

DR. WOOLRIDGE'S PROXY GROUP - OWNED GENERATION SCREEN

	[1]	[2]
Company	Ticker	Company-Owned Generation % of MWh Sales to Ultimate Customers
		Company-Owned Generation <60% of MWh Sales to Ultimate Customers
ALLETE, Inc.	ALE	59.89%
Alliant Energy Corporation	LNT	58.02%
Ameren Corporation	AEE	77.22%
American Electric Power Company, Inc.	AEP	60.53%
Avangrid, Inc.	AGR	53.45%
Avista Corporation	AVA	59.98%
CMS Energy Corporation	CMS	45.47%
Consolidated Edison, Inc.	ED	11.00%
Dominion Resources, Inc.	D	86.81%
Duke Energy Corporation	DUK	84.18%
Edison International	EIX	16.49%
Entergy Corporation	ETR	61.17%
Energy, Inc	EVRG	74.37%
Eversource Energy	ES	2.11%
Exelon Corporation	EXC	0.00%
FirstEnergy Corporation	FE	31.50%
Hawaiian Electric Industries, Inc.	HE	53.75%
IDACORP, Inc.	IDA	75.37%
MGE Energy, Inc.	MGEE	61.73%
NextEra Energy, Inc.	NEE	95.06%
NorthWestern Corporation	NWE	57.42%
OGE Energy Corporation	OGE	67.08%
Pinnacle West Capital Corporation	PNW	75.94%
Portland General Electric Company	POR	56.69%
PNM Resources, Inc.	PNM	79.87%
PPL Corporation	PPL	43.89%
Sempra Energy	SRE	13.05%
Southern Company	SO	81.60%
Wisconsin Energy Corporation	WEC	69.33%
Xcel Energy Inc.	XEL	60.80%

Notes:

