Department of Revenue Washington State

COST OF CAPITAL STUDY

YIELD CAPITALIZATION

2020 Assessment Year

APPENDIX C

Electric Industry

EQUITY RATE						**8.50%**	
CAPITAL ASSET PRICING MODEL							PAGE
CAPM Ex Ante			5.01%				4
DIVIDEND GROWTH MODELS Single Stage							
Value Line, based on Dividends Growth			8.50%				6
Value Line, based on Earnings Growth			8.50%				7
Value Line, based on Return on Equity			6.25%				8
FCFE GROWTH MODEL Multi Stage			7.00%				9
					RANGE	**5.01-8.50%**	
DEBT RATE						**4.50%**	10
MARKET CAPITAL STRUCTURE							
Equity	60%	x	8.50%	=		5.10%	3
Debt	40%	x	4.50%	=	1.80%		3
Marginal Tax Rate	24%	=	(1-.24)	x	1.80%	1.37%	
WEIGHTED AVERAGE COST OF CAPITAL						**6.47%**	

SUPPORT FOR GUIDELINE COMPANIES

Washington State Department of Revenue

2020 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
Alliant Energy Corp	lnt	0.55	A	23.5	2.6%	5,204,284,272	46.7%	400,000,000	3.6%	5,533,000,000	49.7%	11,137,284,272
Ameren Corp	aee	0.50	A	24.8	2.5%	8,059,163,934	47.1%	142,000,000	0.8%	8,915,000,000	52.1%	17,116,163,934
Avangrid Inc	agr	0.40	B++	27.7	3.5%	15,295,760,964	69.5%			6,718,000,000	30.5%	22,013,760,964
Avista Corp	ava	0.60	A	16.3	3.2%	1,921,246,416	49.9%			1,930,900,000	50.1%	3,852,146,416
Black Hills	bkh	0.70	A	22.4	2.6%	2,350,618,216	43.5%			3,049,200,000	56.5%	5,399,818,216
CMS Energy Corp	cms	0.50	B++	26.9	2.4%	5,019,037,420	29.4%	37,000,000	0.2%	12,027,000,000	70.4%	17,083,037,420
CenterPoint Energy Inc	cnp	0.70	B+	15.5	3.2%	6,579,385,724	29.1%	1,778,000,000	7.9%	14,244,000,000	63.0%	22,601,385,724
Chesapeake Utilities	cpk	0.60	A	26.9	1.6%	574,952,349	60.5%			375,800,000	39.5%	950,752,349
Con. Edison Inc	ed	0.40	A+	21.8	3.3%	17,834,891,389	50.4%			17,537,000,000	49.6%	35,371,891,389
Dominion Energy	D	0.50	B++	18.9	4.5%	28,437,876,314	44.7%	1,596,000,000	2.5%	33,635,000,000	52.8%	63,668,876,314
DTE Energy Co	dte	0.50	B++	17.9	3.0%	11,674,413,331	42.3%			15,935,000,000	57.7%	27,609,413,331
Duke Energy Corp	duk	0.45	A	20.2	4.1%	45,017,779,599	44.7%	973,000,000	1.0%	54,818,000,000	54.4%	100,808,779,599
Emera Inc	ema	0.50	B+	20.3	4.3%	9,311,232,000	38.8%	1,004,000,000	4.2%	13,679,000,000	57.0%	23,994,232,000
Entergy Corp	etr	0.60	B++	19.3	3.1%	10,253,970,729	37.2%	254,400,000	0.9%	17,079,000,000	61.9%	27,587,370,729
Eversource Energy	es	0.55	A	26.5	2.5%	12,205,804,516	46.3%	155,600,000	0.6%	13,980,000,000	53.1%	26,341,404,516
Exelon Corp	exc	0.65	B++	20.2	3.2%	32,419,830,648	50.0%			32,446,000,000	50.0%	64,865,830,648
FirstEnergy Corp	fe	0.60	B++	27.8	3.1%	7,211,379,435	26.4%	707,000,000	2.6%	19,422,000,000	71.0%	27,340,379,435
Fortis Inc	fts	0.60	B++	21.3	4.5%	16,913,115,000	41.8%	1,623,000,000	4.0%	21,914,000,000	54.2%	40,450,115,000
Hawaiian Electric	he	0.55	A	25.2	2.7%	2,228,488,934	53.7%	34,300,000	0.8%	1,885,500,000	45.5%	4,148,288,934
Idacorp Inc	ida	0.55	A	25.5	2.4%	2,461,911,818	57.3%			1,836,400,000	42.7%	4,298,311,818
MGE Energy Inc	mgee	0.50	A+	28.9	1.8%	855,615,372	62.0%			523,700,000	38.0%	1,379,315,372
NorthWestern Corp	nwe	0.60	B++	21.3	3.2%	2,027,962,767	48.0%			2,194,100,000	52.0%	4,222,062,767
OGE Energy Corp	oge	0.70	A	17.2	3.4%	4,141,669,537	56.5%			3,195,200,000	43.5%	7,336,869,537
Otter Tail Corp	ottr	0.70	A	22.7	2.7%	782,571,738	53.2%			689,600,000	46.8%	1,472,171,738
PNM Resources Inc	pnm	0.60	B+	28.4	2.3%	1,656,795,379	40.1%	11,500,000	0.3%	2,467,000,000	59.7%	4,135,295,379
Portland General Elec Co	por	0.55	B++	25.2	2.7%	2,579,170,645	52.6%			2,328,000,000	47.4%	4,907,170,645
P.S. Enterprise Group	peg	0.60	A++	17.3	3.2%	14,994,789,687	50.9%			14,448,000,000	49.1%	29,442,789,687
Sempra Energy	sre	0.70	A	25.5	2.6%	17,266,126,080	42.6%	2,278,000,000	5.6%	20,995,000,000	51.8%	40,539,126,080
WEC Energy Group Inc	wec	0.45	A+	27.3	2.6%	10,112,865,176	47.4%	30,400,000	0.1%	11,211,000,000	52.5%	21,354,265,176
Xcel Energy Inc	xel	0.50	A+	25.4	2.6%	13,188,360,614	44.0%			16,819,000,000	56.0%	30,007,360,614
Mean		**0.56**		**22.9**	**3.0%**	**10,286,035,667**	**46.9%**		**2.3%**	**12,394,346,667**	**52.0%**	
Harmonic Mean		**0.55**					**44.8%**		**0.6%**		**50.4%**	
Weighted Mean						**308,581,070,000**	**44.6%**	**11,024,200,000**	**1.6%**	**371,830,400,000**	**53.8%**	**691,435,670,000**
Median		**0.55**			**2.9%**		**46.9%**		**1.0%**		**52.0%**	

SUPPORT FOR CAPITAL STRUCTURE Market Value

Washington State Department of Revenue

2020 Assessment Year

Electric Industry

Company	Ticker	Stock Price	Common Shares	Common Stock	%	Preferred Stock	%	Long Term Debt	%	Total Debt & Equity
Alliant Energy Corp	lnt	54.72	245,022,800	13,407,647,616	64.7%	400,000,000	1.9%	6,919,900,000	33.4%	20,727,547,616
Ameren Corp	aee	76.80	246,231,712	18,910,595,482	64.1%	142,000,000	0.5%	10,441,000,000	35.4%	29,493,595,482
Avangrid Inc	agr	50.74	309,005,272	15,678,927,501	65.7%	-		8,168,000,000	34.3%	23,846,927,501
Avista Corp	ava	48.09	66,709,945	3,208,081,255	58.5%	-		2,272,327,000	41.5%	5,480,408,255
Black Hills	bkh	78.04	61,454,071	4,795,875,701	58.0%	-		3,479,367,000	42.0%	8,275,242,701
CMS Energy Corp	cms	62.84	283,882,207	17,839,157,888	55.6%	37,000,000	0.1%	14,185,000,000	44.2%	32,061,157,888
CenterPoint Energy	cnp	26.98	502,243,185	13,550,521,131	34.2%	1,778,000,000	4.5%	24,327,000,000	61.3%	39,655,521,131
Chesapeake Utilitie	cpk	95.41	16,403,776	1,565,084,268	75.6%	-		505,000,000	24.4%	2,070,084,268
Con. Edison Inc	ed	90.47	332,430,408	30,074,979,012	56.9%	-		22,738,000,000	43.1%	52,812,979,012
Dominion Energy	D	81.92	823,093,381	67,427,809,772	51.8%	1,596,000,000	1.2%	61,127,000,000	47.0%	130,150,809,772
DTE Energy Co	dte	128.43	192,234,700	24,688,702,521	57.8%			18,031,000,000	42.2%	42,719,702,521
Duke Energy Corp	duk	91.21	729,032,868	66,495,087,890	50.9%	973,000,000	0.7%	63,062,000,000	48.3%	130,530,087,890
Emera Inc	ema	55.22	242,480,000	13,389,745,600	93.0%	1,004,000,000	7.0%	-	0.0%	14,393,745,600
Entergy Corp	etr	119.80	199,726,738	23,927,263,212	55.3%	254,400,000	0.6%	19,059,950,000	44.1%	43,241,613,212
Eversource Energy	es	85.07	323,761,393	27,542,381,703	63.3%	155,600,000	0.4%	15,796,100,000	36.3%	43,494,081,703
Exelon Corp	exc	45.24	972,108,865	43,978,205,053	97.4%	-		1,173,000,000	2.6%	45,151,205,053
FirstEnergy Corp	fe	48.60	511,445,350	24,856,244,010	51.3%	707,000,000	1.5%	22,928,000,000	47.3%	48,491,244,010
Fortis Inc	fts	41.07	463,500,000	19,035,945,000	92.1%	1,623,000,000	7.9%	-	0.0%	20,658,945,000
Hawaiian Electric	he	46.55	108,972,564	5,072,672,854	74.8%	34,300,000	0.5%	1,670,189,000	24.6%	6,777,161,854
Idacorp Inc	ida	106.80	50,397,376	5,382,439,757	72.1%	-		2,083,931,000	27.9%	7,466,370,757
MGE Energy Inc	mgee	78.46	34,668,370	2,720,080,310	81.6%	-		611,909,000	18.4%	3,331,989,310
NorthWestern Corp	nwe	71.67	50,446,835	3,615,524,664	59.9%	-		2,416,814,000	40.1%	6,032,338,664
OGE Energy Corp	oge	44.47	200,177,358	8,901,887,110	71.8%	-		3,500,400,000	28.2%	12,402,287,110
Otter Tail Corp	ottr	50.94	40,214,375	2,048,520,263	73.4%	-		742,279,000	26.6%	2,790,799,263
PNM Resources Inc	pnm	50.71	79,653,624	4,039,235,273	56.2%	11,500,000	0.2%	3,142,704,000	43.7%	7,193,439,273
Portland General El	por	55.79	89,244,659	4,978,959,526	62.1%	-		3,039,000,000	37.9%	8,017,959,526
P.S. Enterprise Gro	peg	58.52	505,726,465	29,595,112,732	63.9%	-		16,723,000,000	36.1%	46,318,112,732
Sempra Energy	sre	149.93	281,895,936	42,264,657,684	77.5%	2,278,000,000	4.2%	10,003,000,000	18.3%	54,545,657,684
WEC Energy Group	wec	92.23	315,435,595	29,092,624,927	69.0%	30,400,000	0.1%	13,035,900,000	30.9%	42,158,924,927
Xcel Energy Inc	xel	63.49	524,388,096	33,293,400,215	62.2%	-		20,227,000,000	37.8%	53,520,400,215
			Mean		**65.7%**		**2.1%**		**33.3%**	
			Harmonic Mean		**62.9%**		**0.4%**		**#NUM!**	
			Weighted Mean	**601,377,369,929**	**61.1%**	**11,024,200,000**	**1.1%**	**371,408,770,000**	**37.8%**	**983,810,339,929**
			Median		**63.6%**		**0.7%**		**36.2%**	
			Std Dev		**13.7%**		**2.6%**		**14.4%**	
			Coefficient of Variation		**20.8%**		**123.7%**		**43.4%**	
			Target		**60%**				**40%**	**100%**

SUPPORT FOR YIELD CAPITALIZATION EQUITY COMPONENT

CAPITAL ASSET PRICING MODEL

2020 Assessment Year

Ex Ante

Ke = Rf + B (Rp)

Ke =	**Cost of Equity**			**5.01%**
				to page 1
	Rm =	rate of return	7.15%	
	Rf =	risk free rate	2.40%	
	Rp =	risk premium	4.75%	
	B =	Beta	0.55	page 7

Rp =	**Risk Premium**		**4.75%**
			to above
Shannon Pratt and Roger Grabowski		3.50% - 6.00%	
	Cost of Capital, App and Exam, 5th Ed, 2014		
Dr. Aswath Damodaran		5.20%	chart page 15
	http://pages.stern.nyu.edu/~adamodar/	4.72%	adjusted for Rf
	2019 Implied Premium		
John Graham & Campbell Harvey		6.81%	10 year expected real retu
	Duke CFO magazine Global Business Outlook	6.30%-7.32%	95% Interval 10 year expe
	Dec 19 pg 38	6.23%	adjusted for Rf
		1.82%	Rf rate used in survey

Rf =	**Risk Free Rate**			**2.40%**
Value Line Investment Survey, Selected Yields January 10, 2020, page 1313				
as of 12-31-19	US Treasury Securities year end data			
	5 year	1.69%		
	10 year	1.92%		
	30 year	2.39%		
	30 year Zero	2.42%		
Federal Reserve Statistical Release (http://www.federalreserve.gov/Releases/H15/Current/)				
as of 12-31-19	Treasury Constant Maturities			
	5 year	1.69%		
	10 year	1.92%		
	20 year	2.25%		
	30 year	2.39%		
	20 year TIPS	0.39%	1.86%	
	30 year TIPS	0.58%	1.81%	
			TIPS inflation indication	

Inflation		**2.00%**
		to appraisal template
Value Line Investment Survey, Economic Series January 3, 2020, page 1500		
Consumer Price Index Annual Rate of Change 2022-2024	2.50%	
The Livingston Survey December 21, 2019, page 4, 10		
Inflation median (measured by the CPI) over next 10 years	2.22%	

Gross Domestic Product (GDP) Nominal		**3.90%**
		real GDP + inflation est
Federal Reserve Projected Long Run Real GDP Growth		
Median Projection Value From Dec 11, 2019 Report		1.90%
https://www.federalreserve.gov/monetarypolicy/fomcprojtabl20191211.htm		
Congressional Budget Office Real GDP Economic Projections		Table E-1 pg 147
The Budget and Economic Outlook 2020-2030	2020-2024	1.80%
Average Percentage Change Year to Year	2025-2030	1.65%
http://www.cbo.gov/publication/56020		
Federal Reserve Bank of Philadelphia		
The Livingston Survey, December 13, 2019, page 4, 10		
Average Annual Real GDP Growth Rate for Next Ten Years		2.00%
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

2020 Assessment Year

Electric Industry

Based on Dividend Growth

Ke = (D1 / Po) + 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)	Dividend Growth (G)	Ke with Short Term Growth
Alliant Energy Corp	lnt	54.72	1.52	2.78%	5.50%	8.28%
Ameren Corp	aee	76.80	2.01	2.62%	5.00%	7.62%
Avangrid Inc	agr	50.74	1.78	3.51%	3.50%	7.01%
Avista Corp	ava	48.09	1.61	3.35%	3.50%	6.85%
Black Hills	bkh	78.04	2.17	2.78%	6.50%	9.28%
CMS Energy Corp	cms	62.84	1.63	2.59%	7.00%	9.59%
CenterPoint Energy Inc	cnp	26.98	1.16	4.30%	2.00%	6.30%
Chesapeake Utilities	cpk	95.41	1.69	1.77%	9.00%	10.77%
Con. Edison Inc	ed	90.47	3.06	3.38%	3.50%	6.88%
Dominion Energy	D	81.92	3.76	4.59%	4.50%	9.09%
DTE Energy Co	dte	128.43	4.12	3.21%	6.50%	9.71%
Duke Energy Corp	duk	91.21	3.82	4.19%	2.50%	6.69%
Emera Inc	ema	55.22	2.46	4.45%	3.50%	7.95%
Entergy Corp	etr	119.80	3.74	3.12%	4.00%	7.12%
Eversource Energy	es	85.07	2.27	2.67%	6.00%	8.67%
Exelon Corp	exc	45.24	1.53	3.38%	5.50%	8.88%
FirstEnergy Corp	fe	48.60	1.57	3.23%	3.00%	6.23%
Fortis Inc	fts	41.07	1.97	4.80%	6.00%	10.80%
Hawaiian Electric	he	46.55	1.32	2.84%	3.00%	5.84%
Idacorp Inc	ida	106.80	2.73	2.56%	7.00%	9.56%
MGE Energy Inc	mgee	78.46	1.45	1.85%	5.50%	7.35%
NorthWestern Corp	nwe	71.67	2.40	3.35%	4.50%	7.85%
OGE Energy Corp	oge	44.47	1.60	3.60%	6.00%	9.60%
Otter Tail Corp	ottr	50.94	1.48	2.91%	5.00%	7.91%
PNM Resources Inc	pnm	50.71	1.24	2.45%	7.00%	9.45%
Portland General Elec (	por	55.79	1.62	2.90%	6.50%	9.40%
P.S. Enterprise Group	peg	58.52	1.96	3.35%	5.00%	8.35%
Sempra Energy	sre	149.93	4.20	2.80%	8.00%	10.80%
WEC Energy Group Inc	wec	92.23	2.53	2.74%	6.50%	9.24%
Xcel Energy Inc	xel	63.49	1.72	2.71%	6.00%	8.71%
					Mean	**8.39%**
					Harmonic Mean	**8.16%**
					Median	**8.51%**
					Max	**10.80%**
					Min	**5.84%**
					Std Dev	**1.40%**
					Coefficient of Variation	**16.69%**
					Say	**8.50%**

SUPPORT FOR YIELD CAPITALIZATION EQUITY COMPONENT
DIVIDEND GROWTH MODEL

Washington State Department of Revenue

2020 Assessment Year

Electric Industry

Based on Earnings Growth

Ke = (D1 / Po) + 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
Alliant Energy Corp	lnt	54.72	1.52	2.78%	6.50%	9.28%
Ameren Corp	aee	76.80	2.01	2.62%	6.00%	8.62%
Avangrid Inc	agr	50.74	1.78	3.51%	8.50%	12.01%
Avista Corp	ava	48.09	1.61	3.35%	3.50%	6.85%
Black Hills	bkh	78.04	2.17	2.78%	5.00%	7.78%
CMS Energy Corp	cms	62.84	1.63	2.59%	7.50%	10.09%
CenterPoint Energy	cnp	26.98	1.16	4.30%	6.50%	10.80%
Chesapeake Utilities	cpk	95.41	1.69	1.77%	9.00%	10.77%
Con. Edison Inc	ed	90.47	3.06	3.38%	3.00%	6.38%
Dominion Energy	D	81.92	3.76	4.59%	7.00%	11.59%
DTE Energy Co	dte	128.43	4.12	3.21%	5.00%	8.21%
Duke Energy Corp	duk	91.21	3.82	4.19%	6.00%	10.19%
Emera Inc	ema	55.22	2.46	4.45%	6.00%	10.45%
Entergy Corp	etr	119.80	3.74	3.12%	3.00%	6.12%
Eversource Energy	es	85.07	2.27	2.67%	5.50%	8.17%
Exelon Corp	exc	45.24	1.53	3.38%	8.00%	11.38%
FirstEnergy Corp	fe	48.60	1.57	3.23%	7.00%	10.23%
Fortis Inc	fts	41.07	1.97	4.80%	2.50%	7.30%
Hawaiian Electric	he	46.55	1.32	2.84%	2.50%	5.34%
Idacorp Inc	ida	106.80	2.73	2.56%	3.50%	6.06%
MGE Energy Inc	mgee	78.46	1.45	1.85%	5.50%	7.35%
NorthWestern Corp	nwe	71.67	2.40	3.35%	2.00%	5.35%
OGE Energy Corp	oge	44.47	1.60	3.60%	4.50%	8.10%
Otter Tail Corp	ottr	50.94	1.48	2.91%	5.00%	7.91%
PNM Resources Inc	pnm	50.71	1.24	2.45%	7.00%	9.45%
Portland General Ele	por	55.79	1.62	2.90%	4.50%	7.40%
P.S. Enterprise Grou	peg	58.52	1.96	3.35%	6.00%	9.35%
Sempra Energy	sre	149.93	4.20	2.80%	11.00%	13.80%
WEC Energy Group	wec	92.23	2.53	2.74%	6.00%	8.74%
Xcel Energy Inc	xel	63.49	1.72	2.71%	5.50%	8.21%
					Mean	**8.78%**
					Harmonic Mean	**8.30%**
					Median	**8.41%**
					Max	**13.80%**
					Min	**5.34%**
					Std Dev	**2.08%**
					Coefficient of Variation	**23.66%**
					Say	**8.50%**

