

# COST OF CAPITAL STUDY

YIELD CAPITALIZATION

2024 Assessment Year

APPENDIX C

## Power Industry

<b>EQUITY RATE</b>						<b>9.00%</b>	
<b>CAPITAL ASSET PRICING MODEL</b>							PAGE
	CAPM Ex Ante		8.70%				4
<b>DIVIDEND GROWTH MODELS Single Stage</b>							
	Value Line, based on Dividends Growth		9.25%				5
	Value Line, based on Earnings Growth		11.25%				6
	Value Line, based on Return on Equity		9.00%				7
<b>FCFE GROWTH MODEL Multi Stage</b>							8
			9.00%				
				<b>RANGE</b>	8.7025% - 11.25%		
<b>DEBT YIELD RATE</b>						<b>6.00%</b>	9
<b>Cost of Secured Debt (Operating Lease) Rate</b>						<b>5.00%</b>	9
<b>MARKET CAPITAL STRUCTURE</b>							
	Equity	60%	x	9.00%	=	5.40%	3
	Debt	40%	x	6.00%	=	2.40%	3
	Marginal Tax Rate	24%	=	(1-.24)	x	2.40%	
						<u>1.82%</u>	
<b>WEIGHTED AVERAGE COST OF CAPITAL</b>						<b>7.22%</b>	

# SUPPORT FOR GUIDELINE COMPANIES

Washington State Department of Revenue

2024 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	13.9	3.5%	2,485,000,000	9.8%			22,746,000,000	90.2%	25,231,000,000
Exelon Corp	exc	NMF	B++	16.0	4.1%	25,372,500,000	39.2%			39,431,000,000	60.8%	64,803,500,000
NextEra Energy Inc	nee	1.00	A	18.7	3.1%	47,503,800,000	43.6%			61,405,000,000	56.4%	108,908,800,000
NRG Energy Inc	nrg	1.10	B+	NMF	2.9%	nmf		230,000,000		10,299,000,000		nmf
Southern Co	so	0.95	A	13.6	4.0%	29,960,000,000	36.6%	291,000,000	0.4%	51,606,000,000	63.0%	81,857,000,000
Vistra Corp	vst	1.05	B+	15.5	nmf	5,307,046,000	30.5%			12,116,000,000	69.5%	17,423,046,000
<b>Mean</b>		<b>1.05</b>		<b>15.5</b>	<b>3.5%</b>	<b>22,125,669,200</b>	<b>31.9%</b>		<b>0.4%</b>	<b>32,933,833,333</b>	<b>68.0%</b>	
<b>Harmonic Mean</b>		<b>1.05</b>							<b>0.4%</b>		<b>66.2%</b>	
<b>Weighted Mean</b>						<b>110,628,346,000</b>	<b>37.1%</b>	<b>521,000,000</b>	<b>0.2%</b>	<b>197,603,000,000</b>	<b>66.3%</b>	<b>298,223,346,000</b>
<b>Median</b>		<b>1.05</b>			<b>3.5%</b>				<b>0.4%</b>		<b>63.0%</b>	

# SUPPORT FOR CAPITAL STRUCTURE Market Value

Washington State Department of Revenue

2024 Assessment Year

Power Industry

Company	Ticker	Stock Price	Common Shares	Common Stock	%	Preferred Stock	%	Long Term Debt	%	Total Debt & Equity
AES Corp	aes	19.05	710,000,000	13,525,500,000	33.9%	-		26,384,000,000	66.1%	39,909,500,000
Exelon Corp	exc	35.52	995,000,000	35,342,400,000	48.7%	-		37,246,000,000	51.3%	72,588,400,000
NextEra Energy Inc	nee	60.19	2,052,000,000	123,509,880,000	65.8%	-		64,103,000,000	34.2%	187,612,880,000
NRG Energy Inc	nrg	51.31	208,130,000	10,679,150,300	49.7%	230,000,000	1.1%	10,574,000,000	49.2%	21,483,150,300
Southern Co	so	69.39	1,070,000,000	74,247,300,000	57.3%	291,000,000	0.2%	55,000,000,000	42.5%	129,538,300,000
Vistra Corp	vst	38.52	351,460,000	13,538,239,200	48.6%	-		14,314,000,000	51.4%	27,852,239,200
<b>Mean</b>					<b>50.7%</b>				<b>49.1%</b>	
<b>Harmonic Mean</b>					<b>48.6%</b>				<b>47.2%</b>	
			<b>Weighted Mean</b>	<b>270,842,469,500</b>	<b>56.5%</b>	<b>521,000,000</b>	<b>0.1%</b>	<b>207,621,000,000</b>	<b>43.3%</b>	<b>478,984,469,500</b>
<b>Median</b>					<b>49.2%</b>				<b>50.3%</b>	
<b>Std Dev</b>					<b>10.6%</b>				<b>10.6%</b>	
<b>Coefficient of Variation</b>					<b>21.0%</b>				<b>21.7%</b>	
<b>Target</b>					<b>60%</b>				<b>40%</b>	<b>100%</b>

**SUPPORT FOR YIELD CAPITALIZATION EQUITY COMPONENT  
CAPITAL ASSET PRICING MODEL**

2024 Assessment Year

**Ex Ante**

**Ke = Rf + B (Rp)**

**Ke = Cost of Equity** **8.70%**

	Rm =	rate of return	8.48%	
	Rf =	risk free rate	4.03%	
	Rp =	risk premium	4.45%	
	B =	Beta	1.05	page 7

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**Rp = Risk Premium** **4.45%**

<b>Shannon Pratt and Roger Grabowski</b>	3.50% - 6.00%	
Cost of Capital, App & Exam, 5th Ed, 2014		
<b>Dr. Aswath Damodaran</b>	4.60%	chart page 15
<a href="http://pages.stern.nyu.edu/~adamodar/">http://pages.stern.nyu.edu/~adamodar/</a>	4.45%	adjusted for Rf
2023 Implied Premium		

to above

**Rf = Risk Free Rate** **4.03%**

<b>Value Line Investment Survey, Selected Yields January 12, 2024, page 829</b>			
as of 12-29-23			
US Treasury Securities year end data			
	5 year	3.84%	
	10 year	3.88%	
	30 year	4.03%	
	30 year Zero	4.00%	

to above

**Federal Reserve Statistical Release (<http://www.federalreserve.gov/Releases/H15/Current/>)**

As of 12-29-23			
Treasury Constant Maturities			
	5 year	3.84%	
	10 year	3.88%	
	20 year	4.20%	
	30 year	4.03%	
	20 year TIPS	<u>1.82%</u>	2.38%
	30 year TIPS	<u>1.90%</u>	2.13%
			TIPS inflation indication