[1] Source: SNL Financial (pulled from FERC Form 1) 2015-2017

[2] Equals if [1] < 60%, 1

ADJUSTMENTS TO WOOLRIDGE INTERNAL GROWTH RATE MEASURES
ELECTRIC PROXY GROUP

<i>Value Line</i>								
Sustainable Growth								
Company	Ticker	Return on Equity	Retention Rate	Internal Growth	Shares Out	Value Change	S x V	BR + SV
ALLETE, Inc. (NYSE-ALE)	ALE	9.50%	37.00%	3.52%	0.15%	35.00%	0.05%	3.57%
Alliant Energy Corporation (NYSE-LNT)	LNT	10.00%	38.00%	3.80%	1.78%	35.18%	0.63%	4.43%
Ameren Corporation (NYSE-AEE)	AEE	10.50%	39.00%	4.10%	1.35%	37.31%	0.50%	4.60%
American Electric Power Co. (NYSE-AEP)	AEP	10.50%	29.00%	3.05%	1.81%	45.71%	0.83%	3.87%
Avangrid (NYSE-AVG)	AGR	5.50%	30.00%	1.65%	0.00%	0.00%	0.00%	1.65%
Avista Corp (NYSE-AVA)	AVA	8.00%	29.00%	2.32%	2.31%	32.11%	0.74%	3.06%
CMS Energy Corporation (NYSE-CMS)	CMS	14.00%	41.00%	5.74%	2.12%	55.45%	1.18%	6.92%
Consolidated Edison, Inc. (NYSE-ED)	ED	8.50%	33.00%	2.81%	2.07%	32.78%	0.68%	3.48%
Dominion Energy Inc. (NYSE-D)	D	13.00%	21.00%	2.73%	10.94%	55.83%	6.11%	8.84%
Duke Energy Corporation (NYSE-DUK)	DUK	8.50%	30.00%	2.55%	1.54%	24.86%	0.38%	2.93%
Edison International (NYSE-EIX)	EIX	11.00%	47.00%	5.17%	5.05%	32.76%	1.65%	6.82%
Energry Corporation (NYSE-ETR)	ETR	11.00%	29.00%	3.19%	4.12%	48.44%	1.99%	5.18%
Evergy (NYSE-EVRG)	EVRG	8.50%	31.00%	2.64%	-5.72%	36.15%	-2.07%	0.57%
Eversource Energy (NYSE-ES)	ES	9.00%	38.00%	3.42%	3.36%	40.32%	1.36%	4.78%
Exelon Corporation (NYSE-EXC)	EXC	9.00%	52.00%	4.68%	0.48%	15.26%	0.07%	4.75%
FirstEnergy Corporation (NYSE-FE)	FE	16.00%	35.00%	5.60%	4.22%	65.71%	2.77%	8.37%
Hawaiian Electric Industries (NYSE-HE)	HE	9.50%	34.00%	3.23%	1.23%	39.38%	0.48%	3.71%
IDACORP, Inc. (NYSE-IDA)	IDA	9.50%	37.00%	3.52%	-0.01%	40.79%	-0.01%	3.51%
MGE Energy, Inc. (NYSE-MGEE)	MGEE	10.50%	48.00%	5.04%	0.00%	48.64%	0.00%	5.04%
Nextera Energy, Inc. (NYSE-NEE)	NEE	12.50%	40.00%	5.00%	1.54%	54.51%	0.84%	5.84%
NorthWestern Corporation (NYSE-NWE)	NWE	9.00%	34.00%	3.06%	0.48%	35.71%	0.17%	3.23%
OGE Energy Corp. (NYSE-OGE)	OGE	11.50%	30.00%	3.45%	0.06%	50.53%	0.03%	3.48%
Pinnacle West Capital Corp. (NYSE-PNW)	PNW	10.50%	34.00%	3.57%	0.60%	44.25%	0.27%	3.84%
PNM Resources, Inc. (NYSE-PNM)	PNM	9.50%	42.00%	3.99%	2.22%	41.11%	0.91%	4.90%
Portland General Electric Company (NYSE-POR)	POR	9.00%	34.00%	3.06%	0.26%	38.10%	0.10%	3.16%
PPL Corporation (NYSE-PPL)	PPL	13.00%	36.00%	4.68%	2.99%	46.25%	1.38%	6.06%
Sempra Energy (NYSE-SRE)	SRE	12.00%	42.00%	5.04%	6.42%	50.65%	3.25%	8.29%
Southern Company (NYSE-SO)	SO	12.50%	27.00%	3.38%	1.74%	49.58%	0.86%	4.24%
WEC Energy Group (NYSE-WEC)	WEC	12.00%	33.00%	3.96%	0.00%	55.45%	0.00%	3.96%
Xcel Energy Inc. (NYSE-XEL)	XEL	11.00%	38.00%	4.18%	1.17%	47.39%	0.55%	4.73%
Mean		10.48%	35.60%	3.74%	1.81%	41.17%	0.86%	4.59%
Median		10.50%	34.50%	3.52%	1.54%	40.95%	0.59%	4.33%

Notes:
Data Source: *Value Line Investment Survey*.

