

## COST OF CAPITAL STUDY

### YIELD CAPITALIZATION

2017 Assessment Year

APPENDIX C

### Power Industry

<b>EQUITY RATE</b>					<b>10.00%</b>		
<b>CAPITAL ASSET PRICING MODEL</b>						PAGE	
	CAPM Ex Ante		7.40%			4	
<b>DIVIDEND GROWTH MODELS</b>							
	Value Line, based on Dividends Growth		10.00%			6	
	Value Line, based on Earnings Growth		10.00%			7	
	Value Line, based on Return on Equity		7.50%			8	
			<b>RANGE</b>	7.40-10.00%			
<b>DEBT RATE</b>					<b>5.60%</b>	9	
<b>MARKET CAPITAL STRUCTURE</b>							
	Equity	45%	x	10.00%	=	4.50%	3
	Debt	55%	x	5.60%	=	3.08%	3
	Marginal Tax Rate	38%	=	(1-.38)	x	3.08%	
						<u>1.91%</u>	
<b>WEIGHTED AVERAGE COST OF CAPITAL</b>					<b>6.41%</b>		

# SUPPORT FOR GUIDELINE COMPANIES

Washington State Department of Revenue

2017 Assessment Year

Power 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
AES Corp	aes	1.15	B	nmf	4.8%	2,794,933,168	12.7%			19,160,000,000	87.3%	21,954,933,168
Calpine Corp	cpn	1.00	B+	41.4	nil	3,267,462,052	22.2%			11,431,000,000	77.8%	14,698,462,052
Dominion Resources Inc	D	0.70	B++	21.0	3.7%	14,603,285,695	33.7%			28,707,000,000	66.3%	43,310,285,695
Duke Energy	duk	0.60	A	18.6	4.3%	40,440,858,536	47.9%			43,964,000,000	52.1%	84,404,858,536
Dynegy Inc	dyn	1.40	C+	nmf	0.0%	1,642,208,652	15.2%	400,000,000	3.7%	8,778,000,000	81.1%	10,820,208,652
El Paso Electric	ee	0.70	B++	20.4	2.6%	1,059,656,733	47.0%			1,195,400,000	53.0%	2,255,056,733
Entergy Corp	etr	0.65	B++	10.9	4.7%	8,094,288,774	35.5%	203,200,000	0.9%	14,492,000,000	63.6%	22,789,488,774
Exelon Corp	exc	0.70	B++	20.0	3.6%	25,759,241,761	43.9%			32,972,000,000	56.1%	58,731,241,761
NextEra Energy	nee	0.65	A	21.4	2.9%	23,597,032,839	45.6%			28,195,000,000	54.4%	51,792,032,839
NRG Energy	nrg	1.25	B+	nmf	2.0%	4,447,732,355	19.5%	298,000,000	1.3%	18,006,000,000	79.1%	22,751,732,355
Pattern Energy	pegi	1.25	B+	nmf	8.2%	987,736,277	42.5%			1,335,000,000	57.5%	2,322,736,277
Sempra Energy	sre	0.80	A	25.7	3.0%	12,353,012,066	47.7%	20,000,000	0.1%	13,522,000,000	52.2%	25,895,012,066
Southern Co	so	0.55	A	16.7	4.4%	28,027,985,128	39.4%	1,508,000,000	2.1%	41,550,000,000	58.5%	71,085,985,128
TransAlta Corp	tac	0.85	C++	17.4	2.9%	2,406,736,490	34.9%	771,000,000	11.2%	3,722,000,000	53.9%	6,899,736,490
<b>Mean</b>		<b>0.88</b>		<b>21.4</b>	<b>3.6%</b>	<b>12,105,869,323</b>	<b>34.8%</b>		<b>3.2%</b>	<b>19,073,528,571</b>	<b>63.8%</b>	
<b>Harmonic Mean</b>		<b>0.80</b>					<b>28.9%</b>		<b>0.4%</b>		<b>61.8%</b>	
<b>Weighted Mean</b>						<b>169,482,170,526</b>	<b>38.5%</b>	<b>3,200,200,000</b>	<b>0.7%</b>	<b>267,029,400,000</b>	<b>60.7%</b>	<b>439,711,770,526</b>
<b>Median</b>		<b>0.75</b>			<b>3.6%</b>		<b>37.5%</b>		<b>1.7%</b>		<b>58.0%</b>	