SUPPORT FOR YIELD CAPITALIZATION EQUITY COMPONENT
DIVIDEND GROWTH MODEL

Washington State Department of Revenue

2020 Assessment Year

Electric Industry

Based on Return on Equity Ke = (D1 / Po) + G

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

Company	Ticker	Stock Price (Po)	Expected Dividend (D1)	Expected Earnings (E1)	Dividend Yield (D1/Po)	Retained Earnings (b)	ROE (E1/Po)	Growth (b*ROE)	K_e Dividends	K_e Earnings
Alliant Energy Corp	lnt	54.72	1.52	2.40	2.78%	39.0%	4.39%	1.71%	4.49%	6.10%
Ameren Corp	aee	76.80	2.01	3.50	2.62%	43.0%	4.56%	1.96%	4.58%	6.52%
Avangrid Inc	agr	50.74	1.78	2.45	3.51%	27.0%	4.83%	1.30%	4.81%	6.13%
Avista Corp	ava	48.09	1.61	2.05	3.35%	47.0%	4.26%	2.00%	5.35%	6.27%
Black Hills	bkh	78.04	2.17	3.65	2.78%	41.0%	4.68%	1.92%	4.70%	6.59%
CMS Energy Corp	cms	62.84	1.63	2.60	2.59%	36.0%	4.14%	1.49%	4.08%	5.63%
CenterPoint Energy I	cnp	26.98	1.16	1.50	4.30%	20.0%	5.56%	1.11%	5.41%	6.67%
Chesapeake Utilities	cpk	95.41	1.69	3.65	1.77%	54.0%	3.83%	2.07%	3.84%	5.89%
Con. Edison Inc	ed	90.47	3.06	4.40	3.38%	25.0%	4.86%	1.22%	4.60%	6.08%
Dominion Energy	D	81.92	3.76	4.40	4.59%	NMF	5.37%	NMF	NMF	NMF
DTE Energy Co	dte	128.43	4.12	6.50	3.21%	41.0%	5.06%	2.08%	5.28%	7.14%
Duke Energy Corp	duk	91.21	3.82	5.20	4.19%	26.0%	5.70%	1.48%	5.67%	7.18%
Emera Inc	ema	55.22	2.46	2.80	4.45%	16.0%	5.07%	0.81%	5.27%	5.88%
Entergy Corp	etr	119.80	3.74	5.45	3.12%	42.0%	4.55%	1.91%	5.03%	6.46%
Eversource Energy	es	85.07	2.27	3.65	2.67%	38.0%	4.29%	1.63%	4.30%	5.92%
Exelon Corp	exc	45.24	1.53	3.15	3.38%	53.0%	6.96%	3.69%	7.07%	10.65%
FirstEnergy Corp	fe	48.60	1.57	1.90	3.23%	19.0%	3.91%	0.74%	3.97%	4.65%
Fortis Inc	fts	41.07	1.97	2.55	4.80%	55.0%	6.21%	3.41%	8.21%	9.62%
Hawaiian Electric	he	46.55	1.32	2.00	2.84%	32.0%	4.30%	1.37%	4.21%	5.67%
Idacorp Inc	ida	106.80	2.73	4.60	2.56%	43.0%	4.31%	1.85%	4.41%	6.16%
MGE Energy Inc	mgee	78.46	1.45	2.60	1.85%	45.0%	3.31%	1.49%	3.34%	4.80%
NorthWestern Corp	nwe	71.67	2.40	3.50	3.35%	36.0%	4.88%	1.76%	5.11%	6.64%
OGE Energy Corp	oge	44.47	1.60	2.25	3.60%	33.0%	5.06%	1.67%	5.27%	6.73%
Otter Tail Corp	ottr	50.94	1.48	2.25	2.91%	36.0%	4.42%	1.59%	4.50%	6.01%
PNM Resources Inc	pnm	50.71	1.24	2.25	2.45%	47.0%	4.44%	2.09%	4.53%	6.52%
Portland General Ele	por	55.79	1.62	2.55	2.90%	37.0%	4.57%	1.69%	4.59%	6.26%
P.S. Enterprise Grou	peg	58.52	1.96	3.40	3.35%	49.0%	5.81%	2.85%	6.20%	8.66%
Sempra Energy	sre	149.93	4.20	6.85	2.80%	31.0%	4.57%	1.42%	4.22%	5.99%
WEC Energy Group I	wec	92.23	2.53	3.75	2.74%	34.0%	4.07%	1.38%	4.13%	5.45%
Xcel Energy Inc	xel	63.49	1.72	2.75	2.71%	38.0%	4.33%	1.65%	4.36%	5.98%
								Mean	**4.88%**	**6.49%**
								Harmonic Mean	**4.72%**	**6.31%**
								Median	**4.59%**	**6.16%**
								Std Dev	**0.99%**	**1.25%**
								Coefficient of Variation	**20.21%**	**19.32%**
									say	**6.25%**

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

Washington State Department of Revenue

2020 Assessment Year

Electric Industry

Company	Ticker	Stock Price	Expected Earnings	P/E	Payout Ratio	ROE	Ke
Alliant Energy Corp	lnt	54.72	2.40	22.80	63.00%	10.50%	6.41%
Ameren Corp	aee	76.80	3.50	21.94	57.00%	9.50%	7.07%
Avangrid Inc	agr	50.74	2.45	20.71	72.00%	5.00%	7.37%
Avista Corp	ava	48.09	2.05	23.46	78.00%	7.00%	5.87%
Black Hills	bkh	78.04	3.65	21.38	59.00%	9.00%	6.59%
CMS Energy Corp	cms	62.84	2.60	24.17	62.00%	13.50%	6.34%
CenterPoint Energy	cnp	26.98	1.50	17.99	80.00%	9.50%	9.11%
Chesapeake Utilities	cpk	95.41	3.65	26.14	46.00%	9.00%	6.41%
Con. Edison Inc	ed	90.47	4.40	20.56	69.00%	8.00%	7.25%
Dominion Energy	D	81.92	4.40	18.62	86.00%	12.00%	8.79%
DTE Energy Co	dte	128.43	6.50	19.76	63.00%	10.00%	8.19%
Duke Energy Corp	duk	91.21	5.20	17.54	73.00%	8.00%	8.94%
Emera Inc	ema	55.22	2.80	19.72	86.00%	8.50%	9.08%
Entergy Corp	etr	119.80	5.45	21.98	69.00%	10.00%	7.04%
Eversource Energy	es	85.07	3.65	23.31	62.00%	9.00%	6.04%
Exelon Corp	exc	45.24	3.15	14.36	47.00%	9.00%	11.68%
FirstEnergy Corp	fe	48.60	1.90	25.58	83.00%	13.00%	7.64%
Fortis Inc	fts	41.07	2.55	16.11	47.00%	7.00%	10.15%
Hawaiian Electric	he	46.55	2.00	23.28	67.00%	9.00%	5.29%
Idacorp Inc	ida	106.80	4.60	23.22	59.00%	9.00%	5.44%
MGE Energy Inc	mgee	78.46	2.60	30.18	56.00%	10.00%	3.23%
NorthWestern Corp	nwe	71.67	3.50	20.48	68.00%	8.50%	6.45%
OGE Energy Corp	oge	44.47	2.25	19.76	71.00%	10.50%	7.91%
Otter Tail Corp	ottr	50.94	2.25	22.64	65.00%	10.35%	6.30%
PNM Resources Inc	pnm	50.71	2.25	22.54	55.00%	10.50%	5.57%
Portland General Ele	por	55.79	2.55	21.88	63.00%	8.50%	6.40%
P.S. Enterprise Grou	peg	58.52	3.40	17.21	57.00%	11.00%	9.73%
Sempra Energy	sre	149.93	6.85	21.89	64.00%	10.00%	7.27%
WEC Energy Group	wec	92.23	3.75	24.59	67.00%	11.50%	5.65%
Xcel Energy Inc	xel	63.49	2.75	23.09	62.00%	10.00%	5.80%
Mean				**21.56**	**65.20%**	**9.55%**	**7.17%**
Harmonic Mean				**21.08**	**63.54%**	**9.20%**	**6.75%**
Median				**21.92**	**63.50%**	**9.50%**	**6.82%**
Industry Summary				**21.50**	**64.00%**	**9.50%**	
						Say	**7.00%**

SUPPORT FOR DEBT RATING AND DEBT YIELD RATE

Washington State Department of Revenue

2020 Assessment Year

Electric Industry

Company	Ticker	Mergent's Ratings	S&P Ratings
Alliant Energy Corp	lnt	Baa2	A-
Ameren Corp	aee	Baa1	BBB+
Avangrid Inc	agr	Baa1	BBB+
Avista Corp	ava	Baa2	BBB
Black Hills	bkh	Baa2	BBB+
CMS Energy Corp	cms	Baa1	BBB+
CenterPoint Energy Inc	cnp	Baa2	BBB+
Chesapeake Utilities	cpk		
Con. Edison Inc	ed	Baa1	A-
Dominion Energy	D	Baa2	BBB+
DTE Energy Co	dte	Baa2	BBB+
Duke Energy Corp	duk	Baa1	A-
Emera Inc	ema	Baa3	BBB
Entergy Corp	etr	Baa2	BBB+
Eversource Energy	es	Baa1	A-
Exelon Corp	exc	Baa2	BBB+
FirstEnergy Corp	fe	Baa3	BBB
Fortis Inc	fts	Baa3	A-
Hawaiian Electric	he	Baa2	BBB-
Idacorp Inc	ida	Baa1	BBB
MGE Energy Inc	mgee	A1	AA-
NorthWestern Corp	nwe	Baa2	BBB
OGE Energy Corp	oge	Baa1	BBB+
Otter Tail Corp	ottr	A3	BBB
PNM Resources Inc	pnm	Baa3	BBB+
Portland General Elec Co	por	A3	BBB+
P.S. Enterprise Group	peg	Baa1	BBB+
Sempra Energy	sre	Baa1	BBB+
WEC Energy Group Inc	wec	Baa1	A-
Xcel Energy Inc	xel	Baa1	A-

Overall Average Debt Rating		**Baa1**	**BBB+**

Mergent's Bond Record January 2020, page 234

Corporate	Aaa	Aa	A	Baa
October	3.01%	3.13%	3.37%	3.93%
November	3.06%	3.16%	3.40%	3.94%
December	3.01%	3.11%	3.36%	3.88%
4th Qtr Average	**3.03%**	**3.13%**	**3.38%**	**3.92%**

Public Utilities	Aaa	Aa	A	Baa
October		3.24%	3.39%	3.72%
November		3.25%	3.43%	3.76%
December		3.22%	3.40%	3.73%
4th Qtr Average		**3.24%**	**3.41%**	**3.74%**

Industrials	Aaa	Aa	A	Baa
October	3.01%	3.01%	3.35%	4.12%
November	3.06%	3.06%	3.37%	4.12%
December	3.01%	3.00%	3.32%	4.03%
4th Qtr Average	**3.03%**	**3.02%**	**3.35%**	**4.09%**

		Avg YTM	Med YTM
Moody's LT Bond Yield	**Baa1**	4.85%	4.67%
S&P's LT Bond Yield	**BBB+**	5.22%	5.15%

Bloomberg Dec 2019		20Y	25Y	30Y
	BBB+	3.68%	3.65%	3.57%

Debt Yield Rate	**4.50%**

to page 1

SUPPORT FOR DIRECT CAPITALIZATION EQUITY COMPONENT

2020 Assessment Year

Electric Industry

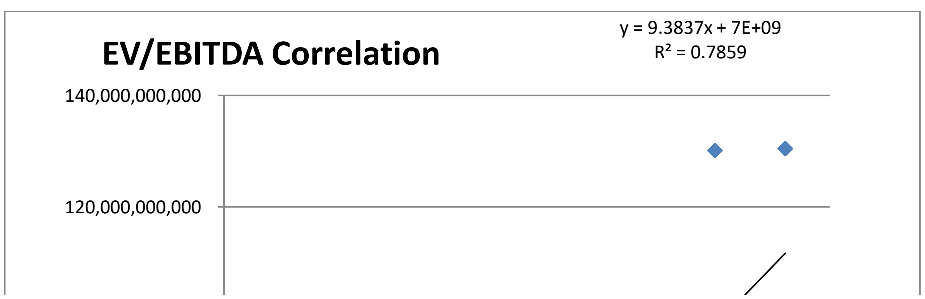
Company	Ticker	Stock Price	2019 Actual Earnings Ratio (EPS/P)		2020 Projected Earnings Ratio (PEPS/P)		2019 Cash Flow Ratio (CF/P)		2020 Projected Cash Flow Ratio	
Alliant Energy Corp	lnt	54.72	2.33	4.3%	2.40	4.4%	4.59	8.4%	4.70	8.6%
Ameren Corp	aee	76.80	3.35	4.4%	3.50	4.6%	7.83	10.2%	8.15	10.6%
Avangrid Inc	agr	50.74	2.40	4.7%	2.45	4.8%	5.45	10.7%	5.65	11.1%
Avista Corp	ava	48.09	2.90	6.0%	2.05	4.3%	5.95	12.4%	5.15	10.7%
Black Hills	bkh	78.04	3.45	4.4%	3.65	4.7%	6.85	8.8%	7.15	9.2%
CMS Energy Corp	cms	62.84	2.39	3.8%	2.60	4.1%	5.89	9.4%	6.25	9.9%
CenterPoint Energy Inc	cnp	26.98	1.49	5.5%	1.50	5.6%	4.12	15.3%	4.25	15.8%
Chesapeake Utilities	cpk	95.41	3.40	3.6%	3.65	3.8%	6.65	7.0%	7.10	7.4%
Con. Edison Inc	ed	90.47	3.95	4.4%	4.40	4.9%	8.60	9.5%	9.45	10.4%
Dominion Energy	D	81.92	2.15	2.6%	4.40	5.4%	5.90	7.2%	8.35	10.2%
DTE Energy Co	dte	128.43	6.31	4.9%	6.50	5.1%	12.97	10.1%	13.75	10.7%
Duke Energy Corp	duk	91.21	5.05	5.5%	5.20	5.7%	11.80	12.9%	12.05	13.2%
Emera Inc	ema	55.22	2.77	5.0%	2.80	5.1%	6.65	12.0%	6.65	12.0%
Entergy Corp	etr	119.80	6.30	5.3%	5.45	4.5%	17.19	14.3%	16.90	14.1%
Eversource Energy	es	85.07	3.45	4.1%	3.65	4.3%	7.15	8.4%	7.35	8.6%
Exelon Corp	exc	45.24	3.00	6.6%	3.15	7.0%	9.00	19.9%	9.45	20.9%
FirstEnergy Corp	fe	48.60	1.85	3.8%	1.90	3.9%	4.10	8.4%	5.30	10.9%
Fortis Inc	fts	41.07	2.68	6.5%	2.55	6.2%	5.44	13.2%	5.60	13.6%
Hawaiian Electric	he	46.55	1.90	4.1%	2.00	4.3%	4.35	9.3%	4.50	9.7%
Idacorp Inc	ida	106.80	4.45	4.2%	4.60	4.3%	7.95	7.4%	8.20	7.7%
MGE Energy Inc	mgee	78.46	2.51	3.2%	2.60	3.3%	4.57	5.8%	4.75	6.1%
NorthWestern Corp	nwe	71.67	3.55	5.0%	3.50	4.9%	7.10	9.9%	7.15	10.0%
OGE Energy Corp	oge	44.47	2.24	5.0%	2.25	5.1%	4.02	9.0%	4.15	9.3%
Otter Tail Corp	ottr	50.94	2.17	4.3%	2.25	4.4%	4.11	8.1%	4.20	8.2%
PNM Resources Inc	pnm	50.71	2.20	4.3%	2.25	4.4%	5.80	11.4%	6.05	11.9%
Portland General Elec Co	por	55.79	2.40	4.3%	2.55	4.6%	7.00	12.5%	7.45	13.4%
P.S. Enterprise Group	peg	58.52	3.70	6.3%	3.40	5.8%	6.60	11.3%	6.50	11.1%
Sempra Energy	sre	149.93	5.85	3.9%	6.85	4.6%	11.15	7.4%	12.35	8.2%
WEC Energy Group Inc	wec	92.23	3.58	3.9%	3.75	4.1%	6.53	7.1%	6.95	7.5%
Xcel Energy Inc	xel	63.49	2.60	4.1%	2.75	4.3%	6.20	9.8%	6.60	10.4%
		Mean		**4.6%**		**4.7%**		**10.2%**		**10.7%**
		Harmonic Mean		**4.4%**		**4.6%**		**9.6%**		**10.1%**
		Median		**4.4%**		**4.6%**		**9.6%**		**10.4%**
		Max		**6.6%**		**7.0%**		**19.9%**		**20.9%**
		Min		**2.6%**		**3.3%**		**5.8%**		**6.1%**
		Std Dev		**1.0%**		**0.8%**		**3.0%**		**2.9%**
		Coefficient of Variation		**20.7%**		**15.9%**		**28.9%**		**27.1%**
		Say		**4.4%**		**4.4%**		**10.0%**		**10.0%**