30-Day Constant Growth DCF - Woolridge Electric Proxy Group

Company	[1] Annualized Dividend	[2] Dividend Yield	[3] Expected Dividend Yield	[4] Value Line Earnings Growth	[5] Yahoo Earnings Growth	[6] Zacks Earnings Growth	[7] Average Growth Rate	[8] Mean ROE
ALLETE, Inc. (NYSE-ALE)	\$ 2.35	2.86%	2.96%	6.00%	7.00%	7.20%	6.73%	9.69%
Alliant Energy Corporation (NYSE-LNT)	\$ 1.42	2.69%	2.77%	6.50%	5.40%	5.49%	5.80%	8.57%
Ameren Corporation (NYSE-AEE)	\$ 1.98	2.62%	2.70%	6.50%	4.30%	6.16%	5.65%	8.35%
American Electric Power Co. (NYSE-AEP)	\$ 2.80	3.06%	3.14%	4.00%	6.05%	5.65%	5.23%	8.37%
Avangrid (NYSE-AVG)	\$ 1.76	3.60%	3.73%	8.50%	6.20%	7.39%	7.36%	11.09%
Avista Corporation (NYSE-AVA)	\$ 1.55	3.28%	3.34%	3.50%	3.50%	3.36%	3.45%	6.79%
CMS Energy Corporation (NYSE-CMS)	\$ 1.53	2.48%	2.57%	7.00%	7.50%	6.42%	6.97%	9.54%
Consolidated Edison, Inc. (NYSE-ED)	\$ 2.96	3.34%	3.39%	3.00%	2.78%	2.00%	2.59%	5.98%
Dominion Resources, Inc. (NYSE-D)	\$ 3.67	4.47%	4.59%	6.50%	4.41%	4.78%	5.23%	9.82%
Duke Energy Corporation (NYSE-DUK)	\$ 3.78	4.18%	4.29%	6.00%	4.65%	4.84%	5.16%	9.45%
Edison International (NYSE-EIX)	\$ 2.45	3.59%	3.68%	NMF	3.90%	5.27%	4.59%	8.26%
Entergy Corporation (NYSE-ETR)	\$ 3.72	3.17%	3.23%	0.50%	Negative	7.00%	3.75%	6.98%
Evergy, Inc. (NYSE-EVRG)	\$ 2.02	3.18%	3.28%	NMF	6.70%	6.43%	6.57%	9.85%
Eversource Energy (NYSE-ES)	\$ 2.14	2.60%	2.67%	5.50%	5.60%	5.63%	5.58%	8.25%
Exelon Corp. (NYSE-EXC)	\$ 1.45	3.24%	3.31%	9.00%	0.46%	4.50%	4.65%	7.97%
FirstEnergy Corporation (ASE-FE)	\$ 1.56	3.29%	3.40%	6.50%	Negative	6.00%	6.25%	9.65%
Hawaiian Electric Industries (NYSE-HE)	\$ 1.28	2.90%	2.95%	2.50%	3.40%	4.22%	3.37%	6.33%
IDACORP, Inc. (NYSE-IDA)	\$ 2.68	2.55%	2.59%	3.50%	2.50%	3.85%	3.28%	5.88%
MGE Energy, Inc. (NYSE-MGEE)	\$ 1.41	1.86%	1.90%	6.00%	4.00%	N/A	5.00%	6.90%
NextEra Energy Inc. (NYSE-NEE)	\$ 5.00	2.16%	2.26%	10.50%	7.99%	7.98%	8.82%	11.08%
NorthWestern Corporation (NYSE-NWE)	\$ 2.30	3.24%	3.29%	3.00%	3.20%	2.73%	2.98%	6.27%
OGE Energy Corp. (NYSE-OGE)	\$ 1.55	3.63%	3.72%	6.50%	3.50%	4.51%	4.84%	8.55%
Pinnacle West Capital Corp. (NYSE-PNW)	\$ 3.13	3.54%	3.63%	5.00%	4.41%	4.91%	4.77%	8.40%
PNM Resources, Inc. (NYSE-PNM)	\$ 1.16	2.36%	2.44%	7.00%	6.35%	5.60%	6.32%	8.76%
Portland General Electric Company (NYSE-POR)	\$ 1.54	2.77%	2.83%	4.50%	4.10%	4.54%	4.38%	7.21%
PPL Corporation (NYSE-PPL)	\$ 1.65	4.89%	4.91%	1.50%	0.50%	N/A	1.00%	5.91%
SEMPRA Energy (NYSE-SRE)	\$ 3.87	2.66%	2.79%	11.00%	10.05%	7.73%	9.59%	12.38%
Southern Company (NYSE-SO)	\$ 2.48	4.00%	4.06%	3.50%	1.56%	4.50%	3.19%	7.25%
WEC Energy Group (NYSE-WEC)	\$ 2.36	2.64%	2.72%	6.00%	6.15%	6.14%	6.10%	8.81%
Xcel Energy Inc. (NYSE-XEL)	\$ 1.62	2.63%	2.70%	5.50%	5.20%	5.42%	5.37%	8.08%
Mean [9]:								9.06%

Notes:

[1] JRW-9.2

[2] JRW-9.2

[3] Equals [2] X (1 + .5 X [7])

[4] JRW-9.4

[5] JRW-9.5

[6] JRW-9.5

[7] Equals average of [4], [5], and [6]

[8] Equals [2] X (1 + .5 X [7]) + [7]

[9] Excludes companies with ROEs less than 7%.