# SUPPORT FOR CAPITAL STRUCTURE Market Value

Washington State Department of Revenue

2017 Assessment Year

Power Industry

Company	Ticker	Stock Price	Common Shares	Common Stock	%	Preferred Stock	%	Long Term Debt	%	Total Debt & Equity
AES Corp	aes	11.620	659,182,351	7,659,698,919	26.6%	-		21,087,000,000	73.4%	28,746,698,919
Calpine Corp	cpn	11.430	359,061,764	4,104,075,963	25.4%	-		12,046,000,000	74.6%	16,150,075,963
Dominion Resource	D	76.590	626,750,459	48,002,817,655	58.8%	-		33,584,000,000	41.2%	81,586,817,655
Duke Energy	duk	77.620	688,941,372	53,475,629,295	52.1%	-		49,161,000,000	47.9%	102,636,629,295
Dynegy Inc	dyn	8.460	117,300,618	992,363,228	9.4%	400,000,000	3.8%	9,203,000,000	86.9%	10,595,363,228
El Paso Electric	ee	46.500	40,522,246	1,884,284,439	57.1%	-		1,417,958,000	42.9%	3,302,242,439
Entergy Corp	etr	73.470	179,394,698	13,180,128,462	47.3%	203,200,000	0.7%	14,467,655,000	51.9%	27,850,983,462
Exelon Corp	exc	35.490	923,270,314	32,766,863,444	48.5%	-		34,813,000,000	51.5%	67,579,863,444
NextEra Energy	nee	119.460	467,267,977	55,819,832,532	63.8%	-		31,623,000,000	36.2%	87,442,832,532
NRG Energy	nrg	12.260	315,442,011	3,867,319,055	17.0%	298,000,000	1.3%	18,600,000,000	81.7%	22,765,319,055
Pattern Energy	pegi	18.990	87,410,290	1,659,921,407	54.2%	-		1,400,000,000	45.8%	3,059,921,407
Sempra Energy	sre	100.640	250,060,973	25,166,136,323	60.9%	20,000,000	0.0%	16,122,000,000	39.0%	41,308,136,323
Southern Co	so	50.760	979,999,480	49,744,773,605	51.0%	1,508,000,000	1.5%	46,286,000,000	47.5%	97,538,773,605
TransAlta Corp	tac	5.500	288,231,915	1,585,275,533	23.9%	771,000,000	11.6%	4,271,000,000	64.4%	6,627,275,533
<b>Mean</b>					<b>42.6%</b>				<b>3.2%</b>	<b>56.1%</b>
<b>Harmonic Mean</b>					<b>31.1%</b>				<b>0.3%</b>	<b>51.9%</b>
<b>Weighted Mean</b>			<b>299,909,119,858</b>	<b>50.2%</b>	<b>3,200,200,000</b>	<b>0.5%</b>	<b>294,081,613,000</b>	<b>49.2%</b>	<b>597,190,932,858</b>	
<b>Median</b>					<b>49.7%</b>				<b>1.4%</b>	<b>49.7%</b>
<b>Std Dev</b>					<b>18.1%</b>				<b>4.3%</b>	<b>16.8%</b>
<b>Coefficient of Variation</b>					<b>42.6%</b>				<b>136.5%</b>	<b>30.0%</b>
<b>Target</b>					<b>45%</b>				<b>55%</b>	<b>100%</b>