Source: Value Line / yr end stock price

SUPPORT FOR DIRECT CAPITALIZATION EQUITY COMPONENT

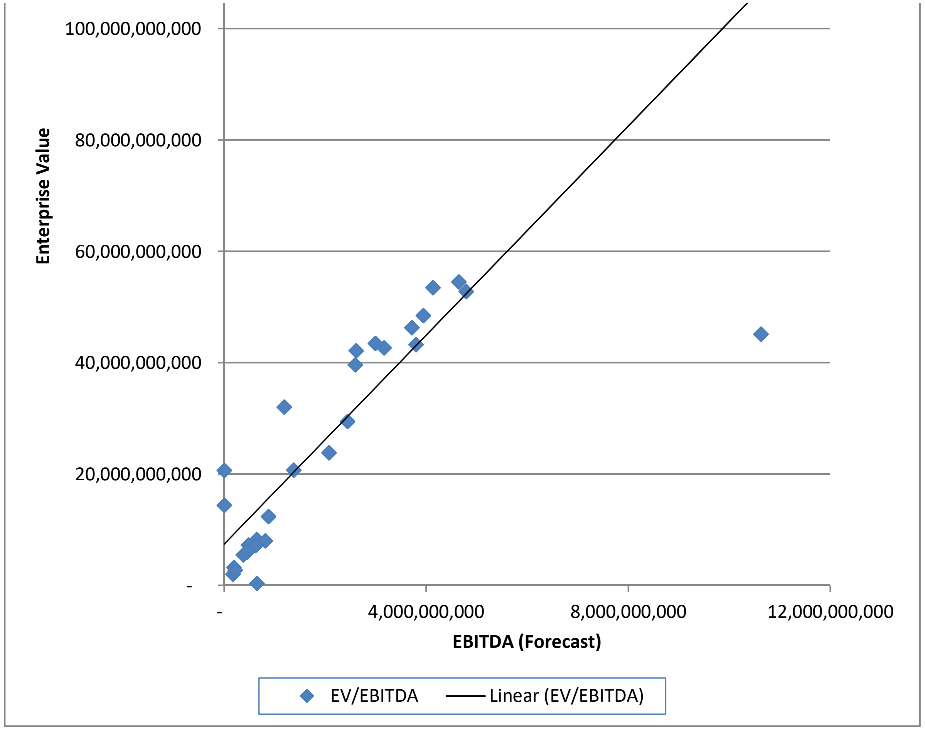
2020 Assessment Year

Company	Ticker	Stock Price	Enterprise Value	EBITDA Historical	Annual Change VL	EBITDA Forecast	EV / EBITDA Forecast	Revenue Forecast	EV / Sales Forecast	CF Forecast	Debt Svc	EV/CF Forecast
Alliant Energy Corp	lnt	54.72	20,727,547,616	1,344,900,000	2.40%	1,377,130,719	15.05	3,687,593,140	5.62	1,151,607,160	311,395,500	14.17
Ameren Corp	aee	76.80	29,493,595,482	2,348,000,000	4.09%	2,443,959,132	12.07	6,057,300,115	4.87	2,006,788,453	469,845,000	11.91
Avangrid Inc	agr	50.74	23,846,927,501	2,001,000,000	3.67%	2,074,431,193	11.50	6,597,262,557	3.61	1,745,879,787	367,560,000	11.28
Avista Corp	ava	48.09	5,480,408,255	436,058,000	-13.45%	377,428,353	14.52	1,374,224,867	3.99	343,556,217	102,254,715	12.29
Black Hills	bkh	78.04	8,275,242,701	615,162,000	4.38%	642,103,401	12.89	1,769,877,245	4.68	439,396,608	156,571,515	13.89
CMS Energy Corp	cms	62.84	32,061,157,888	1,115,900,000	6.11%	1,184,104,414	27.08	6,969,308,182	4.60	1,774,263,794	638,325,000	13.29
CenterPoint Energy	cnp	26.98	39,655,521,131	2,517,000,000	3.16%	2,596,419,903	15.27	12,304,958,033	3.22	2,134,533,536	1,094,715,000	12.28
Chesapeake Utilitie	cpk	95.41	2,070,084,268	160,939,000	6.77%	171,829,609	12.05	636,466,509	3.25	116,466,810	22,725,000	14.87
Con. Edison Inc	ed	90.47	52,812,979,012	4,360,000,000	9.88%	4,790,930,233	11.02	12,865,056,790	4.11	3,141,467,356	1,023,210,000	12.68
Dominion Energy	D	81.92	130,150,809,772	6,864,000,000	41.53%	9,714,305,085	13.40	17,737,662,361	7.34	6,872,829,731	2,750,715,000	13.52
DTE Energy Co	dte	128.43	42,719,702,521	2,985,000,000	6.01%	3,164,514,264	13.50	13,379,535,120	3.19	2,643,227,125	811,395,000	12.37
Duke Energy Corp	duk	91.21	130,530,087,890	10,881,000,000	2.12%	11,111,529,661	11.75	25,042,279,016	5.21	8,784,846,059	2,837,790,000	11.23
Emera Inc	ema	55.22	14,393,745,600	-	0.00%	-	#DIV/0!	6,158,992,000	2.34	1,612,492,000	-	8.93
Entergy Corp	etr	119.80	43,241,613,212	3,862,837,000	-1.69%	3,797,669,884	11.39	10,885,107,221	3.97	3,375,381,872	857,697,750	10.22
Eversource Energy	es	85.07	43,494,081,703	2,910,823,000	2.80%	2,992,244,622	14.54	8,353,043,939	5.21	2,379,646,239	710,824,500	14.07
Exelon Corp	exc	45.24	45,151,205,053	10,122,000,000	5.00%	10,628,100,000	4.25	36,113,844,335	1.25	9,186,428,774	52,785,000	4.89
FirstEnergy Corp	fe	48.60	48,491,244,010	3,053,000,000	29.27%	3,946,560,976	12.29	10,893,785,955	4.45	2,710,660,355	1,031,760,000	12.96
Fortis Inc	fts	41.07	20,658,945,000	-	2.94%	-	#DIV/0!	8,945,550,000	2.31	2,595,600,000	-	7.96
Hawaiian Electric	he	46.55	367,033,854	626,787,000	3.45%	648,400,345	0.57	2,969,502,369	0.12	490,376,538	75,158,505	0.65
Idacorp Inc	ida	106.80	7,276,083,757	461,150,000	3.14%	475,651,572	15.30	1,401,047,053	5.19	413,258,483	93,776,895	14.35
MGE Energy Inc	mgee	78.46	3,279,168,310	183,354,000	3.94%	190,575,821	17.21	580,695,198	5.65	164,674,758	27,535,905	17.06
NorthWestern Corp	nwe	71.67	6,032,338,664	449,773,000	0.70%	452,940,415	13.32	1,288,916,634	4.68	360,694,870	108,756,630	12.85
OGE Energy Corp	oge	44.47	12,402,287,110	849,500,000	3.23%	876,971,393	14.14	2,402,128,296	5.16	830,736,036	157,518,000	12.55
Otter Tail Corp	ottr	50.94	2,725,680,263	212,966,000	2.19%	217,629,489	12.52	936,994,938	2.91	168,900,375	33,402,555	13.47
PNM Resources Inc	pnm	50.71	7,193,439,273	596,363,000	4.31%	622,068,302	11.56	1,549,262,987	4.64	481,904,425	141,421,680	11.54
Portland General E	por	55.79	8,017,959,526	762,000,000	6.43%	810,985,714	9.89	2,141,871,816	3.74	664,872,710	136,755,000	10.00
P.S. Enterprise Grp	peg	58.52	46,318,112,732	3,771,000,000	-1.52%	3,713,863,636	12.47	10,392,678,856	4.46	3,287,222,023	752,535,000	11.47
Sempra Energy	sre	149.93	54,545,657,684	4,196,000,000	10.76%	4,647,587,444	11.74	11,275,837,440	4.84	3,481,414,810	450,135,000	13.87
WEC Energy Group	wec	92.23	42,158,924,927	2,457,700,000	6.43%	2,615,775,651	16.12	7,996,292,333	5.27	2,192,277,385	586,615,500	15.17
Xcel Energy Inc	xel	63.49	53,520,400,215	3,885,000,000	6.45%	4,135,645,161	12.94	12,323,120,256	4.34	3,460,961,434	910,215,000	12.24
30		**Mean**					**#DIV/0!**		**4.14**			**11.93**
		Harmonic Mean					**#DIV/0!**		**1.91**			**7.45**
		Median					**#DIV/0!**		**4.45**			**12.46**
		Std Dev					**#DIV/0!**		**1.42**			**3.15**
		Say					**11.00**		**4.00**			**12.00**



Forecast EV/EBITDA By Rank

Guideline Companies	EV/EBITDA forecast
Hawaiian Electric	0.57
Emera Inc	#DIV/0!
Portland General Elec Co	9.89
Con. Edison Inc	11.02
Entergy Corp	11.39
Avangrid Inc	11.50
PNM Resources Inc	11.56



Sempra Energy	11.74		
Duke Energy Corp	11.75		
Chesapeake Utilities	12.05		
Ameren Corp	12.07		
FirstEnergy Corp	12.29	**#DIV/0!**	**Low Average**
P.S. Enterprise Group	12.47	**#DIV/0!**	**Low Median**
Otter Tail Corp	12.52	**11.00**	**Say**
Black Hills	12.89		
Xcel Energy Inc	12.94	**#N/A**	**High Average**
NorthWestern Corp	13.32	**#N/A**	**High Median**
Dominion Energy	13.40		
DTE Energy Co	13.50	**15.00**	**Say**
OGE Energy Corp	14.14		
Avista Corp	14.52		
Eversource Energy	14.54		
Alliant Energy Corp	15.05		
CenterPoint Energy Inc	15.27		
Idacorp Inc	15.30		
WEC Energy Group Inc	16.12		
MGE Energy Inc	17.21		
CMS Energy Corp	27.08		
#N/A	#N/A		
#N/A	#N/A		

STOCK PRICE

Washington State Department of Revenue

2020 Assessment Year

Electric Industry

								72.85
								Year End
Alliant Energy Corp	lnt							
Date	Open	High	Low	Close	Adj Close		Volume	
12/31/2019	54.41	54.76	54.26	54.72		54.72	1,450,100	**54.72**
Ameren Corp	aee							
Date	Open	High	Low	Close	Adj Close		Volume	
12/31/2019	76.54	77.04	76.49	76.8		76.8	1,388,900	**76.80**
Avangrid	agr							
Date	Open	High	Low	Close	Adj Close		Volume	
12/31/2019	50.84	51.16	50.78	51.16		50.74	316,900	**50.74**
Avista	ava							
Date	Open	High	Low	Close	Adj Close		Volume	
12/31/2019	47.82	48.2	47.75	48.09		48.09	337,900	**48.09**
Black Hills	bkh							
Date	Open	High	Low	Close	Adj Close		Volume	
12/31/2019	78.05	78.98	78.05	78.54		78.04	301,900	**78.04**
CMS Energy Corp	cms							
Date	Open	High	Low	Close	Adj Close		Volume	
12/31/2019	62.56	62.88	62.47	62.84		62.84	1,041,900	**62.84**
CenterPoint Energy	cnp							
Date	Open	High	Low	Close	Adj Close		Volume	
12/31/2019	26.91	27.28	26.88	27.27		26.98	3,443,200	**26.98**
Chesapeake Util	cpk							
Date	Open	High	Low	Close	Adj Close		Volume	
12/31/2019	94.84	95.83	94.84	95.83		95.41	100,000	**95.41**
Consolidated Edison	ed							
Date	Open	High	Low	Close	Adj Close		Volume	
12/31/2019	90.19	90.49	89.82	90.47		90.47	1,153,600	**90.47**
Dominion Energy	D							
Date	Open	High	Low	Close	Adj Close		Volume	
12/31/2019	82.27	82.86	82.06	82.82		81.92	2,856,600	**81.92**
DTE Energy	dte							
Date	Open	High	Low	Close	Adj Close		Volume	
12/31/2019	129.27	129.96	129.12	129.87		128.43	837,800	**128.43**
Duke Energy	duk							

Date		Open	High	Low	Close	Adj Close	Volume	
	12/31/2019	90.89	91.24	90.62	91.21	91.21	2,540,700	**91.21**

Entergy Corp		etr						
Date		Open	High	Low	Close	Adj Close	Volume	
	12/31/2019	119.34	119.85	118.97	119.8	119.8	1,045,400	**119.80**

Emera		ema						
Date		Open	High	Low	Close	Adj Close	Volume	
	12/31/2019	55.5	55.86	55.26	55.79	55.22	537,000	**55.22**

Eversource Energy		es						
Date		Open	High	Low	Close	Adj Close	Volume	
	12/31/2019	84.45	85.09	84.39	85.07	85.07	1,625,900	**85.07**

Exelon		exc						
Date		Open	High	Low	Close	Adj Close	Volume	
	12/31/2019	45.39	45.64	45.18	45.59	45.24	3,691,100	**45.24**

FirstEnergy Corp		fe						
Date		Open	High	Low	Close	Adj Close	Volume	
	12/31/2019	48.49	48.61	48.18	48.6	48.6	2,929,700	**48.60**

Fortis		fts						
Date		Open	High	Low	Close	Adj Close	Volume	
	12/31/2019	41.29	41.61	41.25	41.52	41.07	236,000	**41.07**

Hawaiin		he						
Date		Open	High	Low	Close	Adj Close	Volume	
	12/31/2019	46.79	47.18	46.53	46.86	46.55	379,400	**46.55**

Idacorp		ida						
Date		Open	High	Low	Close	Adj Close	Volume	
	12/31/2019	106.65	107.5	106.44	106.8	106.80	292,800	**106.80**

MGE Energy		mgee						
Date		Open	High	Low	Close	Adj Close	Volume	
	12/31/2019	78.87	79.39	78.58	78.82	78.46	123,800	**78.46**

NorthWestern Corp		nwe						
Date		Open	High	Low	Close	Adj Close	Volume	
	12/31/2019	71.57	72.08	71.55	71.67	71.67	353,800	**71.67**

OGE Energy Corp		oge						
Date		Open	High	Low	Close	Adj Close	Volume	
	12/31/2019	44.26	44.55	44.16	44.47	44.47	1,138,700	**44.47**

Ottertail		ottr						
Date		Open	High	Low	Close	Adj Close	Volume	
	12/31/2019	51.08	51.44	50.93	51.29	50.94	81,700	**50.94**

Pinnacle		pnw						
Date		Open	High	Low	Close	Adj Close	Volume	
	12/31/2019	89.33	89.98	89.28	89.93	89.93	882,500	**89.93**

PNM Resources Inc	pnm						
Date	Open	High	Low	Close	Adj Close	Volume	
12/31/2019	50.54	50.90	50.52	50.71	50.71	316,600	**50.71**

Portland General	por						
Date	Open	High	Low	Close	Adj Close	Volume	
12/31/2019	55.76	56.06	55.6	55.79	55.79	612,300	**55.79**

P.S. Enterprise	peg						
Date	Open	High	Low	Close	Adj Close	Volume	
12/31/2019	58.9	59.38	58.6	59.05	58.52	2,877,600	**58.52**

Sempra	sre						
Date	Open	High	Low	Close	Adj Close	Volume	
12/31/2019	151.17	151.83	150.78	151.48	149.93	1,003,000	**149.93**

WEC Energy	wec						
Date	Open	High	Low	Close	Adj Close	Volume	
12/31/2019	92.35	92.86	91.8	92.23	92.23	1,387,800	**92.23**

Xcel energy	xel						
Date	Open	High	Low	Close	Adj Close	Volume	
12/31/2019	63.29	63.55	63.14	63.49	63.49	2,136,900	**63.49**

Source:
finance.yahoo.com
Historical Stock Quotes

IMPLIED PREMIUMS FOR US MARKET

Updated January 5, 2020

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

Year	***arnings Yiel***	***ividend Yiel***	***S&P 500***	***Earnings****	***Dividends****	***ends + Buyb***	***nge in Earni***	***ge in Divide***	***T.Bill Rate***	***T.Bond Rate***	***Bond-Bill***	***oothed Grow***	***d Premium (***	***t Growth Es***	***ed Premium (***
1960	5.34%	3.41%	58.11	3.10	1.98				2.66%	2.76%	0.10%	2.45%			
1961	4.71%	2.85%	71.55	3.37	2.04		8.60%	2.91%	2.13%	2.35%	0.22%	2.41%	2.92%		2.92%
1962	5.81%	3.40%	63.1	3.67	2.15		8.79%	5.21%	2.73%	3.85%	1.12%	4.05%	3.56%		3.56%
1963	5.51%	3.13%	75.02	4.13	2.35		12.75%	9.45%	3.12%	4.14%	1.02%	4.96%	3.38%		3.38%
1964	5.62%	3.05%	84.75	4.76	2.58		15.23%	10.08%	3.54%	4.21%	0.67%	5.13%	3.31%		3.31%
1965	5.73%	3.06%	92.43	5.30	2.83		11.20%	9.42%	3.93%	4.65%	0.72%	5.46%	3.32%		3.32%
1966	6.74%	3.59%	80.33	5.41	2.88		2.23%	1.96%	4.76%	4.64%	-0.12%	4.19%	3.68%		3.68%
1967	5.66%	3.09%	96.47	5.46	2.98		0.85%	3.37%	4.21%	5.70%	1.49%	5.25%	3.20%		3.20%
1968	5.51%	2.93%	103.86	5.72	3.04		4.81%	2.09%	5.21%	6.16%	0.95%	5.32%	3.00%		3.00%
1969	6.63%	3.52%	92.06	6.10	3.24		6.66%	6.49%	6.58%	7.88%	1.30%	7.55%	3.74%		3.74%
1970	5.98%	3.46%	92.15	5.51	3.19		-9.72%	-1.61%	6.53%	6.50%	-0.03%	4.78%	3.41%		3.41%
1971	5.46%	3.10%	102.09	5.57	3.16		1.15%	-0.74%	4.39%	5.89%	1.50%	4.57%	3.09%		3.09%
1972	5.23%	2.70%	118.05	6.17	3.19		10.76%	0.71%	3.84%	6.41%	2.57%	5.21%	2.72%		2.72%
1973	8.16%	3.70%	97.55	7.96	3.61		28.93%	13.24%	6.93%	6.90%	-0.03%	8.30%	4.30%		4.30%
1974	13.64%	5.43%	68.56	9.35	3.72		17.48%	3.14%	8.00%	7.40%	-0.60%	6.42%	5.59%		5.59%
1975	8.55%	4.14%	90.19	7.71	3.73		-17.54%	0.30%	5.80%	7.76%	1.96%	5.99%	4.13%		4.13%
1976	9.07%	3.93%	107.46	9.75	4.22		26.39%	13.10%	5.08%	6.81%	1.73%	8.19%	4.55%		4.55%
1977	11.43%	5.11%	95.1	10.87	4.86		11.53%	15.07%	5.12%	7.78%	2.66%	9.52%	5.92%		5.92%
1978	12.11%	5.39%	96.11	11.64	5.18		7.07%	6.60%	7.18%	9.15%	1.97%	8.48%	5.72%		5.72%
1979	13.48%	5.53%	107.94	14.55	5.97		25.01%	15.23%	10.38%	10.33%	-0.05%	11.70%	6.45%		6.45%
1980	11.04%	4.74%	135.76	14.99	6.44		3.01%	7.81%	11.24%	12.43%	1.19%	11.01%	5.03%		5.03%
1981	12.39%	5.57%	122.55	15.18	6.83		1.31%	6.08%	14.71%	13.98%	-0.73%	11.42%	5.73%		5.73%
1982	9.83%	4.93%	140.64	13.82	6.93		-8.95%	1.58%	10.54%	10.47%	-0.07%	7.96%	4.90%		4.90%
1983	8.06%	4.32%	164.93	13.29	7.12		-3.84%	2.76%	8.80%	11.80%	3.00%	9.09%	4.31%		4.31%
1984	10.07%	4.68%	167.24	16.84	7.83		26.69%	9.85%	9.85%	11.51%	1.66%	11.02%	5.11%		5.11%
1985	7.42%	3.88%	211.28	15.68	8.20		-6.91%	4.74%	7.72%	8.99%	1.27%	7.89%	4.03%	6.75%	3.84%
1986	5.96%	3.38%	242.17	14.43	8.19		-7.93%	-0.15%	6.16%	7.22%	1.06%	5.54%	3.36%	6.96%	3.58%
1987	6.49%	3.71%	247.08	16.04	9.17		11.10%	11.99%	5.47%	8.86%	3.39%	9.66%	4.18%	8.58%	3.99%
1988	8.20%	3.68%	277.72	24.12	10.22		50.42%	11.49%	6.35%	9.14%	2.79%	9.76%	4.12%	7.67%	3.77%
1989	6.80%	3.32%	353.4	24.32	11.73		0.83%	14.80%	8.37%	7.93%	-0.44%	9.58%	3.85%	7.46%	3.51%
1990	6.58%	3.74%	330.22	22.65	12.35		-6.87%	5.26%	7.81%	8.07%	0.26%	7.39%	3.92%	7.19%	3.89%
1991	4.58%	3.11%	417.09	19.30	12.97		-14.79%	5.03%	7.00%	6.70%	-0.30%	6.34%	3.27%	7.81%	3.48%
1992	4.16%	2.90%	435.71	20.87	12.64		8.13%	-2.59%	5.30%	6.68%	1.38%	4.67%	2.83%	9.83%	3.55%
1993	4.25%	2.72%	466.45	26.90	12.69		28.89%	0.41%	3.50%	5.79%	2.29%	4.73%	2.74%	8.00%	3.17%
1994	5.89%	2.91%	459.27	31.75	13.36		18.03%	5.34%	5.00%	7.82%	2.82%	7.23%	3.06%	7.17%	3.55%
1995	5.74%	2.30%	615.93	37.70	14.17		18.74%	6.00%	3.50%	5.57%	2.07%	5.65%	2.44%	6.50%	3.29%
1996	4.83%	2.01%	740.74	40.63	14.89		7.77%	5.10%	5.00%	6.41%	1.41%	6.13%	2.11%	7.92%	3.20%
1997	4.08%	1.60%	970.43	44.09	15.52		8.52%	4.25%	5.35%	5.74%	0.39%	5.45%	1.67%	8.00%	2.73%
1998	3.11%	1.32%	1229.23	44.27	16.20		0.41%	4.37%	4.33%	4.65%	0.32%	4.60%	1.38%	7.20%	2.26%
1999	3.07%	1.14%	1469.25	51.68	16.71		16.74%	3.16%	5.37%	6.44%	1.07%	5.75%	1.20%	12.50%	2.05%
2000	3.94%	1.23%	1320.28	56.13	16.27		8.61%	-2.65%	5.73%	5.11%	-0.62%	3.71%	1.65%	12.00%	2.87%
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%
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%
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%
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%
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%
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%
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%
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%
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%
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%
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%
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%
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%
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%
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%
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%
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%
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%