90-Day Constant Growth DCF - Woolridge Electric Proxy Group

Company	[1] Annualized Dividend	[2] Dividend Yield	[3] Expected Dividend Yield	[4] Value Line Earnings Growth	[5] Yahoo Earnings Growth	[6] Zacks Earnings Growth	[7] Average Growth Rate	[8] Mean ROE
ALLETE, Inc. (NYSE-ALE)	\$ 2.35	2.77%	2.86%	6.00%	7.00%	7.20%	6.73%	9.60%
Alliant Energy Corporation (NYSE-LNT)	\$ 1.42	2.71%	2.78%	6.50%	5.40%	5.49%	5.80%	8.58%
Ameren Corporation (NYSE-AEE)	\$ 1.98	2.59%	2.66%	6.50%	4.30%	6.16%	5.65%	8.31%
American Electric Power Co. (NYSE-AEP)	\$ 2.80	3.06%	3.14%	4.00%	6.05%	5.65%	5.23%	8.37%
Avangrid (NYSE-AVG)	\$ 1.76	3.52%	3.65%	8.50%	6.20%	7.39%	7.36%	11.02%
Avista Corporation (NYSE-AVA)	\$ 1.55	3.28%	3.34%	3.50%	3.50%	3.36%	3.45%	6.79%
CMS Energy Corporation (NYSE-CMS)	\$ 1.53	2.46%	2.55%	7.00%	7.50%	6.42%	6.97%	9.52%
Consolidated Edison, Inc. (NYSE-ED)	\$ 2.96	3.30%	3.35%	3.00%	2.78%	2.00%	2.59%	5.94%
Dominion Resources, Inc. (NYSE-D)	\$ 3.67	4.60%	4.72%	6.50%	4.41%	4.78%	5.23%	9.95%
Duke Energy Corporation (NYSE-DUK)	\$ 3.78	4.10%	4.20%	6.00%	4.65%	4.84%	5.16%	9.37%
Edison International (NYSE-EIX)	\$ 2.45	3.43%	3.51%	NMF	3.90%	5.27%	4.59%	8.10%
Entergy Corporation (NYSE-ETR)	\$ 3.72	3.24%	3.31%	0.50%	Negative	7.00%	3.75%	7.06%
Evergy, Inc. (NYSE-EVRG)	\$ 2.02	3.15%	3.25%	NMF	6.70%	6.43%	6.57%	9.81%
Eversource Energy (NYSE-ES)	\$ 2.14	2.61%	2.68%	5.50%	5.60%	5.63%	5.58%	8.26%
Exelon Corp. (NYSE-EXC)	\$ 1.45	3.14%	3.22%	9.00%	0.46%	4.50%	4.65%	7.87%
FirstEnergy Corporation (ASE-FE)	\$ 1.56	3.33%	3.44%	6.50%	Negative	6.00%	6.25%	9.69%
Hawaiian Electric Industries (NYSE-HE)	\$ 1.28	2.88%	2.93%	2.50%	3.40%	4.22%	3.37%	6.30%
IDACORP, Inc. (NYSE-IDA)	\$ 2.68	2.49%	2.53%	3.50%	2.50%	3.85%	3.28%	5.81%
MGE Energy, Inc. (NYSE-MGEE)	\$ 1.41	1.85%	1.90%	6.00%	4.00%	N/A	5.00%	6.90%
NextEra Energy Inc. (NYSE-NEE)	\$ 5.00	2.20%	2.30%	10.50%	7.99%	7.98%	8.82%	11.13%
NorthWestern Corporation (NYSE-NWE)	\$ 2.30	3.18%	3.23%	3.00%	3.20%	2.73%	2.98%	6.21%
OGE Energy Corp. (NYSE-OGE)	\$ 1.55	3.59%	3.67%	6.50%	3.50%	4.51%	4.84%	8.51%
Pinnacle West Capital Corp. (NYSE-PNW)	\$ 3.13	3.38%	3.46%	5.00%	4.41%	4.91%	4.77%	8.23%
PNM Resources, Inc. (NYSE-PNM)	\$ 1.16	2.30%	2.38%	7.00%	6.35%	5.60%	6.32%	8.69%
Portland General Electric Company (NYSE-POR)	\$ 1.54	2.75%	2.81%	4.50%	4.10%	4.54%	4.38%	7.19%
PPL Corporation (NYSE-PPL)	\$ 1.65	5.21%	5.23%	1.50%	0.50%	N/A	1.00%	6.23%
SEMPRA Energy (NYSE-SRE)	\$ 3.87	2.70%	2.83%	11.00%	10.05%	7.73%	9.59%	12.42%
Southern Company (NYSE-SO)	\$ 2.48	4.09%	4.16%	3.50%	1.56%	4.50%	3.19%	7.35%
WEC Energy Group (NYSE-WEC)	\$ 2.36	2.57%	2.65%	6.00%	6.15%	6.14%	6.10%	8.74%
Xcel Energy Inc. (NYSE-XEL)	\$ 1.62	2.58%	2.65%	5.50%	5.20%	5.42%	5.37%	8.02%
Mean [9]:								8.95%