**Inflation** **2.13%**

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**The Livingston Survey December 15, 2023, page 2, 8**

Inflation median (measured by the Consumer Price Index) over next 10 years	2.26%
<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>	

**Gross Domestic Product (GDP) Nominal** **3.93%**

real GDP + inflation est

**Federal Reserve Projected Long Run Real GDP Growth**

Median Projection Value From Dec 13, 2023 Report	1.80%
<a href="https://www.federalreserve.gov/monetarypolicy/files/fomcprojt20231213.pdf">https://www.federalreserve.gov/monetarypolicy/files/fomcprojt20231213.pdf</a>	

**Congressional Budget Office Real GDP Economic Projections**

The Budget and Economic Outlook 2024-2034		
Average Percentage Change Year To Year	2024-2028	2.20%
	2029-2034	1.90%
<a href="https://www.cbo.gov/system/files/2024-02/59710-Outl">https://www.cbo.gov/system/files/2024-02/59710-Outl</a>		

Table 2.3, pg 55

**Federal Reserve Bank of Philadelphia**

The Livingston Survey, December 15, 2023, page 8

## SUPPORT FOR YIELD CAPITALIZATION EQUITY COMPONENT DIVIDEND GROWTH MODEL

Washington State Department of Revenue  
2024 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 (P <sub>0</sub> )	Expected Dividend (D <sub>1</sub> )	Dividend Yield (D <sub>1</sub> /P <sub>0</sub> )	Dividend Growth (G)	Ke with Short Term Growth
AES Corp	aes	19.050	0.70	3.67%	3.50%	7.17%
Exelon Corp	exc	35.520	1.44	4.05%	NMF	NMF
NextEra Energy Inc	nee	60.190	2.06	3.42%	9.00%	12.42%
NRG Energy Inc	nrg	51.310	1.56	3.04%	4.00%	7.04%
Southern Co	so	69.390	2.86	4.12%	3.50%	7.62%
Vistra Corp	vst	38.520	0.90	2.34%	11.00%	13.34%
<b>Mean</b>						<b>9.52%</b>
<b>Harmonic Mean</b>						<b>8.80%</b>
<b>Median</b>						<b>7.62%</b>
<b>Max</b>						<b>13.34%</b>
<b>Min</b>						<b>7.04%</b>
<b>Std Dev</b>						<b>3.09%</b>
<b>Coefficient of Variation</b>						<b>32.48%</b>
<b>Say</b>						<b>9.25%</b>

## SUPPORT FOR YIELD CAPITALIZATION EQUITY COMPONENT DIVIDEND GROWTH MODEL

Washington State Department of Revenue

2024 Assessment Year

Power Industry

### Based on Earnings Growth

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

Ke = Cost of Equity  
 D1 = Expected Dividends  
 Po = 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
AES Corp	aes	19.050	0.70	3.67%	NMF	NMF
Exelon Corp	exc	35.520	1.44	4.05%	NMF	NMF
NextEra Energy Inc	nee	60.190	2.06	3.42%	8.50%	11.92%
NRG Energy Inc	nrg	51.310	1.56	3.04%	-2.00%	NMF
Southern Co	so	69.390	2.86	4.12%	6.50%	10.62%
Vistra Corp	vst	38.520	0.90	2.34%	NMF	NMF
<b>Mean</b>						<b>11.27%</b>
<b>Harmonic Mean</b>						<b>11.23%</b>
<b>Median</b>						<b>11.27%</b>
<b>Max</b>						<b>11.92%</b>
<b>Min</b>						<b>10.62%</b>
<b>Std Dev</b>						<b>0.92%</b>
<b>Coefficient of Variation</b>						<b>8.16%</b>
<b>Say</b>						<b>11.25%</b>

# SUPPORT FOR YIELD CAPITALIZATION EQUITY COMPONENT DIVIDEND GROWTH MODEL

Washington State Department of Revenue

2024 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	19.050	0.70	0.50	3.67%	95.9%	2.62%	2.52%	6.19%	5.14%
Exelon Corp	exc	35.520	1.44	2.45	4.05%	40.0%	6.90%	2.76%	6.81%	9.66%
NextEra Energy Inc	nee	60.190	2.06	3.40	3.42%	41.0%	5.65%	2.32%	5.74%	7.96%
NRG Energy Inc	nrg	51.310	1.56	3.50	3.04%	NMF	6.82%	NMF	NMF	NMF
Southern Co	so	69.390	2.86	4.00	4.12%	23.0%	5.76%	1.33%	5.45%	7.09%
Vistra Corp	vst	38.520	0.90	4.20	2.34%	80.0%	10.90%	8.72%	11.06%	19.63%
<b>Mean</b>									<b>7.05%</b>	<b>9.90%</b>
<b>Harmonic Mean</b>									<b>6.61%</b>	<b>8.12%</b>
<b>Median</b>									<b>6.19%</b>	<b>7.96%</b>
<b>Std Dev</b>									<b>2.30%</b>	<b>5.68%</b>
<b>Coefficient of Variation</b>									<b>32.62%</b>	<b>57.37%</b>