DATA INPUT

Washington State Department of Revenue

2020 Assessment Year

Electric Industry

Guideline Companies			Historic Figures (2019)												
		Stock Price 12/31/19	Beta Levered	Fin'l Strength	Revenues Per Share	Cash Flow Per Share	Earnings Per Share	Dividends Per Share	Bk Value Per Share	Mkt/Bk	Common Shares	LTD (BV)	Trailing P/E Ratio	Div Yield	Calculated Debt
Name	Ticker	Yahoo	VL	VL	VL	VL	VL	VL	VL	Formula	VL	V L	V L	V L	Formula
Alliant Energy Corp	lnt	54.72	0.55	A	14.89	4.59	2.33	1.42	21.24	2.58	245,022,800	5,533,000,000	23.5	2.8%	111.79%
Ameren Corp	aee	76.80	0.50	A	24.00	7.83	3.35	1.92	32.73	2.35	246,231,712	8,915,000,000	24.8	2.4%	111.58%
Avangrid Inc	agr	50.74	0.40	B++	2.70	5.45	2.40	1.76	49.50	1.03	309,005,272	6,718,000,000	27.7	3.4%	109.70%
Avista Corp	ava	48.09	0.60	A	20.15	5.95	2.90	1.55	28.80	1.67	66,709,945	1,930,900,000	16.3	3.4%	112.68%
Black Hills	bkh	78.04	0.70	A	28.50	6.85	3.45	2.05	38.25	2.04	61,454,071	3,049,200,000	22.4	2.8%	110.60%
CMS Energy Corp	cms	62.84	0.50	B++	24.11	5.89	2.39	1.53	17.68	3.55	283,882,207	12,027,000,000	26.9	2.6%	108.60%
CenterPoint Energy Inc	cnp	26.98	0.70	B+	24.49	4.12	1.49	0.86	13.10	2.06	502,243,185	14,244,000,000	15.5	5.1%	107.69%
Chesapeake Utilities	cpk	95.41	0.60	A	37.25	6.65	3.40	1.55	35.05	2.72	16,403,776	375,800,000	26.9	1.7%	103.78%
Con. Edison Inc	ed	90.47	0.40	A+	37.70	8.60	3.95	2.96	53.65	1.69	332,430,408	17,537,000,000	21.8	3.3%	113.84%
Dominion Energy	D	81.92	0.50	B++	20.10	5.90	2.15	3.67	34.55	2.37	823,093,381	33,635,000,000	18.9	4.4%	111.75%
DTE Energy Co	dte	128.43	0.50	B++	65.91	12.97	6.31	3.85	60.73	2.11	192,234,700	15,935,000,000	17.9	3.7%	108.58%
Duke Energy Corp	duk	91.21	0.45	A	34.40	11.80	5.05	3.75	61.75	1.48	729,032,868	54,818,000,000	20.2	4.0%	108.49%
Emera Inc	ema	55.22	0.50	B+	25.20	6.65	2.77	2.38	38.40	1.44	242,480,000	13,679,000,000	20.3	4.4%	#DIV/0!
Entergy Corp	etr	119.80	0.60	B++	54.63	17.19	6.30	3.66	51.34	2.33	199,726,738	17,079,000,000	19.3	3.1%	111.60%
Eversource Energy	es	85.07	0.55	A	26.25	7.15	3.45	2.14	37.70	2.26	323,761,393	13,980,000,000	26.5	2.5%	107.59%
Exelon Corp	exc	45.24	0.65	B++	35.50	9.00	3.00	1.45	33.35	1.36	972,108,865	32,446,000,000	20.2	3.2%	#DIV/0!
FirstEnergy Corp	fe	48.60	0.60	B++	20.35	4.10	1.85	1.53	14.10	3.45	511,445,350	19,422,000,000	27.8	3.0%	114.22%
Fortis Inc	fts	41.07	0.60	B++	18.96	5.44	2.68	1.86	36.49	1.13	463,500,000	21,914,000,000	21.3	3.5%	#DIV/0!
Hawaiian Electric	he	46.55	0.55	A	26.60	4.35	1.90	1.28	20.45	2.28	108,972,564	1,885,500,000	25.2	2.8%	111.52%
Idacorp Inc	ida	106.80	0.55	A	27.10	7.95	4.45	2.56	48.85	2.19	50,397,376	1,836,400,000	25.5	2.6%	113.46%
MGE Energy Inc	mgee	78.46	0.50	A+	16.41	4.57	2.51	1.38	24.68	3.18	34,668,370	523,700,000	28.9	2.0%	111.69%
NorthWestern Corp	nwe	71.67	0.60	B++	24.75	7.10	3.55	2.30	40.20	1.78	50,446,835	2,194,100,000	21.3	3.3%	108.22%
OGE Energy Corp	oge	44.47	0.70	A	11.15	4.02	2.24	1.51	20.69	2.15	200,177,358	3,195,200,000	17.2	4.2%	114.76%
Otter Tail Corp	ottr	50.94	0.70	A	22.90	4.11	2.17	1.40	19.46	2.62	40,214,375	689,600,000	22.7	3.0%	107.61%
PNM Resources Inc	pnm	50.71	0.60	B+	18.50	5.80	2.20	1.18	20.80	2.44	79,653,624	2,467,000,000	28.4	2.5%	104.49%
Portland General Elec Co	por	55.79	0.55	B++	23.75	7.00	2.40	1.52	28.90	1.93	89,244,659	2,328,000,000	25.2	2.9%	116.53%
P.S. Enterprise Group	peg	58.52	0.60	A++	19.75	6.60	3.70	1.88	29.65	1.97	505,726,465	14,448,000,000	17.3	3.3%	110.69%
Sempra Energy	sre	149.93	0.70	A	37.95	11.15	5.85	3.87	61.25	2.45	281,895,936	20,995,000,000	25.5	2.8%	115.98%
WEC Energy Group Inc	wec	92.23	0.45	A+	23.85	6.53	3.58	2.36	32.06	2.88	315,435,595	11,211,000,000	27.3	2.6%	109.93%
Xcel Energy Inc	xel	63.49	0.50	A+	22.30	6.20	2.60	1.62	25.15	2.52	524,388,096	16,819,000,000	25.4	2.7%	111.70%
Average													22.9		
Harmonic Mean													22.2		
Median													23.1		

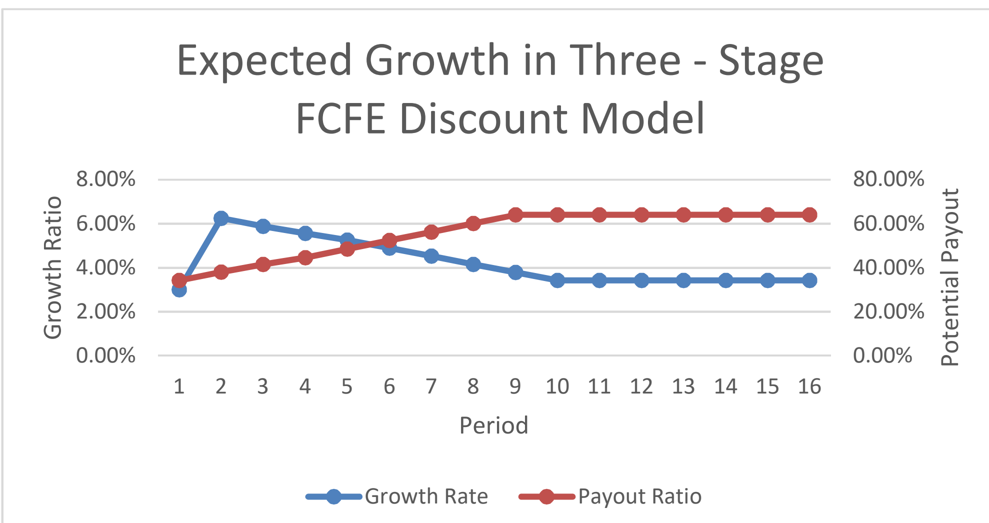
			Projected (Next Year) 2020								Income Statement	Balance Sheet		
Payout Ratio	All Div'ds to Net Profits	Rtn on Shrhldrs Equity	Revenues Per Share	Cash Flow Per Share	Earnings Per Share	Dividends Per Share	Bk Value Per Share	All Div'ds to Net Profits	Rtn on Shrhldrs Equity	CF Projection 22-24	Operating Income	Current Assets	PP & E Gross	Intangibles (excl. GW)
Formula	V L	V L	V L	V L	V L	V L	V L	VL	V L	V L	Morningstar	Morningstar	Morningstar	Morningstar
60.94%	61%	10.7%	15.05	4.70	2.40	1.52	22.95	63%	10.5%	5.30	777,700,000	875,500,000	18,128,500,000	
57.31%	57%	10.3%	24.60	8.15	3.50	2.01	35.80	57%	9.5%	10.25	1,267,000,000	1,431,000,000	37,382,000,000	-
73.33%	73%	5.0%	21.35	5.65	2.45	1.78	49.50	72%	5.0%	7.25	1,003,000,000	2,025,000,000	34,347,000,000	619,000,000
53.45%	53%	10.0%	20.60	5.15	2.05	1.61	29.40	78%	7.0%	6.00	230,064,000	305,129,000	6,775,819,000	-
59.42%	59%	9.0%	28.80	7.15	3.65	2.17	40.30	59%	9.0%	8.25	406,042,000	473,184,000	6,604,206,000	13,266,000
64.02%	64%	13.5%	24.55	6.25	2.60	1.63	19.35	62%	13.5%	7.75	123,900,000	2,331,000,000	26,286,000,000	-
57.72%	80%	10.4%	24.50	4.25	1.50	1.16	14.15	80%	9.5%	4.75	1,274,000,000	3,847,000,000	30,685,000,000	411,000,000
45.59%	46%	9.5%	38.80	7.10	3.65	1.69	40.55	46%	9.0%	10.00	106,287,000	134,826,000	1,812,236,000	12,365,000
74.94%	75%	7.0%	38.70	9.45	4.40	3.06	55.60	69%	8.0%	11.50	2,676,000,000	4,272,000,000	55,459,000,000	1,683,000,000
170.70%	NMF	6.0%	21.55	8.35	4.40	3.76	35.45	86%	12.0%	9.75	3,887,000,000	6,088,000,000	97,466,000,000	1,340,000,000
61.01%	59%	10.0%	69.60	13.75	6.50	4.12	63.55	63%	10.0%	17.00	1,722,000,000	3,086,000,000	35,241,000,000	2,535,000,000
74.26%	74%	8.0%	34.35	12.05	5.20	3.82	64.10	73%	8.0%	14.25	5,705,000,000	9,163,000,000	149,558,000,000	
85.92%	84%	8.3%	25.40	6.65	2.80	2.46	38.35	86%	8.5%	8.25	-	-	-	
58.10%	58%	12.0%	54.50	16.90	5.45	3.74	53.20	69%	10.0%	20.00	1,680,524,000	3,045,992,000	59,332,365,000	
62.03%	62%	9.0%	25.80	7.35	3.65	2.27	40.40	62%	9.0%	8.75	1,830,165,000	2,414,539,000	35,456,400,000	-
48.33%	47%	9.0%	37.15	9.45	3.15	1.53	35.00	47%	9.0%	11.25	4,342,000,000	12,040,000,000	104,210,000,000	1,295,000,000
82.70%	81%	13.0%	21.30	5.30	1.90	1.57	14.55	83%	13.0%	6.25	1,836,000,000	2,444,000,000	43,077,000,000	
69.40%	45%	6.7%	19.30	5.60	2.55	1.97	37.90	47%	7.0%	6.50	-	-	-	-
67.37%	68%	9.0%	27.25	4.50	2.00	1.32	21.30	67%	9.0%	5.00	348,674,000	6,841,412,000	8,074,368,000	
57.53%	57%	9.0%	27.80	8.20	4.60	2.73	50.65	59%	9.0%	9.50	287,350,000	565,146,000	6,687,237,000	
54.98%	55%	10.2%	16.75	4.75	2.60	1.45	25.80	56%	10.0%	6.00	111,792,000	181,641,000	2,388,557,00	
64.79%	64%	9.0%	25.55	7.15	3.50	2.40	41.35	68%	8.5%	8.00	276,850,000	301,727,000	6,553,928,000	-
67.41%	67%	10.9%	12.00	4.15	2.25	1.60	21.35	71%	10.5%	5.00	494,500,000	430,200,000	12,995,400,000	
64.52%	64%	11.1%	23.30	4.20	2.25	1.48	21.25	65%	10.4%	5.25	134,880,000	254,860,000	2,667,329,000	22,670,000
53.64%	53%	10.5%	19.45	6.05	2.25	1.24	21.85	55%	10.5%	6.75	295,295,000	294,010,000	8,365,537,000	
63.33%	63%	8.5%	24.00	7.45	2.55	1.62	29.85	63%	8.5%	8.75	353,000,000	500,000,000	11,256,000,000	-
50.81%	51%	12.5%	20.55	6.50	3.40	1.96	31.10	57%	11.0%	8.25	2,345,000,000	3,231,000,000	46,226,000,000	149,000,000
66.15%	69%	9.0%	40.00	12.35	6.85	4.20	65.85	64%	10.0%	15.00	2,627,000,000	3,339,000,000	49,920,000,000	250,000,000
65.92%	66%	11.2%	25.35	6.95	3.75	2.53	33.15	67%	11.5%	9.00	1,531,400,000	2,093,600,000	32,498,800,000	
62.31%	62%	10.5%	23.50	6.60	2.75	1.72	27.20	62%	10.0%	7.75	2,104,000,000	3,113,000,000	60,596,000,000	-
	62.7%	9.6%						65.2%	9.55%	8.91				
	61.1%	9.2%						63.5%	9.20%	7.82				
	62.0%	9.8%						63.5%	9.50%	8.25				

		Cash Flow Statement	Other Financials	
Current Liabilities	**Long Term Debt Less Current Maturities**	**Depreciation & Amortization**	**Carrying Value Debt**	**Fair Value Debt**
Morningstar	**Morningstar**	**Morningstar**	**10-K**	**10-K**
2,054,100,000	5,533,000,000	567,200,000	6,190,200,000	6,919,900,000
2,505,000,000	8,915,000,000	1,081,000,000	9,357,000,000	10,441,000,000
3,587,000,000	6,716,000,000	998,000,000	7,446,000,000	8,168,000,000
530,713,000	1,946,862,000	205,994,000	2,016,597,000	2,272,327,000
811,294,000	3,140,096,000	209,120,000	3,145,839,000	3,479,367,000
2,704,000,000	11,951,000,000	992,000,000	13,062,000,000	14,185,000,000
3,888,000,000	868,000,000	1,243,000,000	22,589,000,000	24,327,000,000
423,324,000	450,064,000	54,652,000	486,600,000	505,000,000
6,287,000,000	18,527,000,000	1,684,000,000	19,973,000,000	22,738,000,000
9,939,000,000	33,824,000,000	2,977,000,000	54,698,000,000	61,127,000,000
3,997,000,000	16,062,000,000	1,263,000,000	16,606,000,000	18,031,000,000
14,752,000,000	54,016,000,000	5,176,000,000	58,126,000,000	63,062,000,000
-	-	-	-	-
5,620,463,000	17,078,643,000	2,182,313,000	17,078,643,000	19,059,950,000
3,605,563,000	14,310,950,000	1,080,658,000	14,681,500,000	15,796,100,000
14,185,000,000	31,719,000,000	5,780,000,000		1,173,000,000
4,862,000,000	19,618,000,000	1,217,000,000	20,074,000,000	22,928,000,000
-	-	-	-	-
431,284,000	2,279,046,000	278,113,000	1,497,667,000	1,670,189,000
374,859,000	1,736,659,000	173,800,000	1,836,659,000	2,083,931,000
128,820,000	523,741,000	71,562,000	547,879,000	611,909,000
334,267,000	2,233,281,000	172,923,000	2,233,281,000	2,416,814,000
657,900,000	3,195,200,000	355,000,000	3,050,300,000	3,500,400,000
189,741,000	689,581,000	78,086,000	689,764,000	742,279,000
967,481,000	2,517,449,000	301,068,000	3,007,717,000	3,142,704,000
519,000,000	2,732,000,000	409,000,000	2,608,000,000	3,039,000,000
5,047,000,000	13,743,000,000	1,426,000,000	15,108,000,000	16,723,000,000
9,150,000,000	20,785,000,000	1,569,000,000	8,625,000,000	10,003,000,000
3,182,700,000	11,211,000,000	926,300,000	11,858,300,000	13,035,900,000
4,568,000,000	18,956,000,000	1,781,000,000	18,109,000,000	20,227,000,000

Three Stage Free Cash Flow to Equity Discount Model

Company	Alliant Energy C	3.90%	GDP
Ticker	Int	21.5	Industry P/E
		64.0%	Target Dividend Payout Ratio
		9.5%	Target ROE

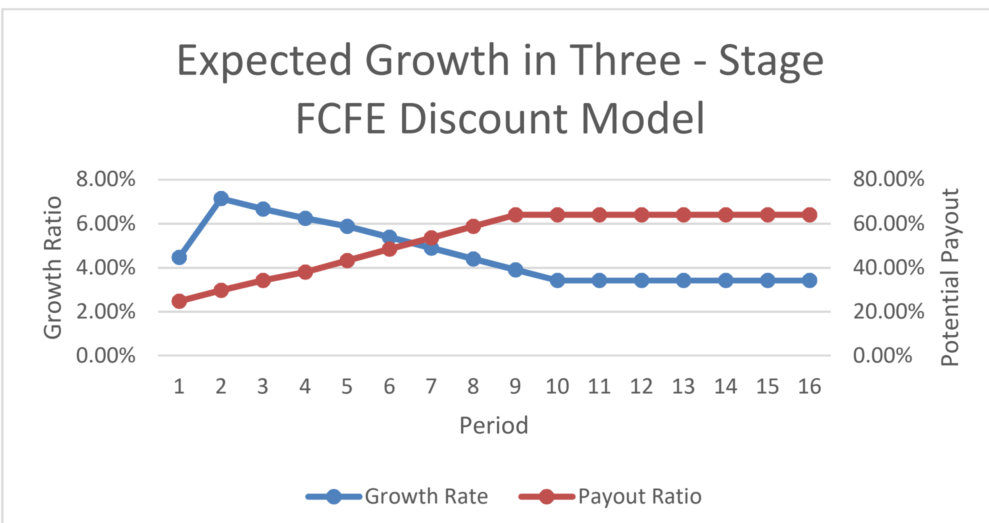
	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		31.62%	68.38%	***2.33***			(54.72)
	1	3.00%	65.79%	34.21%	***2.40***	0.82		0.82
	2	6.25%	61.92%	38.08%	2.55	0.97		0.97
Stage 1	3	5.88%	58.48%	41.52%	2.70	1.12		1.12
	4	5.56%	55.40%	44.60%	2.85	1.27		1.27
	5	5.26%	51.52%	48.48%	***3.00***	1.45		1.45
	6	4.89%	47.64%	52.36%	3.15	1.65		1.65
	7	4.53%	43.76%	56.24%	3.29	1.85		1.85
Stage 2	8	4.16%	39.88%	60.12%	3.43	2.06		2.06
	9	3.79%	36.00%	64.00%	3.56	2.28		2.28
	10	3.42%	36.00%	64.00%	3.68	2.35	81.77	84.12
Stage 3	11+	3.42%	36.00%	64.00%	3.80	*2.43*		
							K_e =	**6.41%**