Notes:

[1] JRW-9.2

[2] JRW-9.2

[3] Equals [2] X (1 + .5 X [7])

[4] JRW-9.4

[5] JRW-9.5

[6] JRW-9.5

[7] Equals average of [4], [5], and [6]

[8] Equals [2] X (1 + .5 X [7]) + [7]

[9] Excludes companies with ROEs less than 7%.

180-Day Constant Growth DCF - Woolridge Electric Proxy Group

Company	[1] Annualized Dividend	[2] Dividend Yield	[3] Expected Dividend Yield	[4] Value Line Earnings Growth	[5] Yahoo Earnings Growth	[6] Zacks Earnings Growth	[7] Average Growth Rate	[8] Mean ROE
ALLETE, Inc. (NYSE-ALE)	\$ 2.35	2.80%	2.89%	6.00%	7.00%	7.20%	6.73%	9.62%
Alliant Energy Corporation (NYSE-LNT)	\$ 1.42	2.82%	2.90%	6.50%	5.40%	5.49%	5.80%	8.70%
Ameren Corporation (NYSE-AEE)	\$ 1.98	2.62%	2.70%	6.50%	4.30%	6.16%	5.65%	8.35%
American Electric Power Co. (NYSE-AEP)	\$ 2.80	3.13%	3.22%	4.00%	6.05%	5.65%	5.23%	8.45%
Avangrid (NYSE-AVG)	\$ 1.76	3.50%	3.63%	8.50%	6.20%	7.39%	7.36%	10.99%
Avista Corporation (NYSE-AVA)	\$ 1.55	3.43%	3.49%	3.50%	3.50%	3.36%	3.45%	6.94%
CMS Energy Corporation (NYSE-CMS)	\$ 1.53	2.58%	2.66%	7.00%	7.50%	6.42%	6.97%	9.64%
Consolidated Edison, Inc. (NYSE-ED)	\$ 2.96	3.36%	3.41%	3.00%	2.78%	2.00%	2.59%	6.00%
Dominion Resources, Inc. (NYSE-D)	\$ 3.67	4.70%	4.82%	6.50%	4.41%	4.78%	5.23%	10.05%
Duke Energy Corporation (NYSE-DUK)	\$ 3.78	4.18%	4.29%	6.00%	4.65%	4.84%	5.16%	9.45%
Edison International (NYSE-EIX)	\$ 2.45	3.62%	3.71%	NMF	3.90%	5.27%	4.59%	8.29%
Entergy Corporation (NYSE-ETR)	\$ 3.72	3.48%	3.55%	0.50%	Negative	7.00%	3.75%	7.30%
Evergy, Inc. (NYSE-EVRG)	\$ 2.02	3.27%	3.38%	NMF	6.70%	6.43%	6.57%	9.95%
Eversource Energy (NYSE-ES)	\$ 2.14	2.74%	2.82%	5.50%	5.60%	5.63%	5.58%	8.40%
Exelon Corp. (NYSE-EXC)	\$ 1.45	3.05%	3.12%	9.00%	0.46%	4.50%	4.65%	7.77%
FirstEnergy Corporation (ASE-FE)	\$ 1.56	3.50%	3.61%	6.50%	Negative	6.00%	6.25%	9.86%
Hawaiian Electric Industries (NYSE-HE)	\$ 1.28	2.95%	2.99%	2.50%	3.40%	4.22%	3.37%	6.37%
IDACORP, Inc. (NYSE-IDA)	\$ 2.68	2.56%	2.60%	3.50%	2.50%	3.85%	3.28%	5.89%
MGE Energy, Inc. (NYSE-MGEE)	\$ 1.41	1.93%	1.98%	6.00%	4.00%	N/A	5.00%	6.98%
NextEra Energy Inc. (NYSE-NEE)	\$ 5.00	2.34%	2.45%	10.50%	7.99%	7.98%	8.82%	11.27%
NorthWestern Corporation (NYSE-NWE)	\$ 2.30	3.20%	3.25%	3.00%	3.20%	2.73%	2.98%	6.23%
OGE Energy Corp. (NYSE-OGE)	\$ 1.55	3.61%	3.70%	6.50%	3.50%	4.51%	4.84%	8.54%
Pinnacle West Capital Corp. (NYSE-PNW)	\$ 3.13	3.34%	3.42%	5.00%	4.41%	4.91%	4.77%	8.19%
PNM Resources, Inc. (NYSE-PNM)	\$ 1.16	2.35%	2.42%	7.00%	6.35%	5.60%	6.32%	8.74%
Portland General Electric Company (NYSE-POR)	\$ 1.54	2.81%	2.87%	4.50%	4.10%	4.54%	4.38%	7.25%
PPL Corporation (NYSE-PPL)	\$ 1.65	5.28%	5.31%	1.50%	0.50%	N/A	1.00%	6.31%
SEMPRA Energy (NYSE-SRE)	\$ 3.87	2.80%	2.93%	11.00%	10.05%	7.73%	9.59%	12.52%
Southern Company (NYSE-SO)	\$ 2.48	4.32%	4.39%	3.50%	1.56%	4.50%	3.19%	7.58%
WEC Energy Group (NYSE-WEC)	\$ 2.36	2.72%	2.80%	6.00%	6.15%	6.14%	6.10%	8.90%
Xcel Energy Inc. (NYSE-XEL)	\$ 1.62	2.67%	2.75%	5.50%	5.20%	5.42%	5.37%	8.12%
Mean [9]:								9.04%

