Baa1	BBB+
Edison International	eix	A3	BBB+
El Paso Electric	ee	Baa1	BBB
Eversource	es	Baa1	A
Great Plains Energy	gxp		BBB+
Idacorp Inc	ida		BBB
NorthWestern Corp	nwe	A1	BBB
OGE Energy Corp	oge		A-
Otter Tail Corp	ottr		BBB
PG&E Corp	pcg	Baa1	BBB+
Pinnacle West	pnw		A-
Portland General	por		BBB
P.S. Enterprise Gp	peg	Baa1	BBB+
SCANA Corp	scg		BBB+
Vectren Corp	vvc		A-
Westar Energy	wr	A2	BBB+
Xcel Energy	xel	A3	A-
Overall Average Debt Rating		A3	BBB+

Mergent's Bond Record January 2017, page 201				
Corporate	Aaa	Aa	A	Baa
October	3.51%	3.61%	3.78%	4.38%
November	3.86%	3.94%	4.11%	4.71%
December	4.06%	4.12%	4.28%	4.83%
4th Qtr Average	3.81%	3.89%	4.06%	4.64%

Public Utilities	Aaa	Aa	A	Baa
October		3.59%	3.77%	4.34%
November		3.91%	4.08%	4.64%
December		4.11%	4.27%	4.79%
4th Qtr Average		3.87%	4.04%	4.59%

Industrials	Aaa	Aa	A	Baa
October	3.51%	3.63%	3.79%	4.40%
November	3.86%	3.97%	4.14%	4.77%
December	4.06%	4.13%	4.29%	4.85%
4th Qtr Average	3.81%	3.91%	4.07%	4.67%

Moody's Long Term Bond Yield	Baa1	4.74%	4.68%
S&P's Long Term Bond Yield	BBB+	4.76%	4.66%

	Avg YTM		Med YTM
	20y	25Y	30Y
Bloomberg Dec BBB+	4.73%	4.74%	4.72%

Debt Yield Rate **4.70%**

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SUPPORT FOR DIRECT CAPITALIZATION EQUITY COMPONENT

2017 Assessment Year

Electric Industry

Company	Ticker	Stock Price	2016		2017		2016		2017	
			Actual Earnings Ratio (EPS/P)		Projected Earnings Ratio (PEPS/P)		Cash Flow Ratio (CF/P)		Projected Cash Flow Ratio	
Ameren Corp	aee	52.46	2.68	5.1%	2.80	5.3%	6.59	12.6%	7.05	13.4%
Avista Corp	ava	39.99	2.05	5.1%	1.95	4.9%	4.90	12.3%	5.00	12.5%
Centerpoint Energy	cnp	24.64	1.00	4.1%	1.30	5.3%	3.68	14.9%	4.05	16.4%
CMS Energy Corp	cms	41.62	1.98	4.8%	2.15	5.2%	4.88	11.7%	5.30	12.7%
Con. Edison	ed	73.68	3.95	5.4%	4.15	5.6%	7.80	10.6%	8.30	11.3%
DTE Energy Co	dte	98.51	4.83	4.9%	5.30	5.4%	10.60	10.8%	11.60	11.8%
Edison International	eix	71.99	3.90	5.4%	4.15	5.8%	10.40	14.4%	10.95	15.2%
El Paso Electric	ee	46.50	2.30	4.9%	2.45	5.3%	5.95	12.8%	6.25	13.4%
Eversource	es	55.23	2.95	5.3%	3.15	5.7%	5.00	9.1%	5.40	9.8%
Great Plains Energy	gxp	27.35	1.61	5.9%	1.30	4.8%	3.35	12.2%	3.50	12.8%
Idacorp Inc	ida	80.55	3.90	4.8%	4.05	5.0%	6.85	8.5%	7.15	8.9%
NorthWestern Corp	nwe	56.87	3.40	6.0%	3.45	6.1%	6.60	11.6%	6.85	12.0%
OGE Energy Corp	oge	33.45	1.69	5.1%	2.05	6.1%	3.31	9.9%	3.75	11.2%
Otter Tail Corp	ottr	40.80	1.60	3.9%	1.60	3.9%	3.44	8.4%	3.65	8.9%
PG&E Corp	pcg	60.77	2.90	4.8%	3.65	6.0%	8.55	14.1%	9.60	15.8%
Pinnacle West	pnw	78.03	3.90	5.0%	4.30	5.5%	9.25	11.9%	9.90	12.7%
Portland General	por	43.33	2.10	4.8%	2.30	5.3%	5.70	13.2%	6.10	14.1%
P.S. Enterprise Gp	peg	43.88	2.75	6.3%	2.85	6.5%	5.85	13.3%	6.15	14.0%
SCANA Corp	scg	73.28	4.00	5.5%	4.15	5.7%	7.05	9.6%	7.35	10.0%
Vectren Corp	vvc	52.15	2.55	4.9%	2.70	5.2%	5.69	10.9%	5.95	11.4%
Westar Energy	wr	56.35	2.43	4.3%	2.55	4.5%	4.83	8.6%	4.95	8.8%
Xcel Energy	xel	40.70	2.20	5.4%	2.30	5.7%	5.05	12.4%	5.50	13.5%
Mean				5.1%		5.4%		11.5%		12.3%
Harmonic Mean				5.0%		5.3%		11.2%		11.9%
Median				5.0%		5.4%		11.8%		12.6%
Max				6.3%		6.5%		14.9%		16.4%
Min				3.9%		3.9%		8.4%		8.8%
Std Dev				0.6%		0.6%		1.9%		2.2%
Coefficient of Variation				11.2%		10.6%		16.8%		17.6%
Say				5.0%		5.3%		11.0%		12.0%