# SUPPORT FOR YIELD CAPITALIZATION EQUITY COMPONENT CAPITAL ASSET PRICING MODEL

2017 Assessment Year

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

<b>Ke = Cost of Equity</b>				<b>7.40%</b>
				to page 1
	Rm =	rate of return	8.50%	
	Rf =	risk free rate	3.00%	
	Rp =	risk premium	5.50%	
	B =	Beta	0.80	page 7
<b>Rp = Risk Premium</b>				<b>5.50%</b>
				to above
	<b>Shannon Pratt and Roger Grabowski</b>		3.50% - 6.00%	
	Cost of Capital, Applications and Examples, 3rd Ed, 2008			
	<b>Dr. Aswath Damodaran</b>		5.69%	chart page 13
	<a href="http://pages.stern.nyu.edu/~adamodar/">http://pages.stern.nyu.edu/~adamodar/</a>		5.14%	adjusted for Rf
	2016 Implied Premium			
	<b>John Graham &amp; Campbell Harvey</b>		5.70%	10 year expected real ret
	<b>Duke CFO magazine Global Business Outlook survey - U.S.</b>		2.23%	Rf rate used in survey
	4th Qtr 2016		4.93%	adjusted for Rf
<b>Rf = Risk Free Rate</b>				<b>3.00%</b>
	<b>2016 Valuation Handbook</b>			to above
	as of 12-30-16	Long Term (20 years) US Treasury Bond Yield	2.79%	
	<b>Value Line Investment Survey, Selected Yields January 6, 2017, page 3197</b>			
	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%	
	<b>Federal Reserve Statistical Release (<a href="http://www.federalreserve.gov/Releases/H15/Current/">http://www.federalreserve.gov/Releases/H15/Current/</a>)</b>			
	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
<b>Inflation</b>				<b>2.00%</b>
	<b>Value Line Investment Survey, Economic Series January 6, 2017, page 1500</b>			
		Consumer Price Index Annual Rate of Change 2019-2021	2.50%	
	<b>Federal Reserve Bank of Philadelphia</b>			
	The Livingston Survey December 9, 2016		Table 3	
	Inflation median (measured by the CPI) over next 10 years		2.30%	
	<a href="https://www.philadelphiafed.org/research-and-data/real-time-center/livingston-survey">https://www.philadelphiafed.org/research-and-data/real-time-center/livingston-survey</a>			
<b>Nominal Gross Domestic Product (GDP)</b>				<b>3.80%</b>
	<b>Federal Reserve Projected Long Run Real GDP Growth</b>			
	Median Projection Value From Dec 14, 2016 Report		1.80%	
	<a href="http://www.federalreserve.gov/monetarypolicy/fomccalendars.htm">http://www.federalreserve.gov/monetarypolicy/fomccalendars.htm</a>			
	<b>Congressional Budget Office Real GDP Economic Projections</b>			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%	
	<a href="http://www.cbo.gov/publication/51129">http://www.cbo.gov/publication/51129</a>			
	<b>Federal Reserve Bank of Philadelphia</b>			
	The Livingston Survey, December 9, 2016			pg 4
	Average Annual Real GDP Growth Rate for Next Ten Years		2.20%	
	<a href="https://www.philadelphiafed.org/research-and-data/real-time-center/livingston-survey">https://www.philadelphiafed.org/research-and-data/real-time-center/livingston-survey</a>			