**Say 9.00%**

**SUPPORT FOR YIELD CAPITALIZATION EQUITY COMPONENT  
FREE CASH FLOW TO EQUITY MODEL MULTI STAGE**

Washington State Department of Revenue

2024 Assessment Year

Power Industry

Company	Ticker	Stock Price	Expected Earnings	P/E	Payout Ratio	ROE	Ke
AES Corp	aes	19.05	0.50	38.10	NMF	7.00%	3.73%
Exelon Corp	exc	35.52	2.45	14.50	60.00%	10.00%	10.60%
NextEra Energy Inc	nee	60.19	3.40	17.70	61.00%	14.00%	8.44%
NRG Energy Inc	nrg	51.31	3.50	14.66	46.00%	NMF	NMF
Southern Co	so	69.39	4.00	17.35	77.00%	13.00%	8.36%
Vistra Corp	vst	38.52	4.20	9.17	20.00%	25.50%	18.00%
<b>Mean</b>				<b>18.58</b>	<b>52.80%</b>	<b>13.90%</b>	<b>9.82%</b>
<b>Harmonic Mean</b>				<b>15.52</b>	<b>42.45%</b>	<b>11.62%</b>	<b>7.62%</b>
<b>Median</b>				<b>16.00</b>	<b>60.00%</b>	<b>13.00%</b>	<b>8.44%</b>
<b>Industry Summary</b>				<b>16.50</b>	<b>50.00%</b>	<b>13.00%</b>	
						<b>Say</b>	<b>9.00%</b>



## SUPPORT FOR DEBT RATING AND DEBT YIELD RATE

Washington State Department of Revenue

2024 Assessment Year

Power Industry

Company	Ticker	Mergent's Ratings	S&P Ratings
AES Corp	aes	Baa3	BBB-
Exelon Corp	exc	Baa2	BBB+
NextEra Energy Inc	nee	Baa1	A-
NRG Energy Inc	nrg	Ba1	BB
Southern Co	so	Baa2	BBB+
Vistra Corp	vst	Ba1	BB
<b>Overall Average Debt Rating</b>		<b>Baa3</b>	<b>BBB</b>

### Mergent's Bond Record January 2024, page 101

Corporate	Aaa	Aa	A	Baa
October	5.61%	5.97%	6.18%	6.63%
November	5.61%	5.57%	5.78%	6.19%
December	4.74%	5.05%	5.25%	5.64%
<b>4th Qtr Average</b>	<b>5.32%</b>	<b>5.53%</b>	<b>5.74%</b>	<b>6.15%</b>
Public Utilities	Aaa	Aa	A	Baa
October		6.19%	6.34%	6.61%
November		5.82%	5.96%	6.20%
December		5.27%	5.42%	5.68%
<b>4th Qtr Average</b>		<b>5.76%</b>	<b>5.91%</b>	<b>6.16%</b>
Industrials	Aaa	Aa	A	Baa
October	5.61%	5.76%	6.02%	6.64%
November	5.20%	5.32%	5.59%	6.18%
December	4.74%	4.82%	5.07%	5.60%
<b>4th Qtr Average</b>	<b>5.18%</b>	<b>5.30%</b>	<b>5.56%</b>	<b>6.14%</b>

Bloomberg S&P Bond Yields	20Y	25Y	30Y
December 2023: BBB	6.33%	6.29%	6.28%

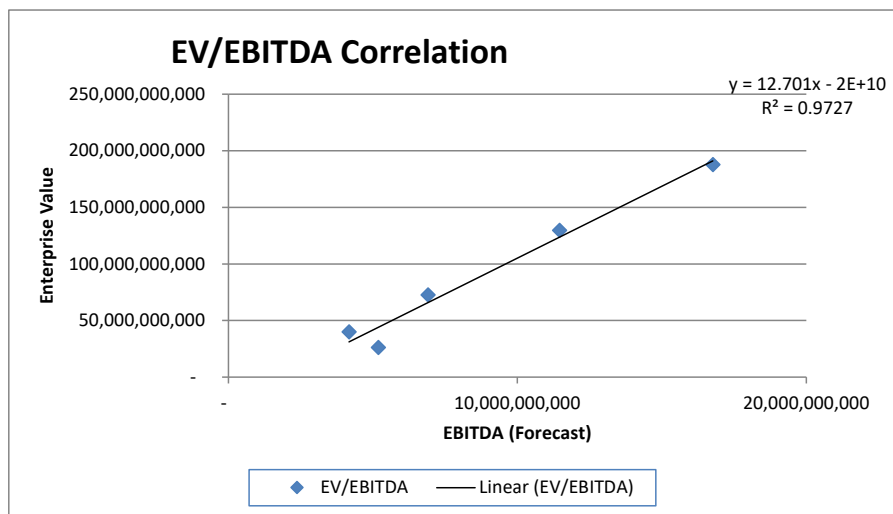
<b>Debt Yield Rate</b>	<b>6.00%</b>
<b>Cost of Secured Debt (Operating Lease) Rate</b>	<b>5.00%</b>

# SUPPORT FOR DIRECT CAPITALIZATION EQUITY COMPONENT

2024 Assessment Year

Company	Ticker	Stock Price	Enterprise Value	EBITDA Historical	Annual Change VL	EBITDA Forecast	EV / EBITDA Forecast	Revenue Forecast	EV / Sales Forecast	Cashflow Forecast	Debt Service	EV / CF Forecast
AES Corp	aes	19.05	39,909,500,000	3,365,000,000	24.00%	4,172,600,000	9.56	12,496,000,000	3.19	1,455,500,000	1,583,040,000	13.13
Exelon Corp	exc	35.52	72,588,400,000	6,799,000,000	1.63%	6,909,552,846	10.51	20,596,500,000	3.52	6,218,750,000	2,234,760,000	8.59
NextEra Energy In	nee	60.19	187,612,880,000	15,983,000,000	4.88%	16,762,658,537	11.19	28,420,200,000	6.60	13,235,400,000	3,846,180,000	10.98
NRG Energy Inc	nrg	51.31	21,256,150,300	262,000,000	NMF			30,595,110,000	0.69	1,644,227,000	634,440,000	9.33
Southern Co	so	69.39	129,538,300,000	10,812,000,000	5.96%	11,456,423,841	11.31	28,248,000,000	4.59	8,560,000,000	3,300,000,000	10.92
Vistra Corp	vst	38.52	26,038,239,200	4,666,000,000	11.11%	5,184,444,444	5.02	16,501,047,000	1.58	3,830,914,000	858,840,000	5.55
<b>6</b>							<b>Mean</b>	<b>9.52</b>		<b>3.36</b>		<b>9.75</b>
							<b>Harmonic Mean</b>	<b>8.67</b>		<b>1.97</b>		<b>9.06</b>
							<b>Median</b>	<b>10.51</b>		<b>3.36</b>		<b>10.13</b>
							<b>Std Dev</b>	<b>2.61</b>		<b>2.11</b>		<b>2.59</b>
<b>Source:</b>							<b>Say</b>	<b>10.00</b>		<b>3.25</b>		<b>9.00</b>