Source: Value Line / yr end stock price

SUPPORT FOR DIRECT CAPITALIZATION EQUITY COMPONENT

2017 Assessment Year

Company	Ticker	Stock Price	Enterprise Value	EBITDA Historical	Annual Change VL	EBITDA Forecast	EV / EBITDA Forecast
ALLETE Inc	ale	64.19	4,866,446,594	424,400,000	3.81%	440,584,746	11.05
Ameren Corp	aee	52.46	20,642,621,503	2,216,000,000	6.98%	2,370,682,853	8.71
Avista Corp	ava	39.99	4,392,106,116	454,728,000	2.04%	464,008,163	9.47
Centerpoint Energy	cnp	24.64	19,458,173,683	2,085,000,000	10.05%	2,294,633,152	8.48
CMS Energy Corp	cms	41.62	21,610,512,100	2,108,000,000	8.61%	2,289,426,230	9.44
Con. Edison	ed	73.68	38,545,323,895	3,791,000,000	6.41%	4,034,012,821	9.56
DTE Energy Co	dte	98.51	29,255,944,731	2,421,000,000	9.43%	2,649,396,226	11.04
Edison International	eix	71.99	38,014,148,720	4,190,000,000	5.29%	4,411,586,538	8.62
El Paso Electric	ee	46.50	3,302,242,439	322,926,000	5.04%	339,207,983	9.74
Eversource	es	55.23	27,637,703,176	2,575,325,000	8.00%	2,781,351,000	9.94
Great Plains Energy	gxp	27.35	8,216,068,837	1,067,800,000	4.48%	1,115,611,940	7.36
Idacorp Inc	ida	80.55	5,727,931,412	419,070,000	4.38%	437,423,431	13.09
NorthWestern Corp	nwe	56.87	4,626,770,001	405,283,000	3.79%	420,634,629	11.00
OGE Energy Corp	oge	33.45	9,483,997,194	841,500,000	13.29%	953,361,027	9.95
Otter Tail Corp	ottr	40.80	2,191,796,660	184,554,000	6.10%	195,820,378	11.19
PG&E Corp	pcg	60.77	49,823,364,994	4,932,000,000	12.28%	5,537,684,211	9.00
Pinnacle West	pnw	78.03	13,111,004,529	1,450,995,000	7.03%	1,552,956,811	8.44
Portland General	por	43.33	6,546,200,584	654,000,000	7.02%	699,894,737	9.35
P.S. Enterprise Gp	peg	43.88	34,201,726,046	3,052,000,000	5.13%	3,208,512,821	10.66
SCANA Corp	scg	73.28	17,656,251,678	1,599,000,000	4.26%	1,667,042,553	10.59
Vectren Corp	vvc	52.15	6,160,203,786	641,500,000	4.57%	670,812,830	9.18
Westar Energy	wr	56.35	11,587,372,472	1,047,116,000	2.48%	1,073,131,304	10.80
Xcel Energy	xel	40.70	36,186,887,757	3,532,607,000	8.91%	3,847,393,762	9.41
23.00		Mean				9.83	
Harmonic Mean						9.68	
Median						9.56	
Std Dev						1.23	

Source:

Say

8.80

Value Line & Morning Star

DATA INPUT

Washington State Department of Revenue

2017 Assessment Year

Electric Industry

Instructions: Data entered on this page will flow to the applicable worksheets.