Three Stage Free Cash Flow to Equity Discount Model

Company	Ameren Corp	3.90%	GDP
Ticker	aee	21.5	Industry P/E
		64.0%	Target Dividend Payout Ratio
		9.5%	Target ROE

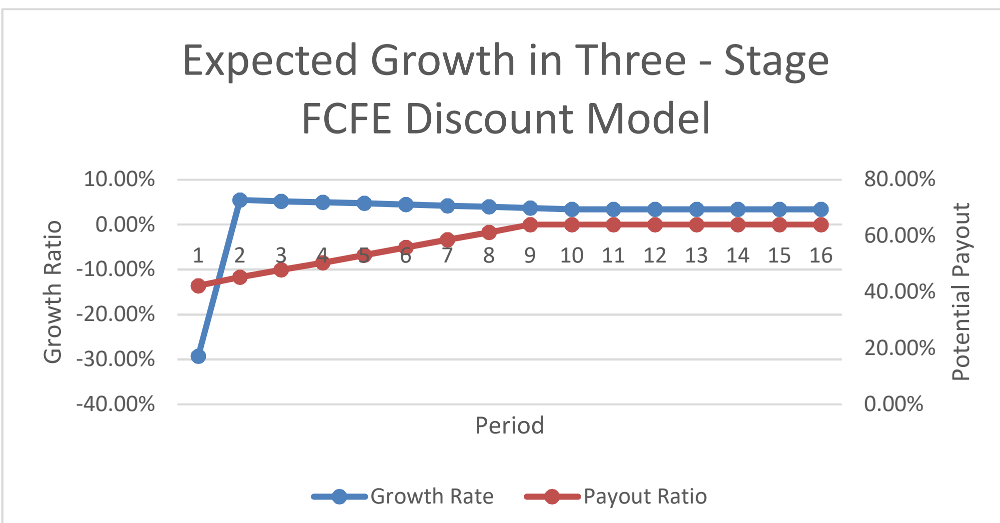
	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		47.13%	52.87%	***3.35***			**(76.80)**
	1	4.48%	75.19%	24.81%	***3.50***	0.87		0.87
	2	7.14%	70.18%	29.82%	3.75	1.12		1.12
Stage 1	3	6.67%	65.79%	34.21%	4.00	1.37		1.37
	4	6.25%	61.92%	38.08%	4.25	1.62		1.62
	5	5.88%	56.74%	43.26%	***4.50***	1.95		1.95
	6	5.39%	51.55%	48.45%	4.74	2.30		2.30
	7	4.90%	46.37%	53.63%	4.97	2.67		2.67
Stage 2	8	4.40%	41.18%	58.82%	5.19	3.05		3.05
	9	3.91%	36.00%	64.00%	5.40	3.45		3.45
	10	3.42%	36.00%	64.00%	5.58	3.57	124.11	127.68
Stage 3	11+	3.42%	36.00%	64.00%	5.77	*3.69*		
							K_e =	**7.07%**



Three Stage Free Cash Flow to Equity Discount Model

Company	Avangrid Inc	3.90%	GDP
Ticker	agr	21.5	Industry P/E
		64.0%	Target Dividend Payout Ratio
		9.5%	Target ROE

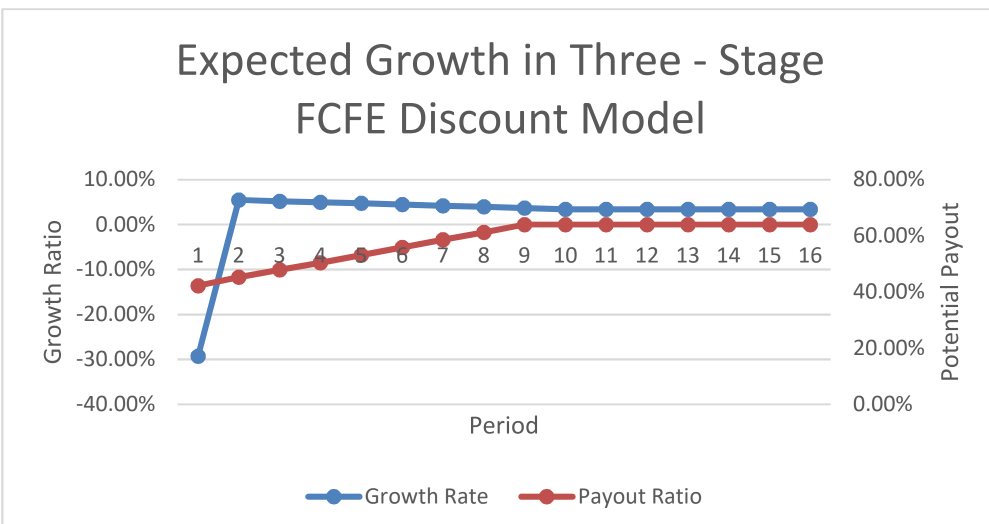
	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		21.93%	78.07%	***2.40***			**(50.74)**
	1	2.08%	59.08%	40.92%	***2.45***	1.00		1.00
	2	5.61%	55.94%	44.06%	2.59	1.14		1.14
Stage 1	3	5.31%	53.11%	46.89%	2.73	1.28		1.28
	4	5.05%	50.56%	49.44%	2.86	1.42		1.42
	5	4.80%	47.65%	52.35%	***3.00***	1.57		1.57
	6	4.53%	44.74%	55.26%	3.14	1.73		1.73
	7	4.25%	41.83%	58.17%	3.27	1.90		1.90
Stage 2	8	3.97%	38.91%	61.09%	3.40	2.08		2.08
	9	3.70%	36.00%	64.00%	3.52	2.26		2.26
	10	3.42%	36.00%	64.00%	3.65	2.33	81.05	83.38
Stage 3	11+	3.42%	36.00%	64.00%	3.77	*2.41*		
							K_e =	**7.37%**



Three Stage Free Cash Flow to Equity Discount Model

Company	Avista Corp	3.90%	GDP
Ticker	ava	21.5	Industry P/E
		64.0%	Target Dividend Payout Ratio
		9.5%	Target ROE

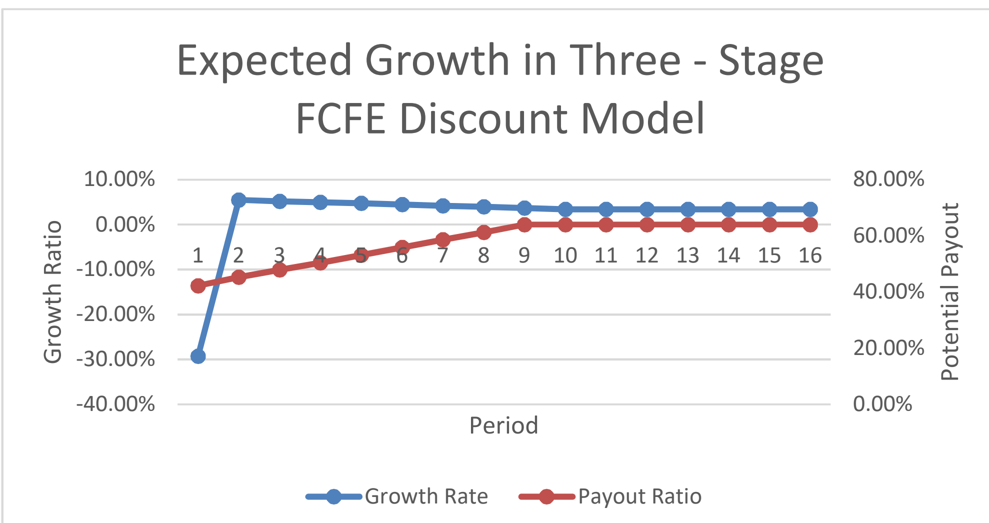
	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		-308.53%	408.53%	***2.90***			**(48.09)**
	1	-29.31%	57.77%	42.23%	***2.05***	0.87		0.87
	2	5.49%	54.76%	45.24%	2.16	0.98		0.98
Stage 1	3	5.20%	52.05%	47.95%	2.28	1.09		1.09
	4	4.95%	49.60%	50.40%	2.39	1.20		1.20
	5	4.71%	46.88%	53.12%	***2.50***	1.33		1.33
	6	4.45%	44.16%	55.84%	2.61	1.46		1.46
	7	4.20%	41.44%	58.56%	2.72	1.59		1.59
Stage 2	8	3.94%	38.72%	61.28%	2.83	1.73		1.73
	9	3.68%	36.00%	64.00%	2.93	1.88		1.88
	10	3.42%	36.00%	64.00%	3.03	1.94	67.42	69.37
Stage 3	11+	3.42%	36.00%	64.00%	3.14	*2.01*		
							K_e =	**5.87%**



Three Stage Free Cash Flow to Equity Discount Model

Company	Black Hills	3.90%	GDP
Ticker	bkh	21.5	Industry P/E
		64.0%	Target Dividend Payout Ratio
		9.5%	Target ROE

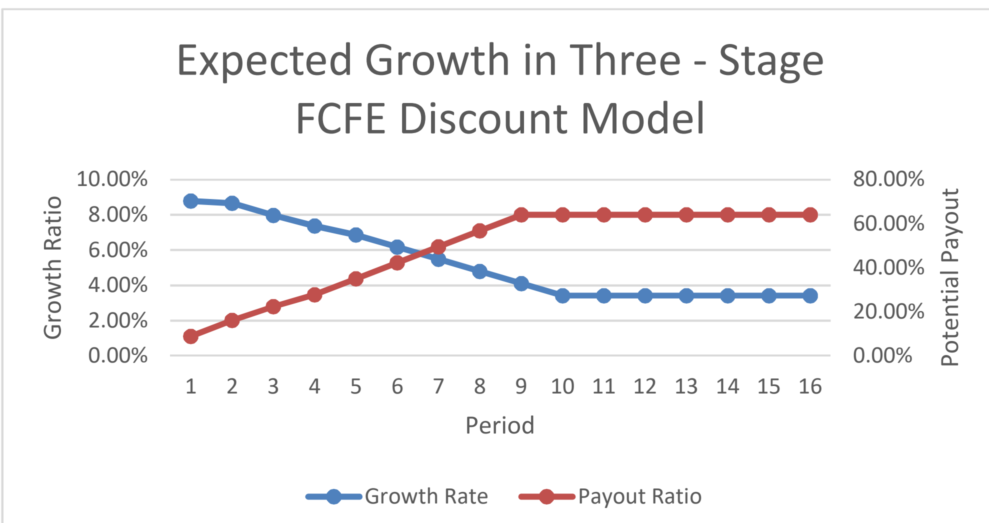
	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		61.02%	38.98%	***3.45***			**(78.04)**
	1	5.80%	43.26%	56.74%	***3.65***	2.07		2.07
	2	4.11%	41.55%	58.45%	3.80	2.22		2.22
Stage 1	3	3.95%	39.97%	60.03%	3.95	2.37		2.37
	4	3.80%	38.51%	61.49%	4.10	2.52		2.52
	5	3.66%	38.01%	61.99%	***4.25***	2.63		2.63
	6	3.61%	37.51%	62.49%	4.40	2.75		2.75
	7	3.56%	37.00%	63.00%	4.56	2.87		2.87
Stage 2	8	3.52%	36.50%	63.50%	4.72	3.00		3.00
	9	3.47%	36.00%	64.00%	4.88	3.13		3.13
	10	3.42%	36.00%	64.00%	5.05	3.23	112.32	115.55
Stage 3	11+	3.42%	36.00%	64.00%	5.22	*3.34*		
							K_e =	**6.59%**



Three Stage Free Cash Flow to Equity Discount Model

Company	CMS Energy Co	3.90%	GDP
Ticker	cms	21.5	Industry P/E
		64.0%	Target Dividend Payout Ratio
		9.5%	Target ROE

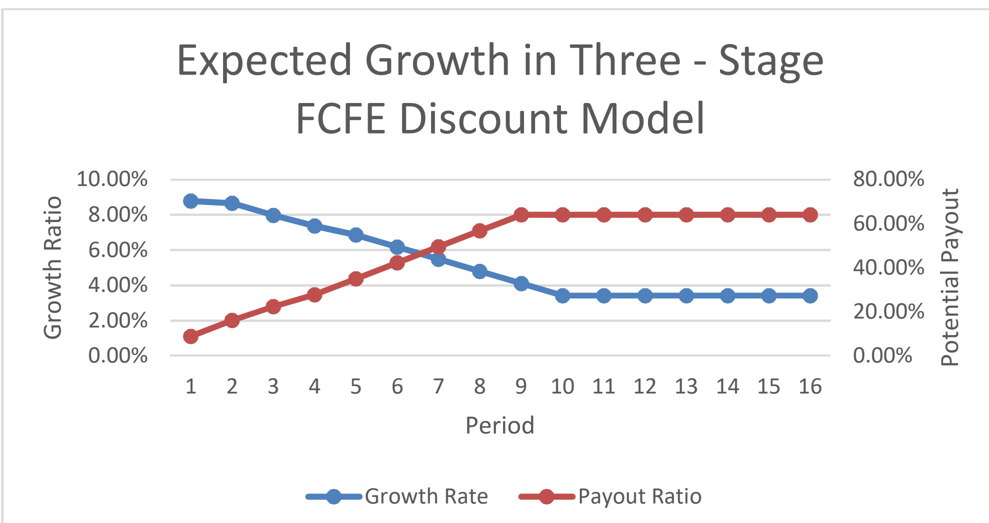
	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		92.49%	7.51%	***2.39***			**(62.84)**
	1	8.79%	91.09%	8.91%	***2.60***	0.23		0.23
	2	8.65%	83.84%	16.16%	2.83	0.46		0.46
Stage 1	3	7.96%	77.65%	22.35%	3.05	0.68		0.68
	4	7.38%	72.32%	27.68%	3.28	0.91		0.91
	5	6.87%	65.05%	34.95%	***3.50***	1.22		1.22
	6	6.18%	57.79%	42.21%	3.72	1.57		1.57
	7	5.49%	50.53%	49.47%	3.92	1.94		1.94
Stage 2	8	4.80%	43.26%	56.74%	4.11	2.33		2.33
	9	4.11%	36.00%	64.00%	4.28	2.74		2.74
	10	3.42%	36.00%	64.00%	4.42	2.83	98.36	101.19
Stage 3	11+	3.42%	36.00%	64.00%	4.57	*2.93*		
							K_e =	**6.34%**



Three Stage Free Cash Flow to Equity Discount Model

Company	CenterPoint Ene	3.90%	GDP
Ticker	cnp	21.5	Industry P/E
		64.0%	Target Dividend Payout Ratio
		9.5%	Target ROE

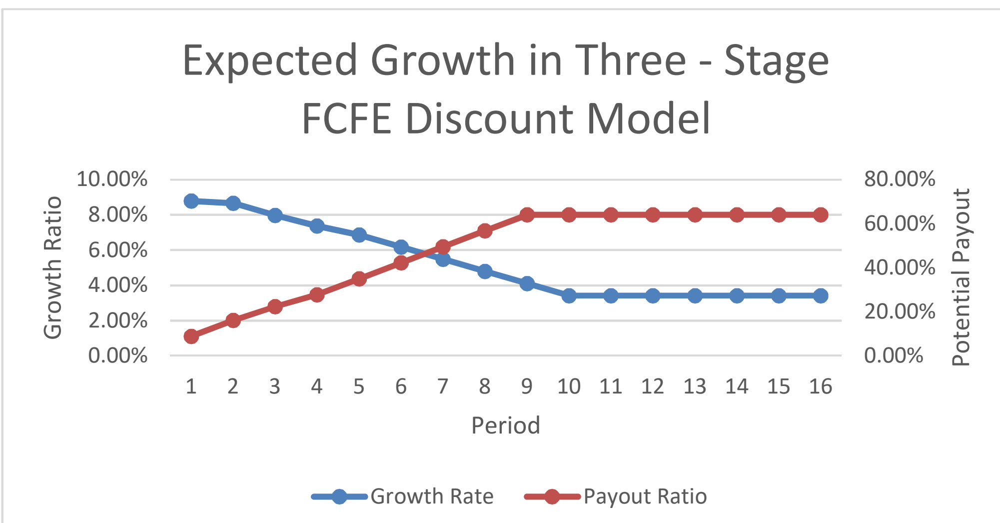
	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		7.06%	92.94%	*1.49*			(26.98)
	1	0.67%	61.40%	38.60%	*1.50*	0.58		0.58
	2	5.83%	58.02%	41.98%	1.59	0.67		0.67
Stage 1	3	5.51%	54.99%	45.01%	1.68	0.75		0.75
	4	5.22%	52.26%	47.74%	1.76	0.84		0.84
	5	4.96%	49.01%	50.99%	*1.85*	0.94		0.94
	6	4.66%	45.75%	54.25%	1.94	1.05		1.05
	7	4.35%	42.50%	57.50%	2.02	1.16		1.16
Stage 2	8	4.04%	39.25%	60.75%	2.10	1.28		1.28
	9	3.73%	36.00%	64.00%	2.18	1.40		1.40
	10	3.42%	36.00%	64.00%	2.25	1.44	50.14	51.58
Stage 3	11+	3.42%	36.00%	64.00%	2.33	*1.49*		
							K_e =	**9.11%**



Three Stage Free Cash Flow to Equity Discount Model

Company	Chesapeake Uti	3.90%	GDP
Ticker	cpk	21.5	Industry P/E
		64.0%	Target Dividend Payout Ratio
		9.5%	Target ROE

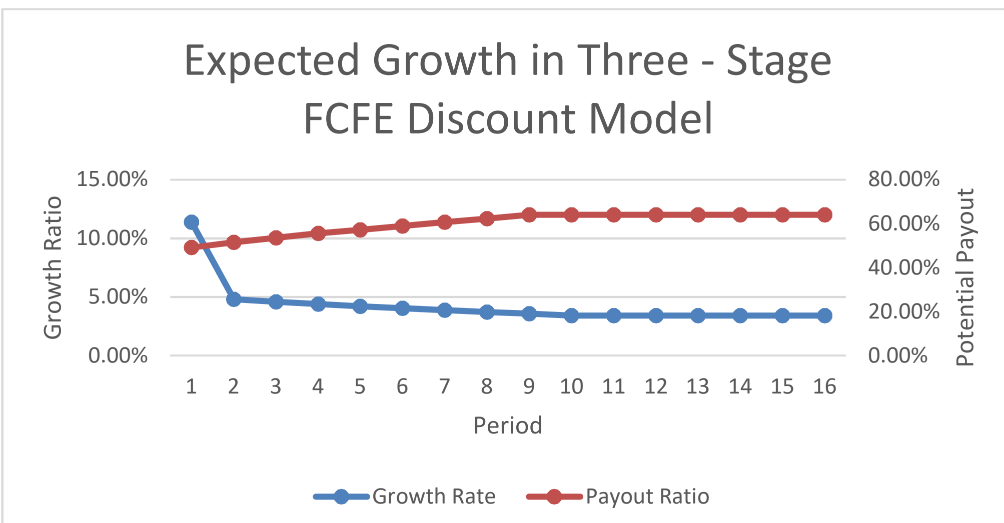
	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		77.40%	22.60%	***3.40***			(95.41)
	1	7.35%	133.38%	-33.38%	***3.65***	(1.22)		-1.22
	2	12.67%	118.38%	-18.38%	4.11	(0.76)		-0.76
Stage 1	3	11.25%	106.41%	-6.41%	4.58	(0.29)		-0.29
	4	10.11%	96.64%	3.36%	5.04	0.17		0.17
	5	9.18%	84.51%	15.49%	***5.50***	0.85		0.85
	6	8.03%	72.39%	27.61%	5.94	1.64		1.64
	7	6.88%	60.26%	39.74%	6.35	2.52		2.52
Stage 2	8	5.72%	48.13%	51.87%	6.71	3.48		3.48
	9	4.57%	36.00%	64.00%	7.02	4.49		4.49
	10	3.42%	36.00%	64.00%	7.26	4.65	161.45	166.09
Stage 3	11+	3.42%	36.00%	64.00%	7.51	*4.81*		
							K_e =	**6.41%**