Value Line & Morning Star



Forecast EV/EBITDA By Rank

Guideline Companies	EV/EBITDA forecast	7.52	Low Harmonic Mean
Vistra Corp	5.02	<b>8.36</b>	<b>Low Average</b>
AES Corp	9.56	<b>9.56</b>	<b>Low Median</b>
Exelon Corp	10.51	<b>8.50</b>	<b>Say</b>
NextEra Energy Inc	11.19	<b>10.99</b>	<b>High Harmonic Mean</b>
Southern Co	11.31	<b>11.00</b>	<b>High Average</b>
		<b>11.19</b>	<b>High Median</b>
		<b>11.00</b>	<b>Say</b>

## SUPPORT FOR DIRECT CAPITALIZATION EQUITY COMPONENT

2024 Assessment Year

Power Industry

Company	Ticker	Stock Price	2022		2023		2022		2023	
			Actual Earnings Ratio (EPS/P)		Projected Earnings Ratio (PEPS/P)		Cash Flow Ratio (CF/P)		Projected Cash Flow Ratio	
AES Corp	aes	19.05	0.35	1.8%	0.50	2.6%	1.95	10.2%	2.05	10.8%
Exelon Corp	exc	35.52	2.35	6.6%	2.45	6.9%	6.15	17.3%	6.25	17.6%
NextEra Energy Inc	nee	60.19	3.17	5.3%	3.40	5.6%	6.15	10.2%	6.45	10.7%
NRG Energy Inc	nrg	51.31	1.12	2.2%	3.50	6.8%	4.20	NMF	7.90	15.4%
Southern Co	so	69.39	3.60	5.2%	4.00	5.8%	7.55	10.9%	8.00	11.5%
Vistra Corp	vst	38.52	3.58	9.3%	4.20	10.9%	9.81	25.5%	10.90	28.3%
		<b>Mean</b>		<b>5.1%</b>		<b>6.4%</b>		<b>14.8%</b>		<b>15.7%</b>
		<b>Harmonic Mean</b>		<b>3.7%</b>		<b>5.4%</b>		<b>13.0%</b>		<b>14.0%</b>
		<b>Median</b>		<b>5.2%</b>		<b>6.3%</b>		<b>10.9%</b>		<b>13.5%</b>
		<b>Max</b>		<b>9.3%</b>		<b>10.9%</b>		<b>25.5%</b>		<b>28.3%</b>
		<b>Min</b>		<b>1.8%</b>		<b>2.6%</b>		<b>10.2%</b>		<b>10.7%</b>
		<b>Std Dev</b>		<b>2.8%</b>		<b>2.7%</b>		<b>6.7%</b>		<b>6.8%</b>
		<b>Coefficient of Variation</b>		<b>55.2%</b>		<b>41.6%</b>		<b>44.9%</b>		<b>43.1%</b>
		<b>Say</b>		<b>5.0%</b>		<b>6.0%</b>		<b>13.0%</b>		<b>14.0%</b>

Source: Value Line / yr end stock price

## SUPPORT FOR DIRECT CAPITALIZATION EQUITY COMPONENT

2024 Assessment Year

Power Industry

Company	Ticker	Stock Price	Revenues	Multiple	Cash Flow	Multiple	Earnings	Multiple	Book Value	Multiple
AES Corp	aes	19.05	17.85	1.07	1.95	9.77	0.35	54.43	3.50	5.44
Exelon Corp	exc	35.52	20.50	1.73	6.15	5.78	2.35	15.11	25.50	1.39
NextEra Energy I	nee	60.19	13.70	4.39	6.15	9.79	3.17	18.99	23.15	2.60
NRG Energy Inc	nrg	51.31	138.57	0.37	4.20	12.22	1.12	45.81	13.97	3.67
Southern Co	so	69.39	25.25	2.75	7.55	9.19	3.60	19.28	28.00	2.48
Vistra Corp	vst	38.52	42.05	0.92	9.81	3.93	3.58	10.76	15.10	2.55
<b>Mean</b>				<b>1.87</b>	<b>8.44</b>		<b>27.40</b>		<b>3.02</b>	
<b>Harmonic Mean</b>				<b>1.02</b>	<b>7.29</b>		<b>19.75</b>		<b>2.55</b>	
<b>Median</b>				<b>1.40</b>	<b>9.48</b>		<b>19.13</b>		<b>2.58</b>	
<b>Max</b>				<b>4.39</b>	<b>12.22</b>		<b>54.43</b>		<b>5.44</b>	
<b>Min</b>				<b>0.37</b>	<b>3.93</b>		<b>10.76</b>		<b>1.39</b>	
<b>Say</b>				<b>1.50</b>	<b>8.50</b>		<b>19.00</b>		<b>2.50</b>	

# DATA INPUT

Washington State Department of Revenue

2024 Assessment Year

Power Industry

Guideline Companies		Historic Figures (2023)													
Name	Ticker	Stock Price 12/29/23	Beta Levered	Fin'l Strength	Revenues Per Share	Cash Flow Per Share	Earnings Per Share	Dividends Per Share	Bk Value Per Share	Common Shares	LTD (BV)	Trailing P/E Ratio	Div Yield	Operating Margin	Calculated Debt
		Yahoo	VL	VL	VL	VL	VL	VL	VL	VL	VL	VL	VL	VL	Formula
AES Corp	aes	19.05	1.15	B	17.85	1.95	0.35	0.66	3.50	710,000,000	22,746,000,000	13.9	4.3%	28.5%	99.16%
Exelon Corp	exc	35.52	NMF	B++	20.50	6.15	2.35	1.44	25.50	995,000,000	39,431,000,000	16.0	4.3%	-	90.63%
NextEra Energy Inc	nee	60.19	1.00	A	13.70	6.15	3.17	1.87	23.15	2,052,000,000	61,405,000,000	18.7	3.5%	-	93.85%
NRG Energy Inc	nrg	51.31	1.10	B+	138.57	4.20	1.12	1.51	13.97	208,130,000	10,299,000,000	NMF	2.8%	11.5%	97.96%
Southern Co	so	69.39	0.95	A	25.25	7.55	3.60	2.78	28.00	1,070,000,000	51,606,000,000	13.6	4.1%	-	92.59%
Vistra Corp	vst	38.52	1.05	B+	42.05	9.81	3.58	0.82	15.10	351,460,000	12,116,000,000	15.5	1.5%	28.5%	99.39%