## SUPPORT FOR YIELD CAPITALIZATION EQUITY COMPONENT DIVIDEND GROWTH MODEL

Washington State Department of Revenue

2017 Assessment Year

Power Industry

### Based on Dividend Growth

$$K_e = (D_1 / P_0) + G$$

$K_e$  = Cost of Equity  
 $D_1$  = Expected Dividends  
 $P_0$  = 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 Growth Adj
AES Corp	aes	11.620	0.61	5.25%	18.50%	23.75%	nmf
Calpine Corp	cpn	11.430	nil	nmf	nil	nmf	nmf
Dominion Resources Inc	D	76.590	3.02	3.94%	8.00%	11.94%	11.58%
Duke Energy	duk	77.620	3.48	4.48%	3.50%	7.98%	8.57%
Dynegy Inc	dyn	8.460	0.00		N/A	N/A	N/A
El Paso Electric	ee	46.500	1.30	2.80%	7.00%	9.80%	9.49%
Entergy Corp	etr	73.470	3.50	4.76%	2.00%	6.76%	8.57%
Exelon Corp	exc	35.490	1.29	3.63%	4.00%	7.63%	nmf
NextEra Energy	nee	119.460	3.92	3.28%	9.50%	12.78%	11.78%
NRG Energy	nrg	12.260	0.28	2.28%	-2.50%	nmf	nmf
Pattern Energy	pegi	18.990	1.62	8.53%	9.00%	17.53%	nmf
Sempra Energy	sre	100.640	3.28	3.26%	7.00%	10.26%	9.15%
Southern Co	so	50.760	2.30	4.53%	3.50%	8.03%	8.09%
TransAlta Corp	tac	5.500	0.16	2.91%	-21.50%	nmf	nmf
<b>Mean</b>						<b>11.65%</b>	<b>9.61%</b>
<b>Harmonic Mean</b>						<b>10.11%</b>	<b>9.43%</b>
<b>Median</b>						<b>10.03%</b>	<b>9.15%</b>
<b>Max</b>						<b>23.75%</b>	<b>11.78%</b>
<b>Min</b>						<b>6.76%</b>	<b>8.09%</b>
<b>Std Dev</b>						<b>5.32%</b>	<b>1.49%</b>
<b>Coefficient of Variation</b>						<b>45.63%</b>	<b>15.49%</b>
<b>Say</b>							<b>10.00%</b>

## SUPPORT FOR YIELD CAPITALIZATION EQUITY COMPONENT DIVIDEND GROWTH MODEL

Washington State Department of Revenue

2017 Assessment Year

Power 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
AES Corp	aes	11.620	0.61	5.25%	7.00%	nmf	nmf
Calpine Corp	cpn	11.430	nil	nmf	nil	nmf	nmf
Dominion Resources	D	76.590	3.02	3.94%	5.50%	9.44%	nmf
Duke Energy	duk	77.620	3.48	4.48%	5.00%	9.48%	9.54%
Dynegy Inc	dyn	8.460	0.00		N/A	N/A	N/A
El Paso Electric	ee	46.500	1.30	2.80%	4.00%	6.80%	7.43%
Entergy Corp	etr	73.470	3.50	4.76%	-2.50%	nmf	nmf
Exelon Corp	exc	35.490	1.29	3.63%	5.00%	8.63%	12.37%
NextEra Energy	nee	119.460	3.92	3.28%	6.00%	9.28%	8.53%
NRG Energy	nrg	12.260	0.28	2.28%	nmf	nmf	nmf
Pattern Energy	pegi	18.990	1.62	8.53%	nmf	nmf	nmf
Sempra Energy	sre	100.640	3.28	3.26%	8.00%	11.26%	8.54%
Southern Co	so	50.760	2.30	4.53%	4.50%	9.03%	9.26%
TransAlta Corp	tac	5.500	0.16	2.91%	22.00%	24.91%	15.01%
<b>Mean</b>						<b>11.10%</b>	<b>10.10%</b>
<b>Harmonic Mean</b>						<b>9.74%</b>	<b>9.60%</b>
<b>Median</b>						<b>9.36%</b>	<b>9.26%</b>
<b>Max</b>						<b>24.91%</b>	<b>15.01%</b>
<b>Min</b>						<b>6.80%</b>	<b>7.43%</b>
<b>Std Dev</b>						<b>5.71%</b>	<b>2.66%</b>
<b>Coefficient of Variation</b>						<b>51.42%</b>	<b>26.30%</b>
<b>Say</b>							<b>10.00%</b>

# SUPPORT FOR YIELD CAPITALIZATION EQUITY COMPONENT

## DIVIDEND GROWTH MODEL

Washington State Department of Revenue

2017 Assessment Year

Power Industry

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

**K<sub>e</sub>** = Cost of Equity  
**D1** = Expected Dividends  
**E1** = Expected Earnings  
**P<sub>o</sub>** = Current Price  
**G** = Sustainable Growth  
**b** = Retained Earnings % = (1-Payout Ratio)  
**ROE** = Return on Equity = (E1/P<sub>o</sub>)