Three Stage Free Cash Flow to Equity Discount Model

Company	Con. Edison Inc	3.90%	GDP
Ticker	ed	21.5	Industry P/E
		64.0%	Target Dividend Payout Ratio
		9.5%	Target ROE

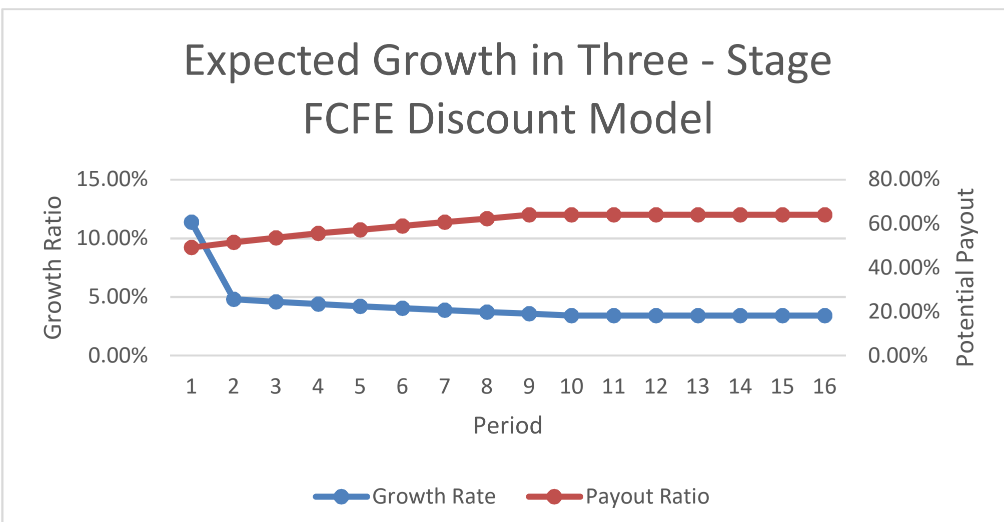
	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		119.92%	-19.92%	***3.95***			**(90.47)**
	1	11.39%	50.84%	49.16%	***4.40***	2.16		2.16
	2	4.83%	48.50%	51.50%	4.61	2.38		2.38
Stage 1	3	4.61%	46.36%	53.64%	4.83	2.59		2.59
	4	4.40%	44.40%	55.60%	5.04	2.80		2.80
	5	4.22%	42.72%	57.28%	***5.25***	3.01		3.01
	6	4.06%	41.04%	58.96%	5.46	3.22		3.22
	7	3.90%	39.36%	60.64%	5.68	3.44		3.44
Stage 2	8	3.74%	37.68%	62.32%	5.89	3.67		3.67
	9	3.58%	36.00%	64.00%	6.10	3.90		3.90
	10	3.42%	36.00%	64.00%	6.31	4.04	140.25	144.29
Stage 3	11+	3.42%	36.00%	64.00%	6.52	*4.17*		
							K_e =	**7.25%**



Three Stage Free Cash Flow to Equity Discount Model

Company	Dominion Energ	3.90%	GDP
Ticker	D	21.5	Industry P/E
		64.0%	Target Dividend Payout Ratio
		9.5%	Target ROE

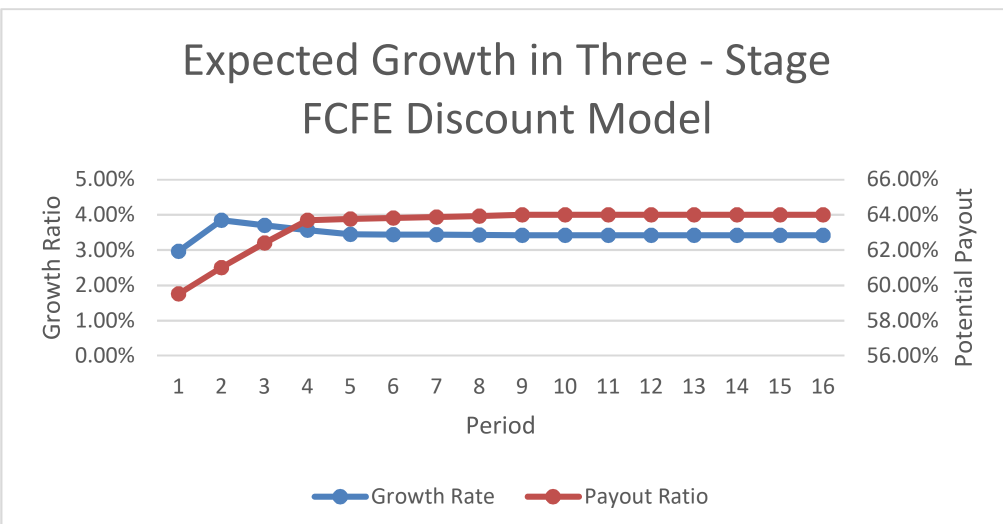
	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		1101.59%	-1001.59%	***2.15***			**(81.92)**
	1	######	65.79%	34.21%	***4.40***	1.51		1.51
	2	6.25%	61.92%	38.08%	4.68	1.78		1.78
Stage 1	3	5.88%	58.48%	41.52%	4.95	2.06		2.06
	4	5.56%	55.40%	44.60%	5.23	2.33		2.33
	5	5.26%	51.52%	48.48%	***5.50***	2.67		2.67
	6	4.89%	47.64%	52.36%	5.77	3.02		3.02
	7	4.53%	43.76%	56.24%	6.03	3.39		3.39
Stage 2	8	4.16%	39.88%	60.12%	6.28	3.78		3.78
	9	3.79%	36.00%	64.00%	6.52	4.17		4.17
	10	3.42%	36.00%	64.00%	6.74	4.31	149.91	154.22
Stage 3	11+	3.42%	36.00%	64.00%	6.97	*4.46*		
							K_e =	**8.79%**



Three Stage Free Cash Flow to Equity Discount Model

Company	DTE Energy Co	3.90%	GDP
Ticker	dte	21.5	Industry P/E
		64.0%	Target Dividend Payout Ratio
		9.5%	Target ROE

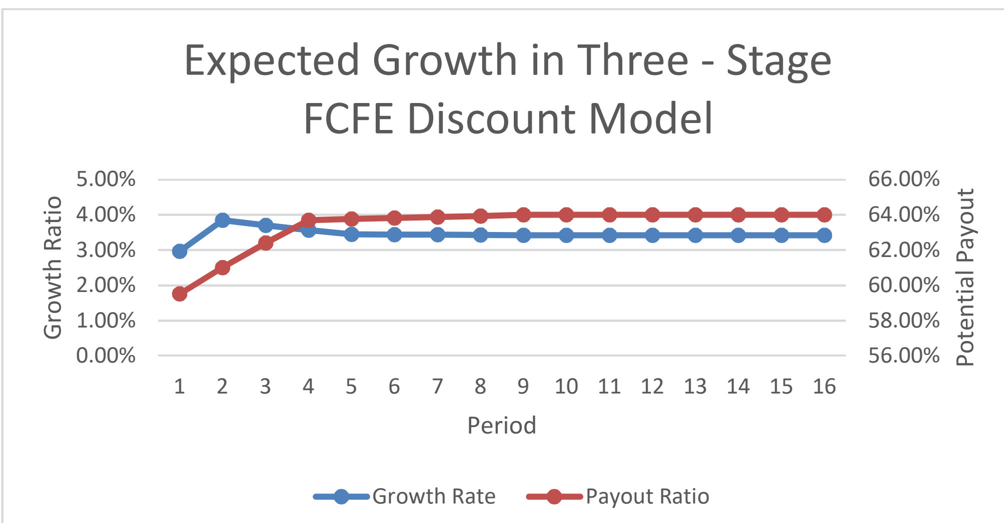
	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		31.70%	68.30%	***6.31***			**(128.43)**
	1	3.01%	70.85%	29.15%	***6.50***	1.89		1.89
	2	6.73%	66.38%	33.62%	6.94	2.33		2.33
Stage 1	3	6.31%	62.44%	37.56%	7.38	2.77		2.77
	4	5.93%	58.95%	41.05%	7.81	3.21		3.21
	5	5.60%	54.36%	45.64%	***8.25***	3.77		3.77
	6	5.16%	49.77%	50.23%	8.68	4.36		4.36
	7	4.73%	45.18%	54.82%	9.09	4.98		4.98
Stage 2	8	4.29%	40.59%	59.41%	9.48	5.63		5.63
	9	3.86%	36.00%	64.00%	9.84	6.30		6.30
	10	3.42%	36.00%	64.00%	10.18	6.51	226.32	232.83
Stage 3	11+	3.42%	36.00%	64.00%	10.53	*6.74*		
							K_e =	**8.19%**



Three Stage Free Cash Flow to Equity Discount Model

Company	Duke Energy Co	3.90%	GDP
Ticker	duk	21.5	Industry P/E
		64.0%	Target Dividend Payout Ratio
		9.5%	Target ROE

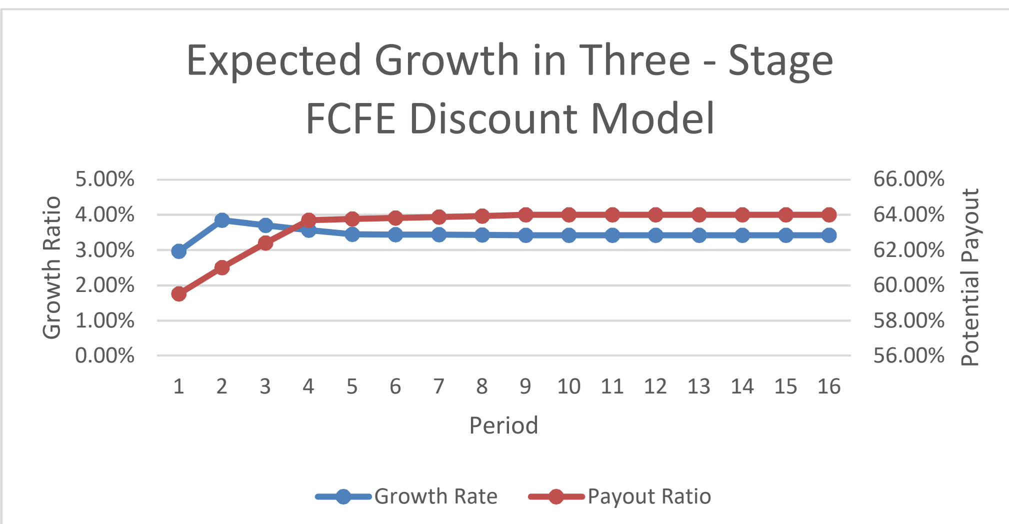
	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		31.27%	68.73%	*5.05*			(91.21)
	1	2.97%	40.49%	59.51%	*5.20*	3.09		3.09
	2	3.85%	38.99%	61.01%	5.40	3.29		3.29
Stage 1	3	3.70%	37.59%	62.41%	5.60	3.49		3.49
	4	3.57%	36.30%	63.70%	5.80	3.69		3.69
	5	3.45%	36.24%	63.76%	*6.00*	3.83		3.83
	6	3.44%	36.18%	63.82%	6.21	3.96		3.96
	7	3.44%	36.12%	63.88%	6.42	4.10		4.10
Stage 2	8	3.43%	36.06%	63.94%	6.64	4.25		4.25
	9	3.43%	36.00%	64.00%	6.87	4.40		4.40
	10	3.42%	36.00%	64.00%	7.10	4.55	157.93	162.47
Stage 3	11+	3.42%	36.00%	64.00%	7.35	*4.70*		
							K_e =	**8.94%**



Three Stage Free Cash Flow to Equity Discount Model

Company	Emera Inc	3.90%	GDP
Ticker	ema	21.5	Industry P/E
		64.0%	Target Dividend Payout Ratio
		9.5%	Target ROE

	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		11.40%	88.60%	*2.77*			(55.22)
	1	1.08%	112.78%	-12.78%	*2.80*	(0.36)		-0.36
	2	10.71%	101.87%	-1.87%	3.10	(0.06)		-0.06
Stage 1	3	9.68%	92.88%	7.12%	3.40	0.24		0.24
	4	8.82%	85.35%	14.65%	3.70	0.54		0.54
	5	8.11%	75.48%	24.52%	*4.00*	0.98		0.98
	6	7.17%	65.61%	34.39%	4.29	1.47		1.47
	7	6.23%	55.74%	44.26%	4.55	2.02		2.02
Stage 2	8	5.30%	45.87%	54.13%	4.80	2.60		2.60
	9	4.36%	36.00%	64.00%	5.00	3.20		3.20
	10	3.42%	36.00%	64.00%	5.18	3.31	115.07	118.39
Stage 3	11+	3.42%	36.00%	64.00%	5.35	*3.43*		
							K_e =	**9.08%**



Three Stage Free Cash Flow to Equity Discount Model

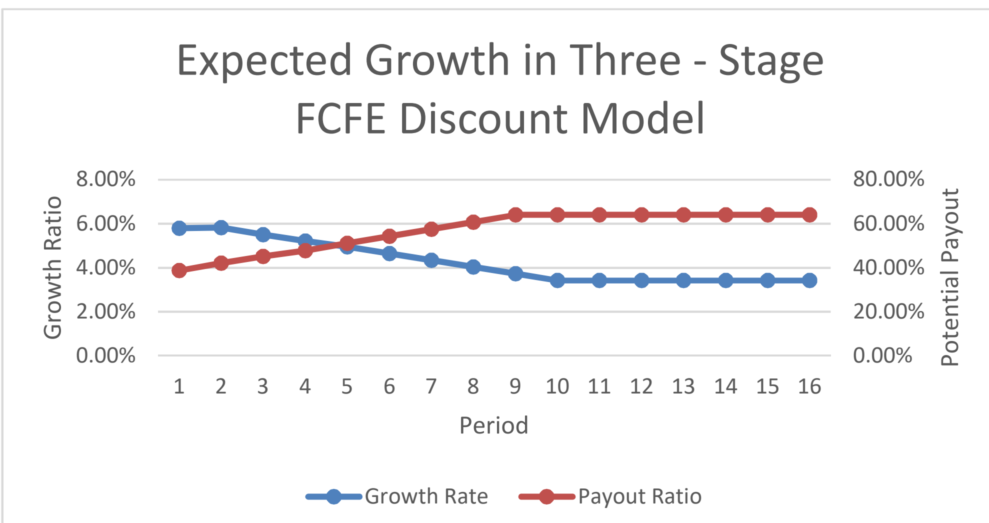
Company	Entergy Corp	3.90%	GDP
Ticker	etr	21.5	Industry P/E
		64.0%	Target Dividend Payout Ratio
		9.5%	Target ROE

	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		-142.02%	242.02%	***6.30***			**(119.80)**
	1	-13.49%	74.84%	25.16%	***5.45***	1.37		1.37
	2	7.11%	69.87%	30.13%	5.84	1.76		1.76
Stage 1	3	6.64%	65.53%	34.47%	6.23	2.15		2.15
	4	6.22%	61.69%	38.31%	6.61	2.53		2.53
	5	5.86%	56.55%	43.45%	***7.00***	3.04		3.04
	6	5.37%	51.41%	48.59%	7.38	3.58		3.58
	7	4.88%	46.27%	53.73%	7.74	4.16		4.16
Stage 2	8	4.40%	41.14%	58.86%	8.08	4.75		4.75
	9	3.91%	36.00%	64.00%	8.39	5.37		5.37
	10	3.42%	36.00%	64.00%	8.68	5.55	192.98	198.54
Stage 3	11+	3.42%	36.00%	64.00%	8.98	*5.74*		
							K_e =	**7.04%**

Three Stage Free Cash Flow to Equity Discount Model

Company	Eversource Ene	3.90%	GDP
Ticker	es	21.5	Industry P/E
		64.0%	Target Dividend Payout Ratio
		9.5%	Target ROE

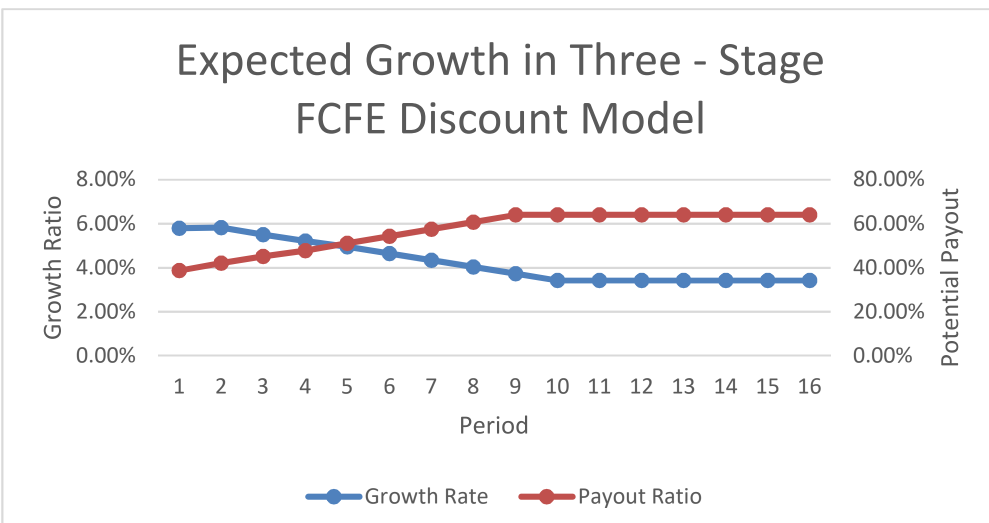
	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		61.02%	38.98%	***3.45***			**(85.07)**
	1	5.80%	61.28%	38.72%	***3.65***	1.41		1.41
	2	5.82%	57.91%	42.09%	3.86	1.63		1.63
Stage 1	3	5.50%	54.89%	45.11%	4.08	1.84		1.84
	4	5.21%	52.17%	47.83%	4.29	2.05		2.05
	5	4.96%	48.94%	51.06%	***4.50***	2.30		2.30
	6	4.65%	45.70%	54.30%	4.71	2.56		2.56
	7	4.34%	42.47%	57.53%	4.91	2.83		2.83
Stage 2	8	4.03%	39.23%	60.77%	5.11	3.11		3.11
	9	3.73%	36.00%	64.00%	5.30	3.39		3.39
	10	3.42%	36.00%	64.00%	5.48	3.51	121.93	125.44
Stage 3	11+	3.42%	36.00%	64.00%	5.67	*3.63*		
							K_e =	**6.04%**



Three Stage Free Cash Flow to Equity Discount Model

Company	Exelon Corp	3.90%	GDP
Ticker	exc	21.5	Industry P/E
		64.0%	Target Dividend Payout Ratio
		9.5%	Target ROE