**Average** 15.5 average  
**Harmonic Mean** 15.3 harmonic mean  
**Median** 15.5 median

Value Line 240209, 240315

			Projected (Next Year) 2024							
Payout Ratio	All Div'ds to Net Profits	Rtn on Shrhldrs Equity	Revenues Per Share	Cash Flow Per Share	Earnings Per Share	Dividends Per Share	Bk Value Per Share	All Div'ds to Net Profits	Rtn on Shrhldrs Equity	CF Projection 27-29
Formula	V L	V L	V L	V L	V L	V L	V L	V L	V L	V L
189%	4%	10.0%	17.60	2.05	0.50	0.70	6.85	NMF	7.0%	2.70
61%	60%	9.5%	20.70	6.25	2.45	1.44	26.35	60%	10.0%	7.50
59%	59%	13.6%	13.85	6.45	3.40	2.06	24.55	61%	14.0%	7.75
NMF	NMF	NMF	147.00	7.90	3.50	1.56	13.25	46%	26.5%	8.20
77%	77%	13.0%	26.40	8.00	4.00	2.86	29.90	77%	13.0%	9.25
23%	20%	25.5%	46.95	10.90	4.20	0.90	17.75	20%	25.5%	15.45
average	44%	14%								<b>8.48</b>
rmonic mean	15%	13%								<b>6.47</b>
median	59%	13.0%								<b>7.98</b>

## STOCK PRICE

Washington State Department of Revenue

2024 Assessment Year

Power Industry

**47.09**  
**2023 Year En**

AES	aes								
Date	Open	High	Low	Close	Adj Close	Volume			
29-Dec-23	19.18	19.41	19.14	19.25	19.05	3,749,600			<b>19.05</b>
Exelon	exc								
Date	Open	High	Low	Close	Adj Close	Volume			
29-Dec-23	35.7	35.95	35.57	35.9	35.52	4,634,200			<b>35.52</b>
NextEra	nee								
Date	Open	High	Low	Close	Adj Close	Volume			
29-Dec-23	60.8	61.06	60.27	60.74	60.19	6,814,300			<b>60.19</b>
NRG Energy	nrg								
Date	Open	High	Low	Close	Adj Close	Volume			
29-Dec-23	51.71	52.16	51.51	51.7	51.31	2,387,700			<b>51.31</b>
Southern Co	so								
Date	Open	High	Low	Close	Adj Close	Volume			
29-Dec-23	69.85	70.26	69.63	70.12	69.39	2,895,500			<b>69.39</b>
Vistra Energy	vst								
Date	Open	High	Low	Close	Adj Close	Volume			
29-Dec-23	38.76	38.9	38.34	38.52	38.52	2,312,400			<b>38.52</b>

Source:

finance.yahoo.com

Historical Stock Quotes

## IMPLIED PREMIUMS FOR US MARKET

These implied premiums are calculated using the S&P 500.

Year	Earnings Yield	Dividend Yield	S&P 500	Earnings*	Dividends*	Ends + Buy	Change in Earnings	Change in Dividends	T.Bill Rate	T.Bond Rate	Bond-Bill	Boothed Growth	Premium	Net Growth	Expected Premium	Implied Premium	ERP/Riskfree Rate
2000	3.94%	1.23%	1320.28	56.13	16.27		#REF!	#REF!	5.73%	5.11%	-0.62%	#REF!	1.65%	12.00%	2.87%		0.56
2001	3.85%	1.37%	1148.09	38.85	15.74	30.08	-30.79%	-3.24%	1.80%	5.05%	3.25%	3.56%	1.73%	10.30%	3.62%	2.91%	0.72
2002	5.23%	1.83%	879.82	46.04	16.08	29.83	18.51%	2.15%	1.20%	3.81%	2.61%	3.57%	2.29%	8.00%	4.10%	4.73%	1.08
2003	4.87%	1.61%	1111.91	54.69	17.88	31.58	18.79%	11.19%	1.00%	4.25%	3.25%	5.35%	2.12%	11.00%	3.69%	4.74%	0.87
2004	5.58%	1.60%	1211.92	67.68	19.407	40.60	23.75%	8.54%	2.18%	4.22%	2.04%	4.90%	2.02%	8.50%	3.65%	4.86%	0.86
2005	5.47%	1.79%	1248.29	76.45	22.38	61.17	12.96%	15.32%	4.31%	4.39%	0.08%	6.16%	2.20%	8.00%	4.08%	5.22%	0.93
2006	6.18%	1.77%	1418.3	87.72	25.05	73.16	14.74%	11.93%	4.88%	4.70%	-0.18%	5.93%	1.97%	12.50%	4.16%	6.12%	0.89
2007	5.62%	1.89%	1468.36	82.54	27.73	95.36	-5.91%	10.70%	3.31%	4.02%	0.71%	5.03%	2.06%	5.00%	4.37%	4.59%	1.09
2008	7.24%	3.11%	903.25	65.39	28.05	67.52	-20.78%	1.15%	1.59%	2.21%	0.62%	2.11%	4.05%	4.00%	6.43%	6.92%	2.91
2009	5.35%	2.00%	1115.10	59.65	22.31	37.43	-8.78%	-20.46%	0.14%	3.84%	3.70%	0.28%	2.60%	7.20%	4.36%	4.64%	1.14
2010	6.65%	1.84%	1257.64	83.66	23.12	55.53	40.25%	3.63%	0.13%	3.29%	3.16%	3.33%	2.24%	6.95%	5.20%	6.09%	1.58
2011	7.72%	2.07%	1257.60	97.05	26.02	71.28	16.01%	12.54%	0.03%	1.88%	1.85%	2.75%	2.71%	7.18%	6.01%	8.34%	3.20
2012	7.18%	2.13%	1426.19	102.47	30.44	75.90	5.58%	16.99%	0.05%	1.76%	1.71%	2.93%	2.47%	5.27%	5.78%	7.30%	3.28
2013	5.81%	1.96%	1848.36	107.45	36.28	88.13	4.86%	19.19%	0.07%	3.04%	2.97%	5.01%	2.03%	4.28%	4.96%	4.99%	1.63
2014	5.49%	1.92%	2058.90	113.01	39.44	101.98	5.17%	8.71%	0.05%	2.17%	2.12%	2.77%	2.24%	5.58%	5.78%	5.48%	2.66
2015	5.20%	2.11%	2043.94	106.32	43.16	106.10	-5.92%	9.43%	0.21%	2.27%	2.06%	2.96%	2.46%	5.51%	6.12%	5.16%	2.70
2016	4.86%	2.01%	2238.83	108.86	45.03	108.67	2.39%	4.33%	0.51%	2.45%	1.94%	2.64%	2.41%	5.54%	5.69%	4.50%	2.32
2017	4.67%	1.86%	2673.61	124.94	49.73	108.28	14.77%	10.44%	1.39%	2.41%	1.02%	3.22%	2.36%	7.05%	5.08%	4.75%	2.11
2018	5.92%	2.14%	2506.85	148.34	53.61	136.65	18.73%	7.80%	2.37%	2.68%	0.31%	3.24%	2.50%	4.12%	5.96%	5.55%	2.22
2019	5.03%	1.82%	3230.78	162.35	58.80	150.50	9.44%	9.68%	1.55%	1.92%	0.37%	2.57%		3.96%	5.20%	5.06%	2.71
2021	4.33%	1.24%	4766.18	206.38	59.20	147.24	27.12%	0.68%	0.06%	1.51%	1.45%	1.45%	1.72%	6.47%	4.24%	4.90%	2.81
2022	5.72%	1.78%	3839.50	219.49	68.34	181.99	6.35%	15.44%	4.42%	3.88%	-0.54%	5.59%	2.16%	6.41%	5.94%	5.11%	1.53
2023	4.61%	1.47%	4769.83	219.7	70.3	164.25	0.10%	2.87%	5.20%	3.88%	-1.32%	3.73%	1.97%	8.74%	4.60%	4.57%	1.19