Notes:

[1] JRW-9.2

[2] JRW-9.2

[3] Equals [2] X (1 + .5 X [7])

[4] JRW-9.4

[5] JRW-9.5

[6] JRW-9.5

[7] Equals average of [4], [5], and [6]

[8] Equals [2] X (1 + .5 X [7]) + [7]

[9] Excludes companies with ROEs less than 7%.

WOOLRIDGE - ADJUSTED DCF ANALYSIS
ELECTRIC PROXY GROUP
NORMALIZED DIVIDEND YIELD

	[1]
	2011
Dividend Yield	4.35%
Adjustment Factor [2]	<u>1.025</u>
Adjusted Dividend Yield [3]	4.46%
Growth Rate [4]	<u>5.00%</u>
Equity Cost Rate [5]	9.46%

Notes:

[1] Source: Bloomberg Professional: 2011 Average Dividend Yield for Electric Utility Stocks.

[2] Equals $1 + .5 \times [4]$

[3] Equals Dividend Yield $\times [2]$

[4] Source: Attachment JRW-9, Page 1.

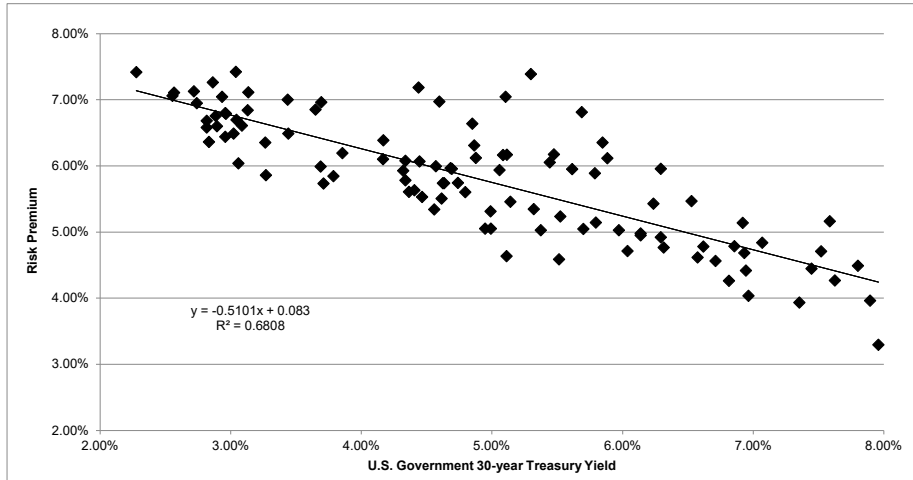
[5] Equals $[3] + [4]$

BOND YIELD PLUS RISK PREMIUM

	[1]	[2]	[3]
	Average Authorized Electric ROE	U.S. Govt. 30-year Treasury	Risk Premium
1992.1	12.29%	7.80%	4.49%
1992.2	11.86%	7.89%	3.96%
1992.3	11.89%	7.45%	4.45%
1992.4	12.23%	7.52%	4.71%
1993.1	11.91%	7.07%	4.84%
1993.2	11.64%	6.86%	4.79%
1993.3	11.08%	6.31%	4.77%
1993.4	11.09%	6.14%	4.95%
1994.1	11.19%	6.57%	4.62%
1994.2	11.29%	7.35%	3.93%
1994.3	12.75%	7.58%	5.17%
1994.4	11.25%	7.96%	3.30%
1995.1	11.90%	7.63%	4.27%
1995.2	11.36%	6.94%	4.42%
1995.3	11.28%	6.71%	4.56%
1995.4	11.67%	6.23%	5.43%
1996.1	12.25%	6.29%	5.96%
1996.2	12.06%	6.92%	5.14%
1996.3	11.00%	6.96%	4.04%
1996.4	11.40%	6.62%	4.78%
1997.1	11.08%	6.81%	4.27%
1997.2	11.62%	6.93%	4.68%