Company	Ticker	Stock Price (P <sub>o</sub> )	Expected Dividend (D1)	Expected Earnings (E1)	Dividend Yield (D1/P <sub>o</sub> )	Retained Earnings (b)	ROE (E1/P <sub>o</sub> )	Growth (b*ROE)	K <sub>e</sub> Dividends	K <sub>e</sub> Earnings
AES Corp	aes	11.620	0.61	1.10	5.25%	nmf	9.47%	nmf	nmf	nmf
Calpine Corp	cpn	11.430	nil	0.50	nmf	nmf	4.37%	nmf	nmf	nmf
Dominion Resources	D	76.590	3.02	3.40	3.94%	22.0%	4.44%	0.98%	4.92%	5.42%
Duke Energy	duk	77.620	3.48	4.80	4.48%	21.0%	6.18%	1.30%	5.78%	7.48%
Dynegy Inc	dyn	8.460	0.00	0.00					nmf	nmf
El Paso Electric	ee	46.500	1.30	2.45	2.80%	47.0%	5.27%	2.48%	5.27%	7.75%
Entergy Corp	etr	73.470	3.50	4.85	4.76%	50.0%	6.60%	3.30%	8.06%	9.90%
Exelon Corp	exc	35.490	1.29	2.65	3.63%	32.0%	7.47%	2.39%	6.02%	9.86%
NextEra Energy	nee	119.460	3.92	6.55	3.28%	42.0%	5.48%	2.30%	5.58%	7.79%
NRG Energy	nrg	12.260	0.28	0.35	2.28%	nmf	2.85%	nmf	nmf	nmf
Pattern Energy	pegi	18.990	1.62	0.25	8.53%	nmf	1.32%	nmf	nmf	nmf
Sempra Energy	sre	100.640	3.28	5.20	3.26%	23.0%	5.17%	1.19%	4.45%	6.36%
Southern Co	so	50.760	2.30	2.95	4.53%	19.0%	5.81%	1.10%	5.64%	6.92%
TransAlta Corp	tac	5.500	0.16	0.50	2.91%	nmf	9.09%	nmf	nmf	nmf
<b>Mean</b>									<b>5.72%</b>	<b>7.68%</b>
<b>Harmonic Mean</b>									<b>5.57%</b>	<b>7.41%</b>
<b>Median</b>									<b>5.61%</b>	<b>7.61%</b>
<b>Std Dev</b>									<b>1.07%</b>	<b>1.57%</b>
<b>Coefficient of Variation</b>									<b>18.79%</b>	<b>20.40%</b>
<b>Say</b>									<b>7.50%</b>	

## SUPPORT FOR DEBT RATING AND DEBT YIELD |

Washington State Department of Revenue

2017 Assessment Year

Power Industry

Company	Ticker	Mergent's Ratings	S&P Ratings
AES Corp	aes	Ba3	BB
Calpine Corp	cpn	B2	B+
Dominion Resources	D	Baa2	BBB+
Duke Energy	duk	Baa1	A-
Dynegy Inc	dyn	B3	B+
El Paso Electric	ee	Baa1	BBB
Entergy Corp	etr	Baa3	BBB+
Exelon Corp	exc	Baa2	BBB
NextEra Energy	nee	Baa1	A-
NRG Energy	nrg	B1	BB-
Pattern Energy	pegi		BB-
Sempra Energy	sre	Baa1	BBB+
Southern Co	so	Baa2	A-
TransAlta Corp	tac		BBB-
<b>Overall Average Debt Rating</b>		<b>Baa3</b>	<b>BBB-</b>

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%
<b>4th Qtr Average</b>	<b>3.81%</b>	<b>3.89%</b>	<b>4.06%</b>	<b>4.64%</b>
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%
<b>4th Qtr Average</b>		<b>3.87%</b>	<b>4.04%</b>	<b>4.59%</b>