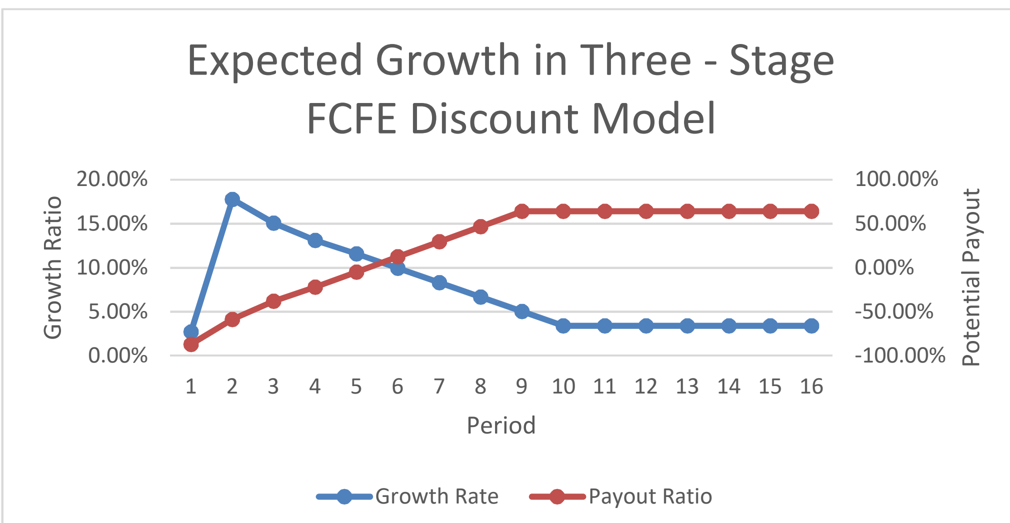
	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		52.63%	47.37%	***3.00***			**(45.24)**
	1	5.00%	50.13%	49.87%	***3.15***	1.57		1.57
	2	4.76%	47.85%	52.15%	3.30	1.72		1.72
Stage 1	3	4.55%	45.77%	54.23%	3.45	1.87		1.87
	4	4.35%	43.86%	56.14%	3.60	2.02		2.02
	5	4.17%	42.29%	57.71%	***3.75***	2.16		2.16
	6	4.02%	40.72%	59.28%	3.90	2.31		2.31
	7	3.87%	39.14%	60.86%	4.05	2.47		2.47
Stage 2	8	3.72%	37.57%	62.43%	4.20	2.62		2.62
	9	3.57%	36.00%	64.00%	4.35	2.79		2.79
	10	3.42%	36.00%	64.00%	4.50	2.88	100.08	102.96
Stage 3	11+	3.42%	36.00%	64.00%	4.65	*2.98*		
							K_e =	**11.68%**



Three Stage Free Cash Flow to Equity Discount Model

Company	FirstEnergy Corp	3.90%	GDP
Ticker	fe	21.5	Industry P/E
		64.0%	Target Dividend Payout Ratio
		9.5%	Target ROE

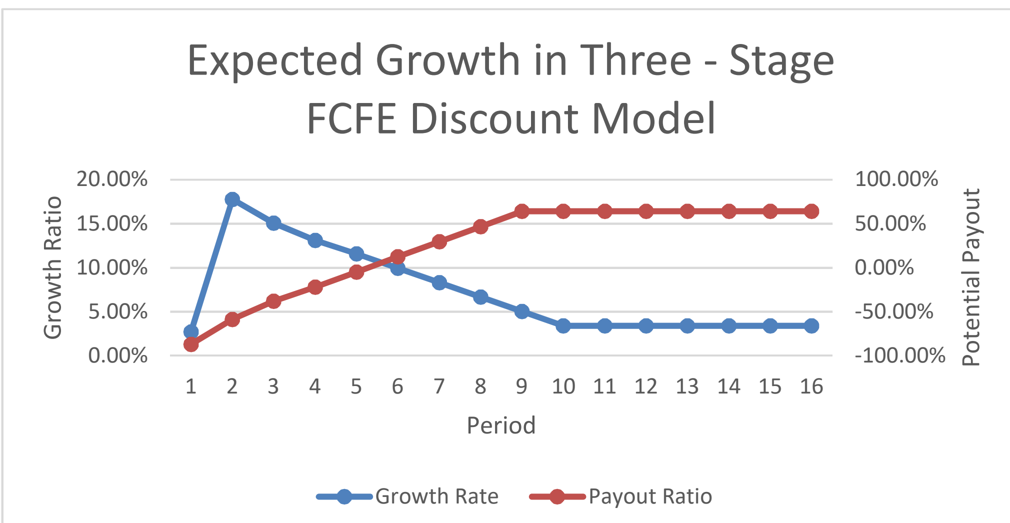
	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		28.45%	71.55%	***1.85***			**(48.60)**
	1	2.70%	186.98%	-86.98%	***1.90***	(1.65)		-1.65
	2	17.76%	158.78%	-58.78%	2.24	(1.32)		-1.32
Stage 1	3	15.08%	137.97%	-37.97%	2.58	(0.98)		-0.98
	4	13.11%	121.98%	-21.98%	2.91	(0.64)		-0.64
	5	11.59%	104.78%	-4.78%	***3.25***	(0.16)		-0.16
	6	9.95%	87.59%	12.41%	3.57	0.44		0.44
	7	8.32%	70.39%	29.61%	3.87	1.15		1.15
Stage 2	8	6.69%	53.20%	46.80%	4.13	1.93		1.93
	9	5.05%	36.00%	64.00%	4.34	2.78		2.78
	10	3.42%	36.00%	64.00%	4.49	2.87	99.77	102.64
Stage 3	11+	3.42%	36.00%	64.00%	4.64	*2.97*		
							K_e =	**7.64%**



Three Stage Free Cash Flow to Equity Discount Model

Company	Fortis Inc	3.90%	GDP
Ticker	fts	21.5	Industry P/E
		64.0%	Target Dividend Payout Ratio
		9.5%	Target ROE

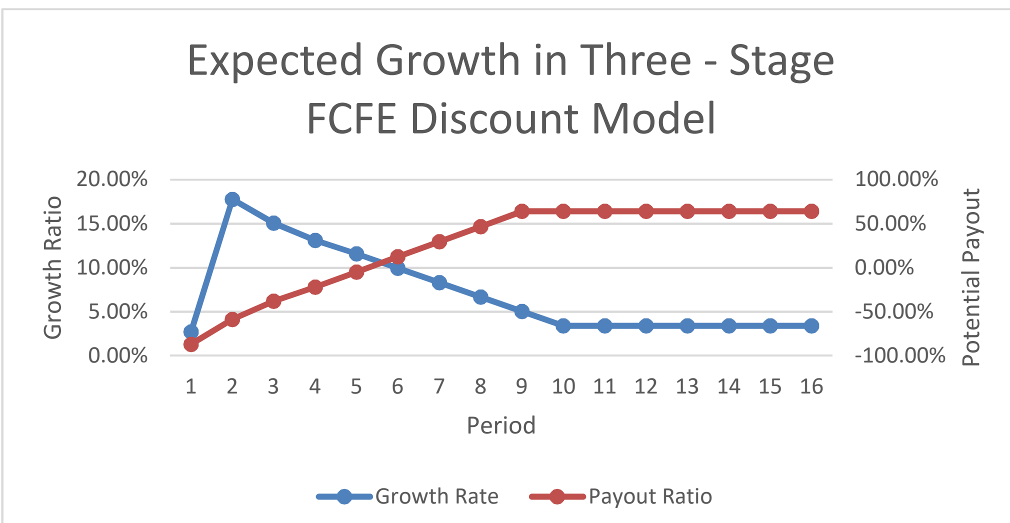
	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		-51.06%	151.06%	***2.68***			**(41.07)**
	1	-4.85%	46.44%	53.56%	***2.55***	1.37		1.37
	2	4.41%	44.48%	55.52%	2.66	1.48		1.48
Stage 1	3	4.23%	42.67%	57.33%	2.78	1.59		1.59
	4	4.05%	41.01%	58.99%	2.89	1.70		1.70
	5	3.90%	40.01%	59.99%	***3.00***	1.80		1.80
	6	3.80%	39.01%	60.99%	3.11	1.90		1.90
	7	3.71%	38.00%	62.00%	3.23	2.00		2.00
Stage 2	8	3.61%	37.00%	63.00%	3.35	2.11		2.11
	9	3.52%	36.00%	64.00%	3.46	2.22		2.22
	10	3.42%	36.00%	64.00%	3.58	2.29	79.65	81.94
Stage 3	11+	3.42%	36.00%	64.00%	3.70	*2.37*		
							K_e =	**10.15%**



Three Stage Free Cash Flow to Equity Discount Model

Company	Hawaiian Electric	3.90%	GDP
Ticker	he	21.5	Industry P/E
		64.0%	Target Dividend Payout Ratio
		9.5%	Target ROE

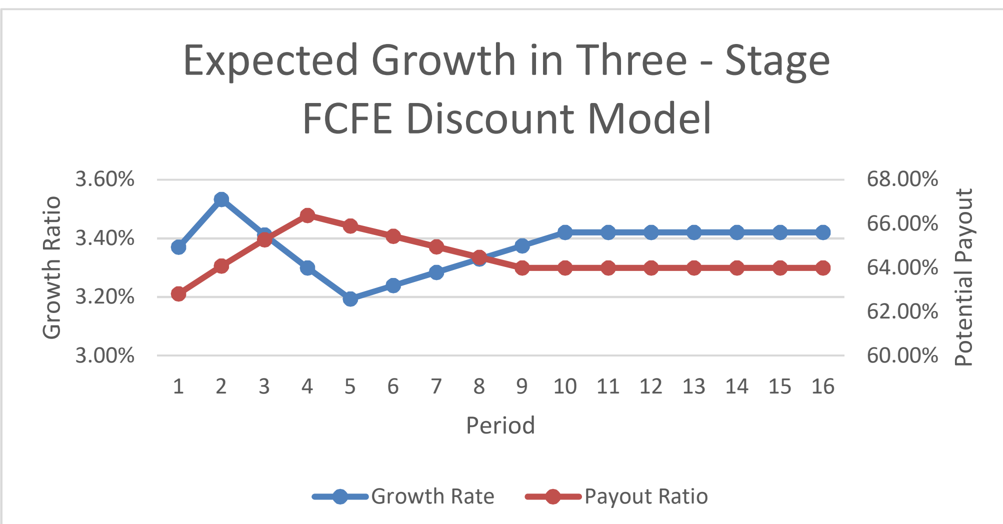
	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		55.40%	44.60%	***1.90***			**(46.55)**
	1	5.26%	32.89%	67.11%	***2.00***	1.34		1.34
	2	3.13%	31.90%	68.10%	2.06	1.40		1.40
Stage 1	3	3.03%	30.96%	69.04%	2.13	1.47		1.47
	4	2.94%	30.08%	69.92%	2.19	1.53		1.53
	5	2.86%	31.26%	68.74%	***2.25***	1.55		1.55
	6	2.97%	32.45%	67.55%	2.32	1.57		1.57
	7	3.08%	33.63%	66.37%	2.39	1.59		1.59
Stage 2	8	3.19%	34.82%	65.18%	2.46	1.61		1.61
	9	3.31%	36.00%	64.00%	2.55	1.63		1.63
	10	3.42%	36.00%	64.00%	2.63	1.69	58.55	60.23
Stage 3	11+	3.42%	36.00%	64.00%	2.72	*1.74*		
							K_e =	**5.29%**



Three Stage Free Cash Flow to Equity Discount Model

Company	Idacorp Inc	3.90%	GDP
Ticker	ida	21.5	Industry P/E
		64.0%	Target Dividend Payout Ratio
		9.5%	Target ROE

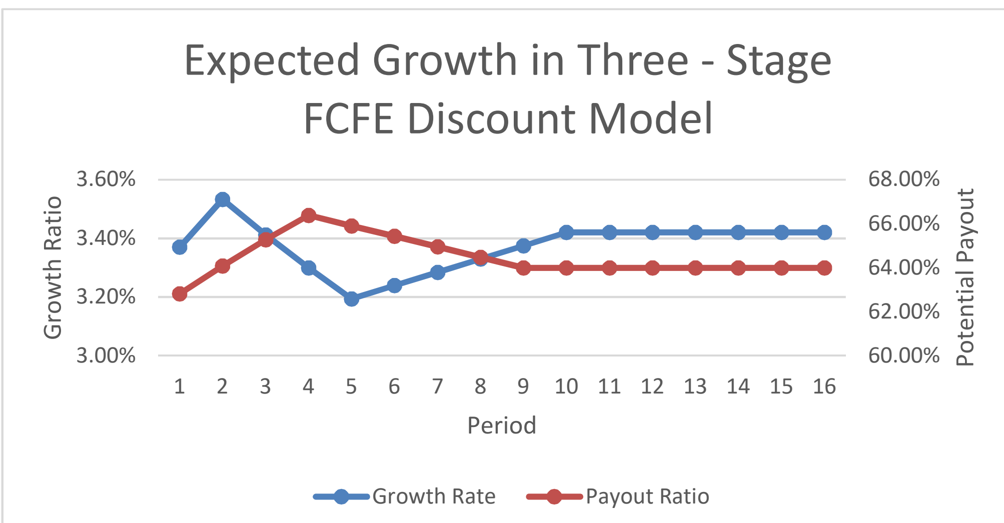
	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		35.48%	64.52%	*4.45*			(106.80)
	1	3.37%	37.19%	62.81%	*4.60*	2.89		2.89
	2	3.53%	35.92%	64.08%	4.76	3.05		3.05
Stage 1	3	3.41%	34.73%	65.27%	4.93	3.21		3.21
	4	3.30%	33.62%	66.38%	5.09	3.38		3.38
	5	3.19%	34.10%	65.90%	*5.25*	3.46		3.46
	6	3.24%	34.57%	65.43%	5.42	3.55		3.55
	7	3.28%	35.05%	64.95%	5.60	3.64		3.64
Stage 2	8	3.33%	35.52%	64.48%	5.78	3.73		3.73
	9	3.37%	36.00%	64.00%	5.98	3.83		3.83
	10	3.42%	36.00%	64.00%	6.18	3.96	137.51	141.47
Stage 3	11+	3.42%	36.00%	64.00%	6.40	*4.09*		
							K_e =	**5.44%**



Three Stage Free Cash Flow to Equity Discount Model

Company	MGE Energy Inc	3.90%	GDP
Ticker	mgee	21.5	Industry P/E
		64.0%	Target Dividend Payout Ratio
		9.5%	Target ROE

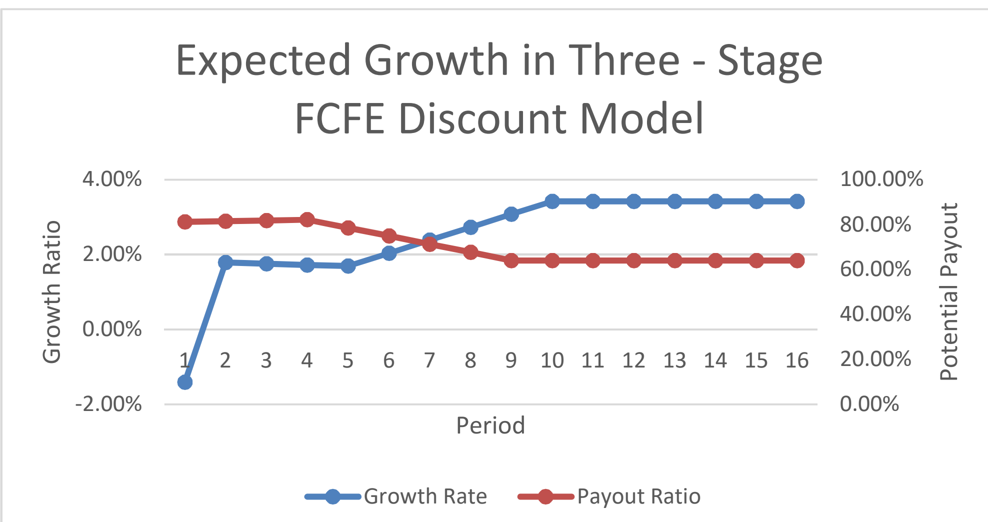
	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		37.74%	62.26%	***2.51***			**(78.46)**
Stage 1	1	3.59%	65.79%	34.21%	***2.60***	0.89		0.89
	2	6.25%	61.92%	38.08%	2.76	1.05		1.05
	3	5.88%	58.48%	41.52%	2.93	1.21		1.21
	4	5.56%	55.40%	44.60%	3.09	1.38		1.38
	5	5.26%	51.52%	48.48%	***3.25***	1.58		1.58
Stage 2	6	4.89%	47.64%	52.36%	3.41	1.78		1.78
	7	4.53%	43.76%	56.24%	3.56	2.00		2.00
	8	4.16%	39.88%	60.12%	3.71	2.23		2.23
	9	3.79%	36.00%	64.00%	3.85	2.47		2.47
	10	3.42%	36.00%	64.00%	3.98	2.55	88.58	91.13
Stage 3	11+	3.42%	36.00%	64.00%	4.12	*2.64*		
							K_e =	**3.23%**



Three Stage Free Cash Flow to Equity Discount Model

Company	NorthWestern (	3.90%	GDP
Ticker	nwe	21.5	Industry P/E
		64.0%	Target Dividend Payout Ratio
		9.5%	Target ROE

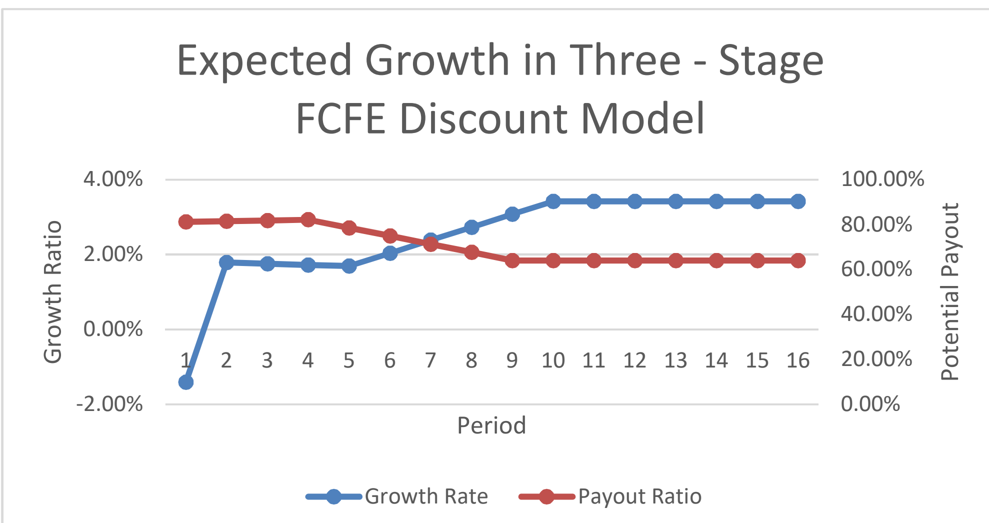
	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		-14.83%	114.83%	***3.55***			**(71.67)**
	1	-1.41%	18.80%	81.20%	***3.50***	2.84		2.84
	2	1.79%	18.47%	81.53%	3.56	2.90		2.90
Stage 1	3	1.75%	18.15%	81.85%	3.63	2.97		2.97
	4	1.72%	17.84%	82.16%	3.69	3.03		3.03
	5	1.69%	21.47%	78.53%	***3.75***	2.94		2.94
	6	2.04%	25.10%	74.90%	3.83	2.87		2.87
	7	2.38%	28.74%	71.26%	3.92	2.79		2.79
Stage 2	8	2.73%	32.37%	67.63%	4.02	2.72		2.72
	9	3.07%	36.00%	64.00%	4.15	2.66		2.66
	10	3.42%	36.00%	64.00%	4.29	2.75	95.40	98.14
Stage 3	11+	3.42%	36.00%	64.00%	4.44	*2.84*		
							K_e =	**6.45%**