<http://pages.stern.nyu.edu/~adamodar/>  
Updated January 2024

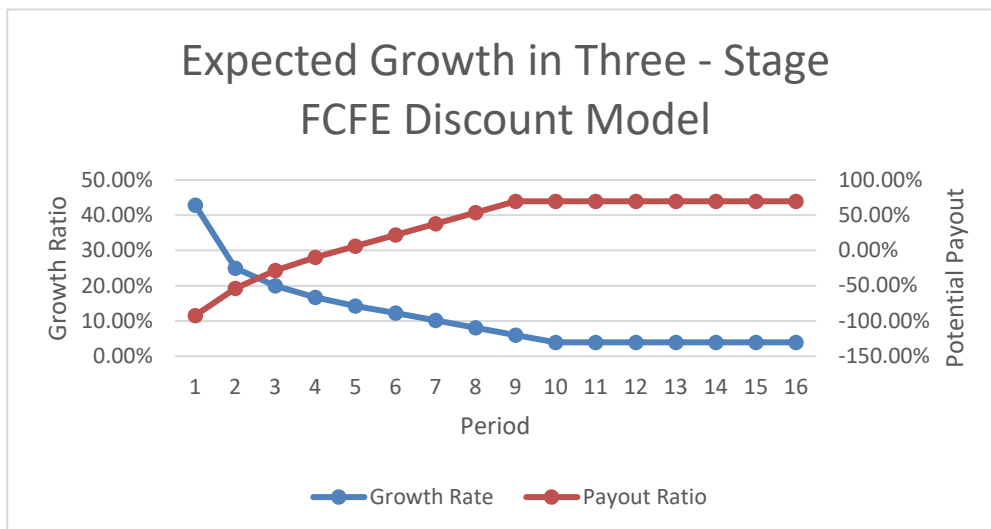


### Three Stage Free Cash Flow to Equity Discount Model

Company	AES Corp	3.93%	GDP
Ticker	aes	16.5	Industry P/E
		50.0%	Target Dividend Payout Ratio
		13.0%	Target ROE

	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		329.67%	-229.67%	0.35			(19.05)
Stage 1	1	42.86%	192.31%	-92.31%	0.50	####		-0.46
	2	25.00%	153.85%	-53.85%	0.63	####		-0.34
	3	20.00%	128.21%	-28.21%	0.75	####		-0.21
	4	16.67%	109.89%	-9.89%	0.88	####		-0.09
	5	14.29%	93.96%	6.04%	1.00	0.06		0.06
Stage 2	6	12.21%	78.03%	21.97%	1.12	0.25		0.25
	7	10.14%	62.09%	37.91%	1.24	0.47		0.47
	8	8.07%	46.16%	53.84%	1.34	0.72		0.72
	9	6.00%	30.23%	69.77%	1.42	0.99		0.99
	10	3.93%	30.23%	69.77%	1.47	1.03	25.23	26.26
Stage 3	11+	3.93%	30.23%	69.77%	1.53	1.07		