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%
<b>4th Qtr Average</b>	<b>3.81%</b>	<b>3.91%</b>	<b>4.07%</b>	<b>4.67%</b>

	Ave YTM	Med YTM
Moody's Long Term Bond Yield	Baa3	<b>5.52%</b>
S&P's Long Term Bond Yield	BBB-	<b>5.73%</b>

Bloomberg Dec	20y	25Y	30Y
BBB-	<b>5.54%</b>	<b>5.61%</b>	<b>5.35%</b>

**Debt Yield Rate 5.60%**

to page 1



## SUPPORT FOR DIRECT CAPITALIZATION EQUITY COMPONENT

2017 Assessment Year

Power 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	
AES Corp	aes	11.62	(1.71)	nmf	1.10	9.5%	1.85	15.9%	2.95	25.4%
Calpine Corp	cpn	11.43	0.26	2.3%	0.50	4.4%	2.10	18.4%	2.55	22.3%
Dominion Resources Inc	D	76.59	3.44	4.5%	3.40	4.4%	6.35	8.3%	6.75	8.8%
Duke Energy	duk	77.62	4.25	5.5%	4.80	6.2%	9.70	12.5%	10.60	13.7%
Dynegy Inc	dyn	8.46	(5.46)	nmf	-	nmf	(0.13)	nmf	-	nmf
El Paso Electric	ee	46.50	2.30	4.9%	2.45	5.3%	5.95	12.8%	6.25	13.4%
Entergy Corp	etr	73.47	6.88	9.4%	4.85	6.6%	18.72	25.5%	17.20	23.4%
Exelon Corp	exc	35.49	1.80	5.1%	2.65	7.5%	7.85	22.1%	8.70	24.5%
NextEra Energy	nee	119.46	5.78	4.8%	6.55	5.5%	12.60	10.5%	13.55	11.3%
NRG Energy	nrg	12.26	(2.22)	nmf	0.35	2.9%	2.10	17.1%	4.20	34.3%
Pattern Energy	pegi	18.99	(0.22)	nmf	0.25	1.3%	1.80	9.5%	2.30	12.1%
Sempra Energy	sre	100.64	3.85	3.8%	5.20	5.2%	9.25	9.2%	11.00	10.9%
Southern Co	so	50.76	2.70	5.3%	2.95	5.8%	5.30	10.4%	5.85	11.5%
TransAlta Corp	tac	5.50	0.41	7.5%	0.50	9.1%	2.50	45.5%	2.65	48.2%
		<b>Mean</b>		<b>5.3%</b>		<b>5.7%</b>		<b>16.7%</b>		<b>20.0%</b>
		<b>Harmonic Mean</b>		<b>4.7%</b>		<b>4.4%</b>		<b>13.5%</b>		<b>15.7%</b>
		<b>Median</b>		<b>5.0%</b>		<b>5.5%</b>		<b>12.8%</b>		<b>13.7%</b>
		<b>Max</b>		<b>9.4%</b>		<b>9.5%</b>		<b>45.5%</b>		<b>48.2%</b>
		<b>Min</b>		<b>2.3%</b>		<b>1.3%</b>		<b>8.3%</b>		<b>8.8%</b>
		<b>Std Dev</b>		<b>1.9%</b>		<b>2.3%</b>		<b>10.1%</b>		<b>11.4%</b>
		<b>Coefficient of Variation</b>		<b>36.4%</b>		<b>39.9%</b>		<b>60.4%</b>		<b>57.1%</b>
		<b>Say</b>		<b>4.7%</b>		<b>4.4%</b>		<b>13.0%</b>		<b>14.0%</b>