Guideline Companies		Stock Price	Beta Levered	Financial Strength	Revenues	Cash Flow	Earnings	Dividends	Bk Value	Mkt/Bk	Common	LTD (BV)
Name	Ticker	Yahoo	V L	V L	Per Share	Per Share	Per Share	Per Share	Stock	Stock	Shares	V L
ALLETE Inc	ale	64.19	0.80	A	27.01	7.08	3.14	2.08	38.17	1.68	50,049,020	1,370,400,000
Ameren Corp	aee	52.46	0.70	A	25.04	6.59	2.68	1.72	29.27	1.79	242,634,798	6,595,000,000
Avista Corp	ava	39.99	0.70	A	22.10	4.90	2.05	1.37	25.55	1.57	64,184,399	1,729,800,000
Centerpoint Energy	cnp	24.64	0.85	B+	17.48	3.68	1.00	1.03	8.03	3.07	430,688,867	7,532,000,000
CMS Energy Corp	cms	41.62	0.65	B++	22.92	4.88	1.98	1.24	15.23	2.73	279,205,000	8,750,000,000
Con. Edison	ed	73.68	0.55	A+	39.35	7.80	3.95	2.68	46.80	1.57	304,727,523	13,747,000,000
DTE Energy Co	dte	98.51	0.65	B++	59.24	10.60	4.83	3.06	50.22	1.96	179,432,999	11,269,000,000
Edison International	eix	71.99	0.65	A	35.00	10.40	3.90	1.98	36.70	1.96	325,811,206	10,407,000,000
El Paso Electric	ee	46.50	0.70	B++	21.70	5.95	2.30	1.23	26.15	1.78	40,522,246	1,195,400,000
Eversource	es	55.23	0.70	A	23.80	5.00	2.95	1.78	33.80	1.63	316,885,808	9,235,100,000
Great Plains Energy	gxp	27.35	0.75	B+	12.43	3.35	1.61	1.06	24.73	1.11	215,384,601	3,365,200,000
Idacorp Inc	ida	80.55	0.75	A	24.80	6.85	3.90	2.08	42.65	1.89	50,401,768	1,745,500,000
NorthWestern Corp	nwe	56.87	0.70	B+	25.75	6.60	3.40	2.00	34.40	1.65	48,327,642	1,819,400,000
OGE Energy Corp	oge	33.45	0.95	A	11.31	3.31	1.69	1.16	17.24	1.94	199,703,952	2,405,800,000
Otter Tail Corp	ottr	40.80	0.85	A	20.42	3.44	1.60	1.25	17.03	2.40	39,410,825	505,300,000
PG&E Corp	pcg	60.77	0.65	B+	33.95	8.55	2.90	1.93	35.20	1.73	505,666,694	16,528,000,000
Pinnacle West	pnw	78.03	0.70	A+	31.40	9.25	3.90	2.56	42.60	1.83	111,306,107	4,145,400,000
Portland General	por	43.33	0.70	B++	21.35	5.70	2.10	1.26	26.20	1.65	88,926,854	2,325,000,000
P.S. Enterprise Gp	peg	43.88	0.70	A++	18.30	5.85	2.75	1.64	26.00	1.69	505,896,218	10,697,000,000
SCANA Corp	scg	73.28	0.65	B++	28.70	7.05	4.00	2.30	39.80	1.84	142,916,917	6,472,000,000
Vectren Corp	vvc	52.15	0.75	A	29.53	5.69	2.55	1.62	21.33	2.44	82,922,412	1,589,900,000
Westar Energy	wr	56.35	0.70	A	18.07	4.83	2.43	1.52	27.03	2.08	141,791,153	3,388,700,000
Xcel Energy	xel	40.70	0.60	A+	21.45	5.05	2.20	1.36	21.70	1.88	507,952,795	13,403,000,000

Average

Harmonic Mean

Median

Value Line West Jan 27, 2017
 Value Line East Feb 17, 2017
 Value Line Central Mar 17, 2017