**$K_e = 3.73%$**

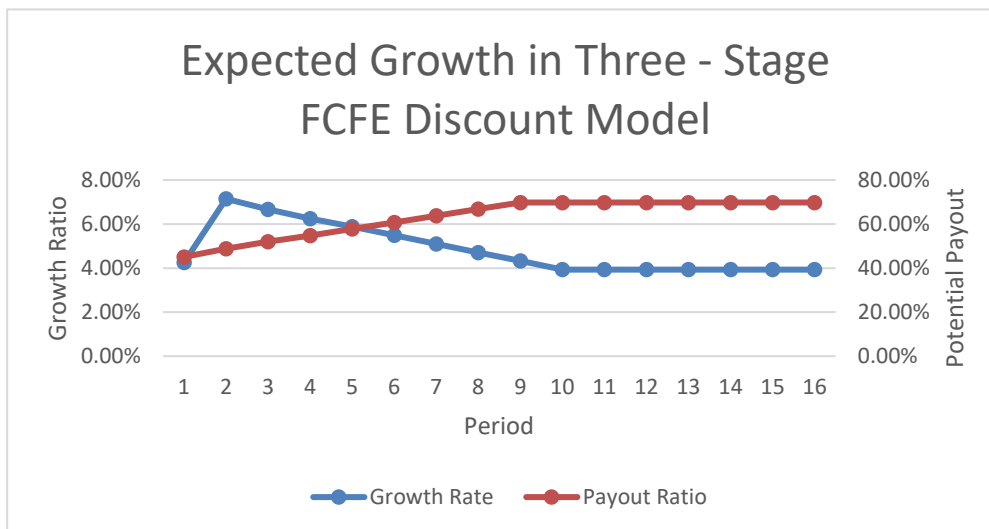


### Three Stage Free Cash Flow to Equity Discount Model

Company **Exelon Corp** **3.93%** GDP  
 Ticker **exc** **16.5** Industry P/E  
**50.0%** Target Dividend Payout Ratio  
**13.0%** Target ROE

	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		32.73%	67.27%	<b>2.35</b>			<b>(35.52)</b>
	1	4.26%	54.95%	45.05%	<b>2.45</b>	1.10		1.10
	2	7.14%	51.28%	48.72%	2.63	1.28		1.28
Stage 1	3	6.67%	48.08%	51.92%	2.80	1.45		1.45
	4	6.25%	45.25%	54.75%	2.98	1.63		1.63
	5	5.88%	42.25%	57.75%	<b>3.15</b>	1.82		1.82
	6	5.49%	39.24%	60.76%	3.32	2.02		2.02
	7	5.10%	36.24%	63.76%	3.49	2.23		2.23
Stage 2	8	4.71%	33.23%	66.77%	3.66	2.44		2.44
	9	4.32%	30.23%	69.77%	3.82	2.66		2.66
	10	3.93%	30.23%	69.77%	3.96	2.77	67.99	70.76
Stage 3	11+	3.93%	30.23%	69.77%	4.12	2.88		

**$K_e = 10.60\%$**

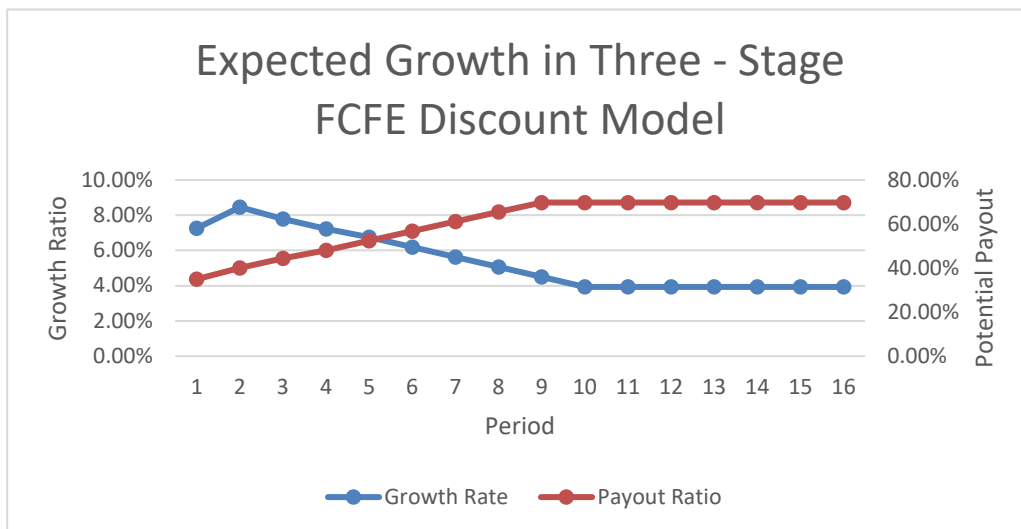


### Three Stage Free Cash Flow to Equity Discount Model

Company **NextEra Energy** 3.93% GDP  
 Ticker **nee** 16.5 Industry P/E  
 50.0% Target Dividend Payout Ratio  
 13.0% Target ROE

	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		55.81%	44.19%	3.17			(60.19)
	1	7.26%	65.05%	34.95%	3.40	1.19		1.19
	2	8.46%	59.97%	40.03%	3.69	1.48		1.48
Stage 1	3	7.80%	55.64%	44.36%	3.98	1.76		1.76
	4	7.23%	51.88%	48.12%	4.26	2.05		2.05
	5	6.74%	47.55%	52.45%	4.55	2.39		2.39
	6	6.18%	43.22%	56.78%	4.83	2.74		2.74
Stage 2	7	5.62%	38.89%	61.11%	5.10	3.12		3.12
	8	5.06%	34.56%	65.44%	5.36	3.51		3.51
	9	4.49%	30.23%	69.77%	5.60	3.91		3.91
	10	3.93%	30.23%	69.77%	5.82	4.06	99.83	103.90
Stage 3	11+	3.93%	30.23%	69.77%	6.05	4.22		

**$K_e = 8.44\%$**

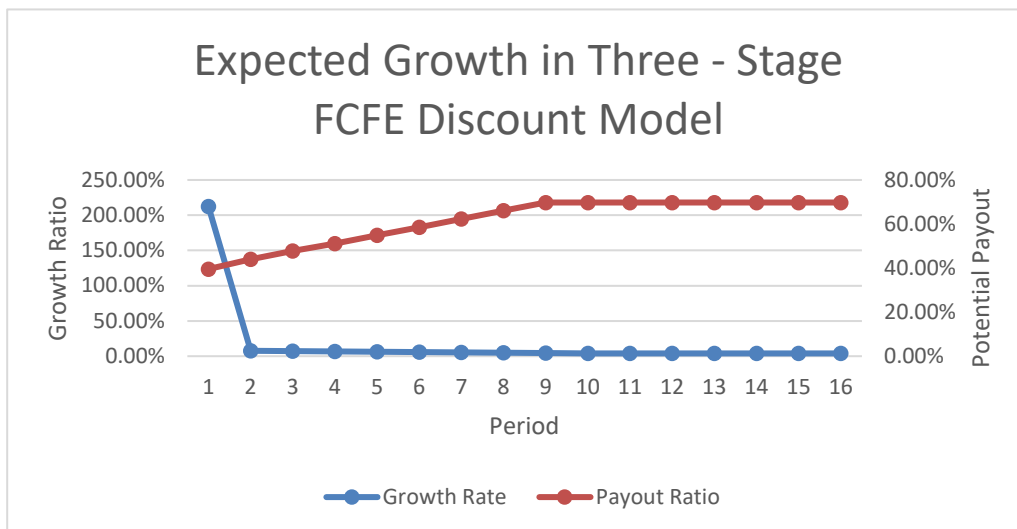


### Three Stage Free Cash Flow to Equity Discount Model

Company **NRG Energy Inc** **3.93%** GDP  
 Ticker **nrg** **16.5** Industry P/E  
**50.0%** Target Dividend Payout Ratio  
**13.0%** Target ROE