1997.3	12.00%	6.53%	5.47%
1997.4	11.12%	6.14%	4.98%
1998.1	12.00%	5.88%	6.12%
1998.2	12.20%	5.85%	6.35%
1998.3	11.65%	5.47%	6.18%
1998.4	12.15%	5.10%	7.05%
1999.1	10.40%	5.37%	5.03%
1999.2	10.94%	5.79%	5.15%
1999.3	10.75%	6.04%	4.71%
2000.1	11.21%	6.29%	4.92%
2000.2	11.00%	5.97%	5.03%
2000.3	11.68%	5.79%	5.89%
2000.4	12.50%	5.69%	6.81%
2001.1	11.50%	5.44%	6.06%
2001.2	10.75%	5.70%	5.05%
2001.3	10.76%	5.52%	5.24%
2001.4	12.69%	5.30%	7.39%
2002.1	10.10%	5.51%	4.59%
2002.2	11.57%	5.61%	5.95%
2002.3	11.25%	5.08%	6.17%
2003.1	11.49%	4.85%	6.64%
2003.2	11.58%	4.60%	6.98%
2003.3	9.75%	5.11%	4.64%
2003.4	11.28%	5.11%	6.17%
2004.1	11.00%	4.88%	6.12%
2004.2	10.67%	5.32%	5.35%
2004.3	11.00%	5.06%	5.94%
2004.4	11.18%	4.86%	6.31%
2005.1	10.65%	4.69%	5.96%
2005.2	10.00%	4.47%	5.53%
2005.3	11.63%	4.44%	7.19%
2005.4	10.65%	4.68%	5.97%
2006.1	10.38%	4.63%	5.74%
2006.2	10.60%	5.14%	5.46%
2006.3	10.05%	4.99%	5.05%
2006.4	10.49%	4.74%	5.75%
2007.1	10.40%	4.80%	5.60%
2007.2	10.31%	4.99%	5.32%
2007.3	10.00%	4.95%	5.05%
2007.4	10.12%	4.61%	5.51%
2008.1	10.04%	4.41%	5.64%
2008.2	10.57%	4.57%	6.00%
2008.3	10.52%	4.44%	6.07%
2008.4	10.50%	3.65%	6.85%
2009.1	10.44%	3.44%	7.00%
2009.2	10.56%	4.17%	6.39%
2009.3	10.25%	4.32%	5.93%
2009.4	10.41%	4.34%	6.08%
2010.1	10.37%	4.62%	5.74%
2010.2	9.97%	4.36%	5.61%
2010.3	10.05%	3.86%	6.20%
2010.4	10.27%	4.17%	6.10%
2011.1	9.90%	4.56%	5.34%
2011.2	10.12%	4.34%	5.78%
2011.3	10.66%	3.69%	6.96%
2011.4	10.47%	3.04%	7.43%