Three Stage Free Cash Flow to Equity Discount Model

Company	OGE Energy Cor	3.90%	GDP
Ticker	oge	21.5	Industry P/E
		64.0%	Target Dividend Payout Ratio
		9.5%	Target ROE

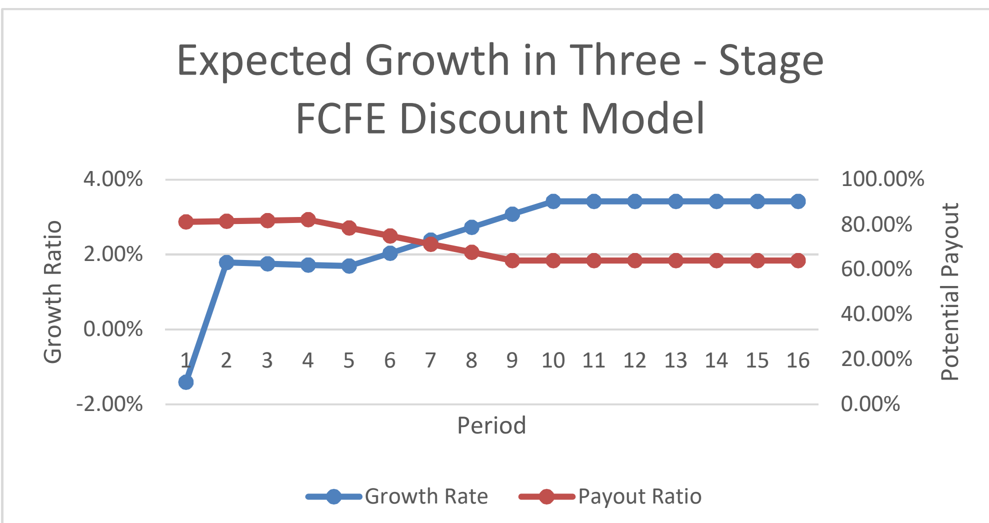
	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		4.70%	95.30%	*2.24*			(44.47)
	1	0.45%	58.48%	41.52%	*2.25*	0.93		0.93
	2	5.56%	55.40%	44.60%	2.38	1.06		1.06
Stage 1	3	5.26%	52.63%	47.37%	2.50	1.18		1.18
	4	5.00%	50.13%	49.87%	2.63	1.31		1.31
	5	4.76%	47.30%	52.70%	*2.75*	1.45		1.45
	6	4.49%	44.48%	55.52%	2.87	1.60		1.60
	7	4.23%	41.65%	58.35%	2.99	1.75		1.75
Stage 2	8	3.96%	38.83%	61.17%	3.11	1.90		1.90
	9	3.69%	36.00%	64.00%	3.23	2.07		2.07
	10	3.42%	36.00%	64.00%	3.34	2.14	74.24	76.37
Stage 3	11+	3.42%	36.00%	64.00%	3.45	*2.21*		
							K_e =	**7.91%**



Three Stage Free Cash Flow to Equity Discount Model

Company	Otter Tail Corp	3.90%	GDP
Ticker	ottr	21.5	Industry P/E
		64.0%	Target Dividend Payout Ratio
		9.5%	Target ROE

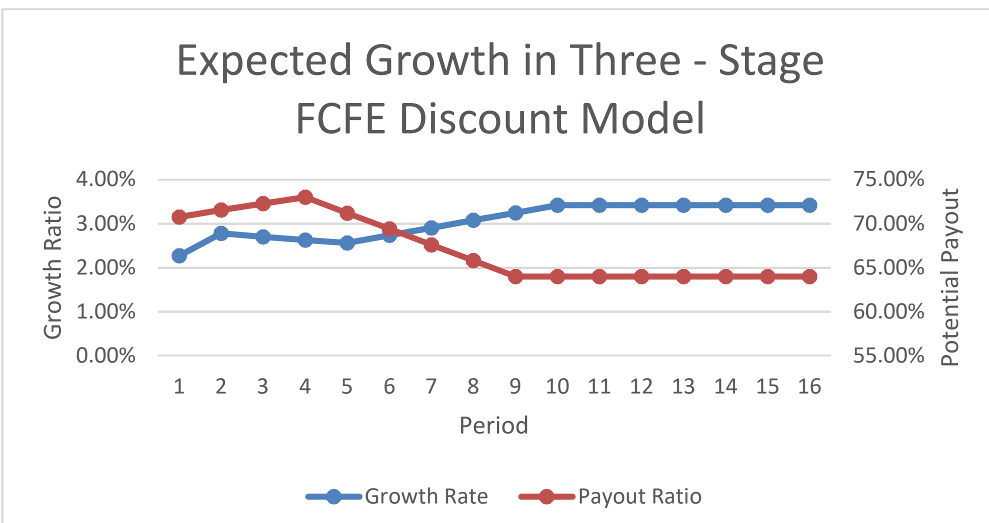
	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		38.81%	61.19%	*2.17*			(50.94)
	1	3.69%	58.48%	41.52%	*2.25*	0.93		0.93
	2	5.56%	55.40%	44.60%	2.38	1.06		1.06
Stage 1	3	5.26%	52.63%	47.37%	2.50	1.18		1.18
	4	5.00%	50.13%	49.87%	2.63	1.31		1.31
	5	4.76%	47.30%	52.70%	*2.75*	1.45		1.45
	6	4.49%	44.48%	55.52%	2.87	1.60		1.60
	7	4.23%	41.65%	58.35%	2.99	1.75		1.75
Stage 2	8	3.96%	38.83%	61.17%	3.11	1.90		1.90
	9	3.69%	36.00%	64.00%	3.23	2.07		2.07
	10	3.42%	36.00%	64.00%	3.34	2.14	74.24	76.37
Stage 3	11+	3.42%	36.00%	64.00%	3.45	*2.21*		
							K_e =	**6.30%**



Three Stage Free Cash Flow to Equity Discount Model

Company	PNM Resources	3.90%	GDP
Ticker	pnm	21.5	Industry P/E
		64.0%	Target Dividend Payout Ratio
		9.5%	Target ROE

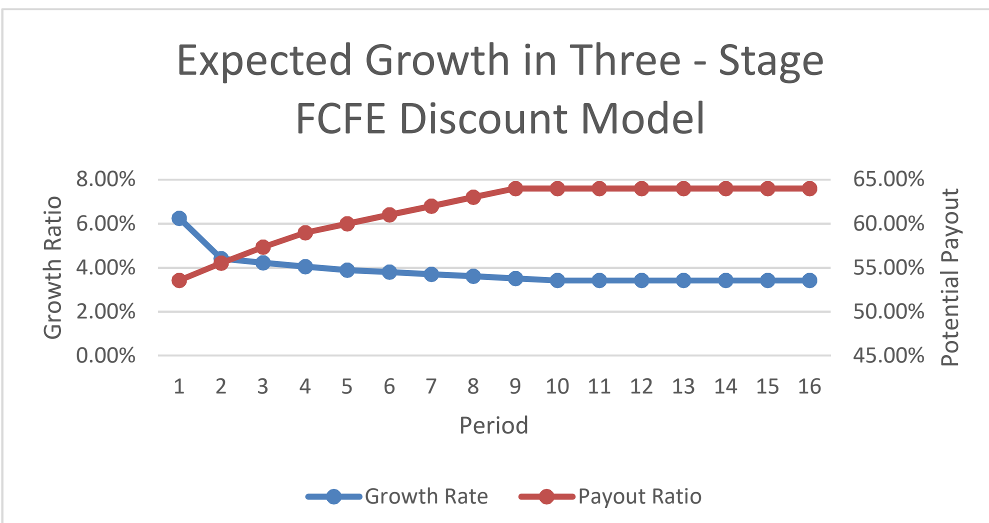
	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		23.92%	76.08%	***2.20***			**(50.71)**
Stage 1	1	2.27%	29.24%	70.76%	***2.25***	1.59		1.59
	2	2.78%	28.45%	71.55%	2.31	1.65		1.65
	3	2.70%	27.70%	72.30%	2.38	1.72		1.72
	4	2.63%	26.99%	73.01%	2.44	1.78		1.78
	5	2.56%	28.79%	71.21%	***2.50***	1.78		1.78
Stage 2	6	2.74%	30.59%	69.41%	2.57	1.78		1.78
	7	2.91%	32.40%	67.60%	2.64	1.79		1.79
	8	3.08%	34.20%	65.80%	2.72	1.79		1.79
	9	3.25%	36.00%	64.00%	2.81	1.80		1.80
	10	3.42%	36.00%	64.00%	2.91	1.86	64.68	66.55
Stage 3	11+	3.42%	36.00%	64.00%	3.01	*1.93*		
							K_e =	**5.57%**



Three Stage Free Cash Flow to Equity Discount Model

Company	Portland Gener	3.90%	GDP
Ticker	por	21.5	Industry P/E
		64.0%	Target Dividend Payout Ratio
		9.5%	Target ROE

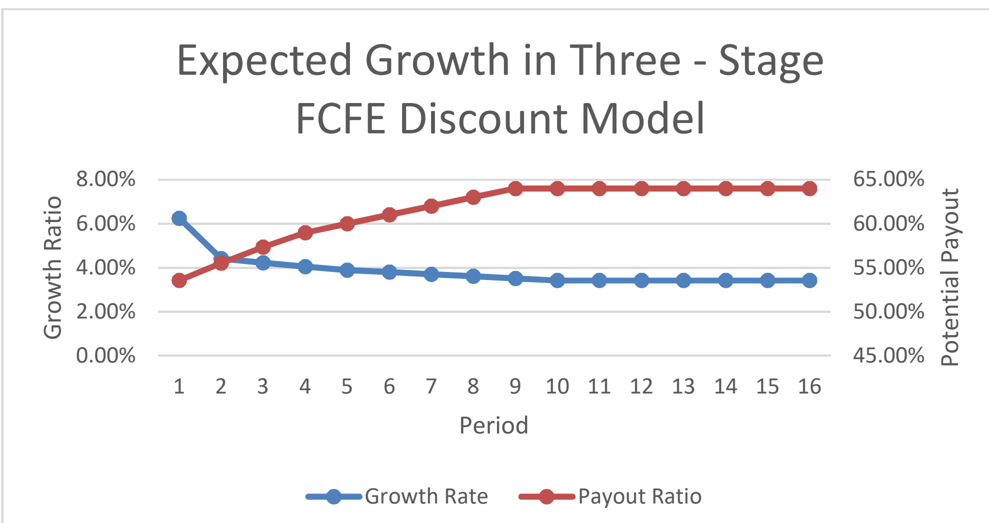
	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		65.79%	34.21%	***2.40***			**(55.79)**
	1	6.25%	46.44%	53.56%	***2.55***	1.37		1.37
	2	4.41%	44.48%	55.52%	2.66	1.48		1.48
Stage 1	3	4.23%	42.67%	57.33%	2.78	1.59		1.59
	4	4.05%	41.01%	58.99%	2.89	1.70		1.70
	5	3.90%	40.01%	59.99%	***3.00***	1.80		1.80
	6	3.80%	39.01%	60.99%	3.11	1.90		1.90
	7	3.71%	38.00%	62.00%	3.23	2.00		2.00
Stage 2	8	3.61%	37.00%	63.00%	3.35	2.11		2.11
	9	3.52%	36.00%	64.00%	3.46	2.22		2.22
	10	3.42%	36.00%	64.00%	3.58	2.29	79.65	81.94
Stage 3	11+	3.42%	36.00%	64.00%	3.70	*2.37*		
							K_e =	**6.40%**



Three Stage Free Cash Flow to Equity Discount Model

Company	P.S. Enterprise (	3.90%	GDP
Ticker	peg	21.5	Industry P/E
		64.0%	Target Dividend Payout Ratio
		9.5%	Target ROE

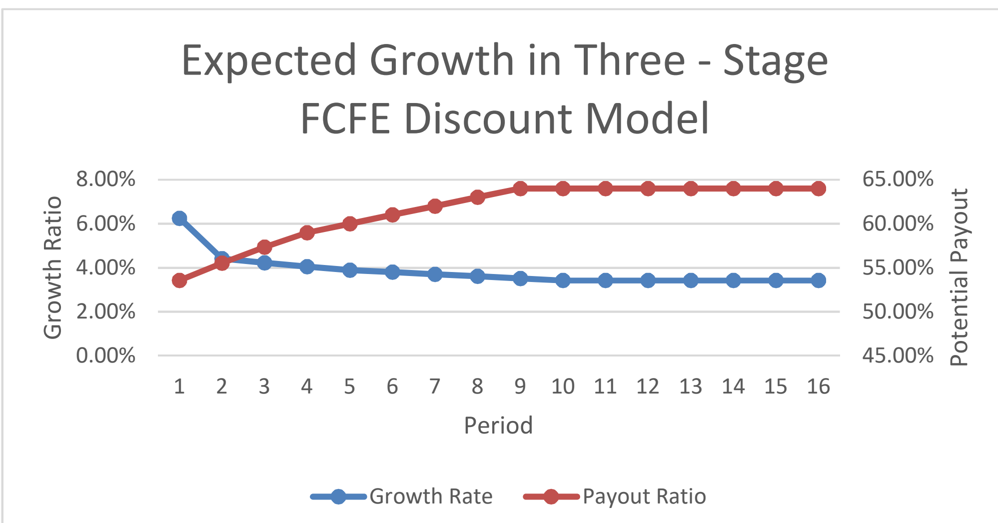
	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		-85.35%	185.35%	*3.70*			(58.52)
Stage 1	1	-8.11%	65.79%	34.21%	*3.40*	1.16		1.16
	2	6.25%	61.92%	38.08%	3.61	1.38		1.38
	3	5.88%	58.48%	41.52%	3.83	1.59		1.59
	4	5.56%	55.40%	44.60%	4.04	1.80		1.80
	5	5.26%	51.52%	48.48%	*4.25*	2.06		2.06
Stage 2	6	4.89%	47.64%	52.36%	4.46	2.33		2.33
	7	4.53%	43.76%	56.24%	4.66	2.62		2.62
	8	4.16%	39.88%	60.12%	4.85	2.92		2.92
	9	3.79%	36.00%	64.00%	5.04	3.22		3.22
	10	3.42%	36.00%	64.00%	5.21	3.33	115.84	119.17
Stage 3	11+	3.42%	36.00%	64.00%	5.39	*3.45*		
							K_e =	**9.73%**



Three Stage Free Cash Flow to Equity Discount Model

Company	Sempra Energy	3.90%	GDP
Ticker	sre	21.5	Industry P/E
		64.0%	Target Dividend Payout Ratio
		9.5%	Target ROE

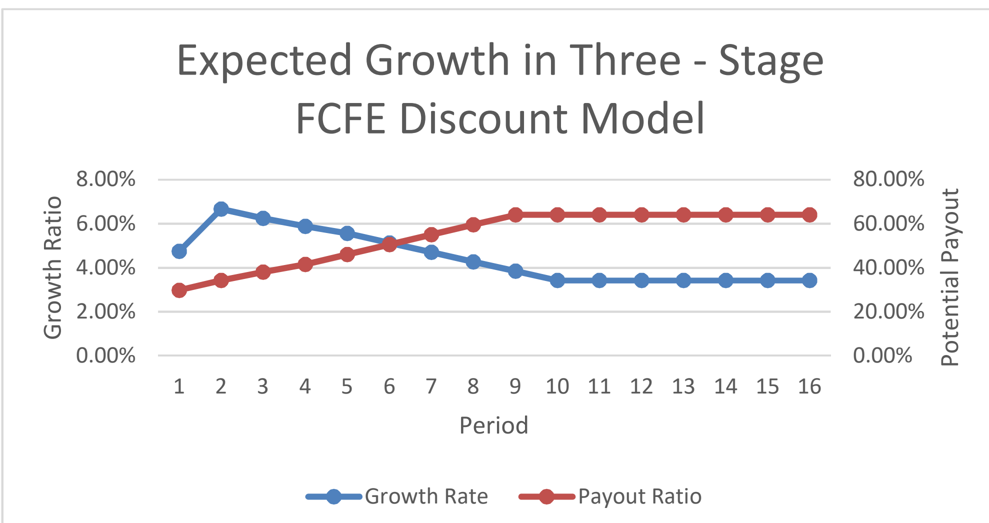
	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		179.94%	-79.94%	*5.85*			(149.93)
	1	17.09%	82.60%	17.40%	*6.85*	1.19		1.19
	2	7.85%	76.59%	23.41%	7.39	1.73		1.73
Stage 1	3	7.28%	71.39%	28.61%	7.93	2.27		2.27
	4	6.78%	66.86%	33.14%	8.46	2.80		2.80
	5	6.35%	60.69%	39.31%	*9.00*	3.54		3.54
	6	5.77%	54.52%	45.48%	9.52	4.33		4.33
	7	5.18%	48.34%	51.66%	10.01	5.17		5.17
Stage 2	8	4.59%	42.17%	57.83%	10.47	6.06		6.06
	9	4.01%	36.00%	64.00%	10.89	6.97		6.97
	10	3.42%	36.00%	64.00%	11.26	7.21	250.45	257.66
Stage 3	11+	3.42%	36.00%	64.00%	11.65	*7.46*		
							K_e =	**7.27%**



Three Stage Free Cash Flow to Equity Discount Model

Company	WEC Energy Gr	3.90%	GDP
Ticker	wec	21.5	Industry P/E
		64.0%	Target Dividend Payout Ratio
		9.5%	Target ROE

	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		49.99%	50.01%	***3.58***			**(92.23)**
	1	4.75%	70.18%	29.82%	***3.75***	1.12		1.12
	2	6.67%	65.79%	34.21%	4.00	1.37		1.37
Stage 1	3	6.25%	61.92%	38.08%	4.25	1.62		1.62
	4	5.88%	58.48%	41.52%	4.50	1.87		1.87
	5	5.56%	53.98%	46.02%	***4.75***	2.19		2.19
	6	5.13%	49.49%	50.51%	4.99	2.52		2.52
	7	4.70%	44.99%	55.01%	5.23	2.88		2.88
Stage 2	8	4.27%	40.50%	59.50%	5.45	3.24		3.24
	9	3.85%	36.00%	64.00%	5.66	3.62		3.62
	10	3.42%	36.00%	64.00%	5.86	3.75	130.19	133.94
Stage 3	11+	3.42%	36.00%	64.00%	6.06	*3.88*		
							K_e =	**5.65%**



Three Stage Free Cash Flow to Equity Discount Model

Company	Xcel Energy Inc	3.90%	GDP
Ticker	xel	21.5	Industry P/E
		64.0%	Target Dividend Payout Ratio
		9.5%	Target ROE

	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		60.73%	39.27%	*2.60*			(63.49)
	1	5.77%	47.85%	52.15%	*2.75*	1.43		1.43
	2	4.55%	45.77%	54.23%	2.88	1.56		1.56
Stage 1	3	4.35%	43.86%	56.14%	3.00	1.68		1.68
	4	4.17%	42.11%	57.89%	3.13	1.81		1.81
	5	4.00%	40.88%	59.12%	*3.25*	1.92		1.92
	6	3.88%	39.66%	60.34%	3.38	2.04		2.04
	7	3.77%	38.44%	61.56%	3.50	2.16		2.16
Stage 2	8	3.65%	37.22%	62.78%	3.63	2.28		2.28
	9	3.54%	36.00%	64.00%	3.76	2.41		2.41
	10	3.42%	36.00%	64.00%	3.89	2.49	86.46	88.95
Stage 3	11+	3.42%	36.00%	64.00%	4.02	*2.57*		
							K_e =	**5.80%**