	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		1634.62%	-1534.62%	<b>1.12</b>			<b>(51.31)</b>
Stage 1	1	212.50%	60.44%	39.56%	<b>3.50</b>	1.38		1.38
	2	7.86%	56.04%	43.96%	3.78	1.66		1.66
	3	7.28%	52.23%	47.77%	4.05	1.93		1.93
	4	6.79%	48.91%	51.09%	4.33	2.21		2.21
	5	6.36%	45.17%	54.83%	<b>4.60</b>	2.52		2.52
Stage 2	6	5.87%	41.44%	58.56%	4.87	2.85		2.85
	7	5.39%	37.70%	62.30%	5.13	3.20		3.20
	8	4.90%	33.97%	66.03%	5.38	3.56		3.56
	9	4.42%	30.23%	69.77%	5.62	3.92		3.92
	10	3.93%	30.23%	69.77%	5.84	4.08	100.19	104.27
Stage 3	11+	3.93%	30.23%	69.77%	6.07	4.24		

**K<sub>e</sub> = 10.63%**

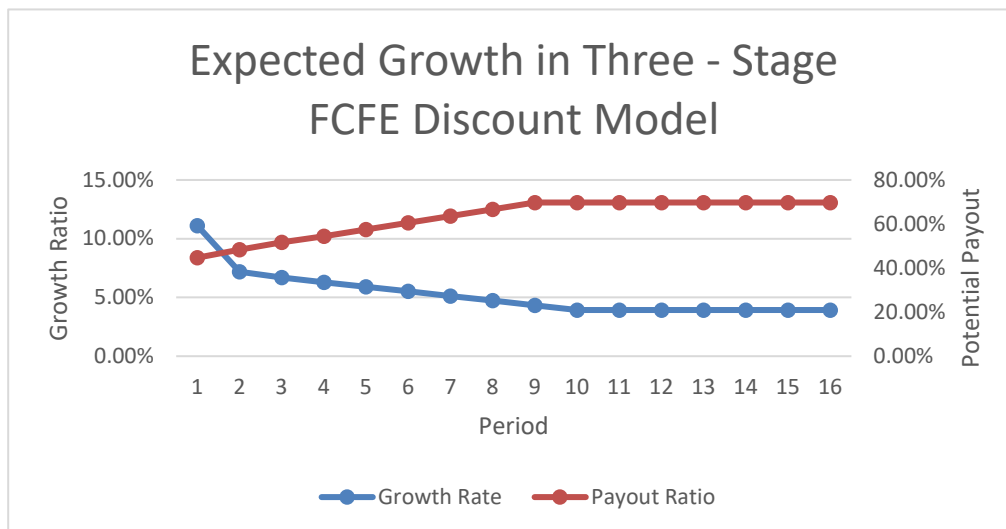


### Three Stage Free Cash Flow to Equity Discount Model

Company **Southern Co** 3.93% GDP  
 Ticker **so** 16.5 Industry P/E use median  
 50.0% Target Dividend Payout Ratio  
 13.0% Target ROE

	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		85.47%	14.53%	3.60			(69.39)
Stage 1	1	11.11%	55.29%	44.71%	4.00	1.79		1.79
	2	7.19%	51.58%	48.42%	4.29	2.08		2.08
	3	6.71%	48.34%	51.66%	4.58	2.36		2.36
	4	6.28%	45.48%	54.52%	4.86	2.65		2.65
	5	5.91%	42.43%	57.57%	5.15	2.96		2.96
Stage 2	6	5.52%	39.38%	60.62%	5.43	3.29		3.29
	7	5.12%	36.33%	63.67%	5.71	3.64		3.64
	8	4.72%	33.28%	66.72%	5.98	3.99		3.99
	9	4.33%	30.23%	69.77%	6.24	4.35		4.35
	10	3.93%	30.23%	69.77%	6.49	4.53	111.23	115.75
Stage 3	11+	3.93%	30.23%	69.77%	6.74	4.70		

**$K_e = 8.36\%$**



### Three Stage Free Cash Flow to Equity Discount Model

Company **Vistra Corp**      **3.93%** GDP  
 Ticker **vst**      **16.5** Industry P/E  
                          **50.0%** Target Dividend Payout Ratio  
                          **13.0%** Target ROE

	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		133.22%	-33.22%	<b>3.58</b>			<b>(38.52)</b>
	1	17.32%	132.78%	-32.78%	<b>4.20</b>	(1.38)		-1.38
	2	17.26%	113.24%	-13.24%	4.93	(0.65)		-0.65
Stage 1	3	14.72%	98.71%	1.29%	5.65	0.07		0.07
	4	12.83%	87.48%	12.52%	6.38	0.80		0.80
	5	11.37%	76.03%	23.97%	<b>7.10</b>	1.70		1.70
	6	9.88%	64.58%	35.42%	7.80	2.76		2.76
	7	8.40%	53.13%	46.87%	8.46	3.96		3.96
Stage 2	8	6.91%	41.68%	58.32%	9.04	5.27		5.27
	9	5.42%	30.23%	69.77%	9.53	6.65		6.65
	10	3.93%	30.23%	69.77%	9.91	6.91	169.86	176.77
Stage 3	11+	3.93%	30.23%	69.77%	10.29	7.18		

**Ke = 18.00%**