BOND YIELD PLUS RISK PREMIUM

	[1]	[2]	[3]
	Average Authorized Electric ROE	U.S. Govt. 30-year Treasury	Risk Premium
2012.1	10.25%	3.14%	7.11%
2012.2	9.98%	2.93%	7.05%
2012.3	9.69%	2.74%	6.95%
2012.4	10.13%	2.86%	7.27%
2013.1	9.98%	3.13%	6.85%
2013.3	9.45%	3.71%	5.74%
2013.4	9.64%	3.79%	5.85%
2014.1	9.68%	3.69%	5.99%
2014.2	9.93%	3.44%	6.49%
2014.3	9.62%	3.26%	6.36%
2014.4	9.76%	2.96%	6.79%
2015.1	9.62%	2.55%	7.06%
2015.2	9.64%	2.88%	6.76%
2015.3	9.40%	2.96%	6.44%
2015.4	9.76%	2.96%	6.80%
2016.1	9.85%	2.72%	7.13%
2016.2	9.68%	2.57%	7.11%
2016.3	9.70%	2.28%	7.42%
2016.4	9.20%	2.83%	6.37%
2017.1	9.74%	3.04%	6.70%
2017.2	9.50%	2.90%	6.60%
2017.3	9.50%	2.82%	6.68%
2017.4	9.40%	2.82%	6.58%
2018.1	9.52%	3.02%	6.49%
2018.2	9.70%	3.09%	6.61%
2018.3	9.10%	3.06%	6.04%
2018.4	9.13%	3.27%	5.86%
AVERAGE	10.70%	4.89%	5.81%
MEDIAN	10.57%	4.85%	5.94%



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.825117
R Square	0.680818
Adjusted R Square	0.677719
Standard Error	0.005269
Observations	105

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	0.006100	0.006100	219.699567	0.000000
Residual	103	0.002860	0.000028		
Total	104	0.008960			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.0830	0.001758	47.23	0.000000	0.079545	0.086519	0.079545	0.086519
U.S. Govt. 30-year Treasury	(0.5101)	0.034416	(14.82)	0.000000	(0.578373)	(0.441862)	(0.578373)	(0.441862)

	[7]	[8]	[9]
	U.S. Govt. 30-year Treasury	Risk Premium	ROE
Current 30-Day Average [4]	3.04%	6.75%	9.79%
Blue Chip Consensus Forecast (Q2 2019 - Q2 2020) [5]	3.28%	6.63%	9.91%
Blue Chip Consensus Forecast (2020-2024) [6]	3.90%	6.31%	10.21%
AVERAGE			9.97%

Notes:

- [1] Source: Regulatory Research Associates, accessed March 12, 2019.
- [2] Source: Bloomberg Professional, quarterly bond yields are the average of each trading day in the quarter
- [3] Equals Column [1] - Column [2]
- [4] Source: Bloomberg Professional, 30-day average as of February 28, 2019
- [5] Source: Blue Chip Financial Forecasts, Vol. 38, No. 3, March 1, 2019, at 2
- [6] Source: Blue Chip Financial Forecasts, Vol. 37, No. 12, December 1, 2018, at 14
- [7] See notes [4], [5] & [6]
- [8] Equals $0.083032 + (-0.510118 \times \text{Column [7]})$
- [9] Equals Column [7] + Column [8]

DR. CHATTOPADHYAY'S ADJUSTED CAPM ANALYSIS

	Line No.	Formula/Note	Adjusted CAPM
DCF Market Return	[1]	Schedule PKC-10 (All S&P 500 Stocks)	14.39%
Risk Free	[2]	Near-term projected 30-year U.S. Treasury bond yield (Q1 2020 - Q1 2021), Blue Chip Financial Forecasts, Vol. 38, No. 11, November 1, 2019, at 2	2.36%
Market Beta	[3]	Schedule PKC-10 (All S&P 500 Stocks)	1.020
Risk Premium	[4]	Equals [1] - [2]	12.03%
Beta Adjusted Risk Premium	[5]	Equals [4] / [3]	11.79%
Proxy Group Beta	[6]	Bloomberg Professional (10-yr Beta as of November 29, 2019)	0.64
CAPM ROE	[7]	Equals [2] + [6] x [5]	9.96%