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	
AES Corp	aes	11.62	27,607,698,919	3,415,000,000	59.46%	5,445,540,541	5.07	
Calpine Corp	cpn	11.43	15,420,075,963	1,749,000,000	21.43%	2,123,785,714	7.26	
Dominion Resource	D	76.59	81,586,817,655	5,476,000,000	6.30%	5,820,944,882	14.02	
Duke Energy	duk	77.62	102,636,629,295	9,221,000,000	9.28%	10,076,556,701	10.19	
Dynegy Inc	dyn	8.46	8,524,363,228	70,000,000				
El Paso Electric	ee	46.50	3,302,242,439	322,926,000	5.04%	339,207,983	9.74	
Entergy Corp	etr	73.47	27,366,811,462	1,236,826,000	-8.12%	1,136,399,957	24.08	
Exelon Corp	exc	35.49	67,579,863,444	8,688,000,000	10.83%	9,628,738,854	7.02	
NextEra Energy	nee	119.46	87,442,832,532	7,685,000,000	7.54%	8,264,424,603	10.58	
NRG Energy	nrg	12.26	20,752,319,055	2,034,000,000	100.00%	4,068,000,000	5.10	
Pattern Energy	pegi	18.99	3,059,921,407	411,490,000	27.78%	525,792,778	5.82	
Sempra Energy	sre	100.64	41,308,136,323	2,933,000,000	18.92%	3,487,891,892	11.84	
Southern Co	so	50.76	97,538,773,605	7,552,000,000	10.38%	8,335,698,113	11.70	
TransAlta Corp	tac	5.50	6,290,275,533	1,142,000,000	6.00%	1,210,520,000	5.20	
<b>14</b>		<b>Mean</b>					<b>9.82</b>	
		<b>Harmonic Mean</b>					<b>8.04</b>	
		<b>Median</b>					<b>9.74</b>	
		<b>Std Dev</b>					<b>5.21</b>	
Source:		<b>Say</b>					<b>6.00</b>	

Value Line & Morning Star

## DATA INPUT

Washington State Department of Revenue

2017 Assessment Year

Power 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	Common	LTD (BV)
Name	Ticker	Yahoo	V L	V L	Per Share	Per Share	Per Share	Per Share	Stock	Shares	V L
AES Corp	aes	11.62	1.15	B	20.61	1.85	(1.71)	0.56	4.24	659,182,351	19,160,000,000
Calpine Corp	cpn	11.43	1.00	B+	18.71	2.10	0.26		9.10	359,061,764	11,431,000,000
Dominion Resources Inc	D	76.59	0.70	B++	18.70	6.35	3.44	2.80	23.30	626,750,459	28,707,000,000
Duke Energy	duk	77.62	0.60	A	34.10	9.70	4.25	3.36	58.70	688,941,372	43,964,000,000
Dynegy Inc	dyn	8.46	1.40	C+	36.81	(0.13)	(5.46)		14.00	117,300,618	8,778,000,000
El Paso Electric	ee	46.50	0.70	B++	21.70	5.95	2.30	1.23	26.15	40,522,246	1,195,400,000
Energy Corp	etr	73.47	0.65	B++	60.55	18.72	6.88	3.42	45.12	179,394,698	14,492,000,000
Exelon Corp	exc	35.49	0.70	B++	33.90	7.85	1.80	1.26	27.90	923,270,314	32,972,000,000
NextEra Energy	nee	119.46	0.65	A	33.50	12.60	5.78	3.48	50.50	467,267,977	28,195,000,000
NRG Energy	nrg	12.26	1.25	B+	39.15	2.10	(2.22)	0.24	14.10	315,442,011	18,006,000,000
Pattern Energy	pegi	18.99	1.25	B+	4.05	1.80	(0.22)	1.56	11.30	87,410,290	1,335,000,000
Sempra Energy	sre	100.64	0.80	A	39.85	9.25	3.85	3.02	49.40	250,060,973	13,522,000,000
Southern Co	so	50.76	0.55	A	19.35	5.30	2.70	2.22	28.60	979,999,480	41,550,000,000
TransAlta Corp	tac	5.50	0.85	C++	8.32	2.50	0.41	0.16	8.35	288,231,915	3,722,000,000

**Average**

**Harmonic Mean**

**Median**

Value Line Jan-Mar 2017