12/18/2013	9.80%	3.51%	6.29%
12/19/2013	10.15%	3.51%	6.64%
12/30/2013	9.50%	3.54%	5.96%
2/20/2014	9.20%	3.68%	5.52%
2/26/2014	9.75%	3.69%	6.06%
3/17/2014	9.55%	3.72%	5.83%
3/26/2014	9.40%	3.73%	5.67%
3/26/2014	9.96%	3.73%	6.23%
4/2/2014	9.70%	3.73%	5.97%
5/16/2014	9.80%	3.70%	6.10%
5/30/2014	9.70%	3.68%	6.02%
6/6/2014	10.40%	3.67%	6.73%
6/30/2014	9.55%	3.64%	5.91%
7/2/2014	9.62%	3.64%	5.98%
7/10/2014	9.95%	3.63%	6.32%
7/23/2014	9.75%	3.61%	6.14%
7/29/2014	9.45%	3.60%	5.85%
7/31/2014	9.90%	3.60%	6.30%
8/20/2014	9.75%	3.57%	6.18%
8/25/2014	9.60%	3.56%	6.04%
8/29/2014	9.80%	3.54%	6.26%
9/11/2014	9.60%	3.51%	6.09%
9/15/2014	10.25%	3.51%	6.74%
10/9/2014	9.80%	3.45%	6.35%
11/6/2014	9.56%	3.37%	6.19%
11/6/2014	10.20%	3.37%	6.83%
11/14/2014	10.20%	3.35%	6.85%
11/26/2014	9.70%	3.33%	6.37%
11/26/2014	10.20%	3.33%	6.87%
12/4/2014	9.68%	3.31%	6.37%
12/10/2014	9.25%	3.29%	5.96%
12/10/2014	9.25%	3.29%	5.96%
12/11/2014	10.07%	3.29%	6.78%
12/12/2014	10.20%	3.28%	6.92%
12/17/2014	9.17%	3.27%	5.90%
12/18/2014	9.83%	3.26%	6.57%
1/23/2015	9.50%	3.14%	6.36%
2/24/2015	9.83%	3.04%	6.79%
3/18/2015	9.75%	2.98%	6.77%
3/25/2015	9.50%	2.96%	6.54%
3/26/2015	9.72%	2.95%	6.77%
4/23/2015	10.20%	2.87%	7.33%
4/29/2015	9.53%	2.86%	6.67%
5/1/2015	9.60%	2.85%	6.75%
5/26/2015	9.75%	2.83%	6.92%
6/17/2015	9.00%	2.82%	6.18%
6/17/2015	9.00%	2.82%	6.18%
9/2/2015	9.50%	2.79%	6.71%
9/10/2015	9.30%	2.79%	6.51%
10/15/2015	9.00%	2.81%	6.19%
11/19/2015	10.00%	2.88%	7.12%
11/19/2015	10.30%	2.88%	7.42%

12/13/2018	9.30%	3.14%	6.16%
12/14/2018	9.50%	3.14%	6.36%
12/19/2018	9.84%	3.14%	6.70%
12/20/2018	9.65%	3.14%	6.51%
12/21/2018	9.30%	3.14%	6.16%
1/9/2019	10.00%	3.14%	6.86%
		# of Cases:	1580
		Average:	4.66%

Expected Earnings Analysis

Company	Ticker	[1] Expected ROE 2021-23/ 2022-24	[2] Shares Outstanding 2019	[3] Shares Outstanding 2021-23/ 2022-24	[4] Shares Outstanding % Increase	[5] Adjustment Factor	[6] Adjusted ROE
ALLETE, Inc.	ALE	9 0%	52 00	53.50	0.71%	1 004	9.03%
Alliant Energy Corporation	LNT	10.5%	240.00	245.00	0.52%	1.003	10.53%
Ameren Corporation	AEE	10.5%	245.50	250.00	0.46%	1.002	10.52%
American Electric Power Company, Inc.	AEP	11 0%	495.00	515.00	1.00%	1 005	11.05%
Avangrid, Inc	AGR	6.5%	309 00	309.00	0.00%	1.000	6.50%
Black Hills Corporation	BKH	10 0%	60.50	61.00	0.21%	1.001	10.01%
CMS Energy Corporation	CMS	14.0%	286.50	294.00	0.65%	1.003	14.05%
Consolidated Edison, Inc	ED	8 5%	328.00	332.00	0.24%	1.001	8.51%
DTE Energy Company	DTE	11.0%	192.00	195.00	0.39%	1.002	11 02%
Duke Energy Corporation	DUK	8.5%	731.50	750.00	0.50%	1.002	8 52%
El Paso Electric Company	EE	8.5%	40.70	41.00	0.18%	1.001	8.51%
Evergy, Inc.	EVRG	9.5%	227.00	212 00	-1.69%	0.991	9 42%
Eversource Energy	ES	9.5%	316.89	316 89	0.00%	1.000	9.50%
Hawaiian Electric Industries, Inc.	HE	9.5%	110.00	113.00	0.67%	1.003	9 53%
NextEra Energy, Inc.	NEE	13.5%	535.00	535 00	0.00%	1.000	13.50%
NorthWestern Corporation	NWE	9.0%	50.50	51.00	0.25%	1.001	9.01%
OGE Energy Corp.	OGE	11.5%	199.70	199.70	0.00%	1.000	11.50%
Otter Tail Corporation	OTTR	11.0%	41.00	44 00	1.78%	1.009	11.10%
Pinnacle West Capital Corporation	PNW	10.5%	112.75	114.25	0.33%	1.002	10.52%
PNM Resources, Inc.	PNM	9.5%	79.65	83.00	1.04%	1.005	9 55%
Portland General Electric Company	POR	9.0%	89.40	90.00	0.17%	1.001	9.01%
Southern Company	SO	13.0%	1050.00	1090.00	0.75%	1.004	13.05%
Wisconsin Energy Corporation	WEC	12.0%	315.50	315 50	0.00%	1.000	12.00%
Xcel Energy Inc.	XEL	10.5%	518.00	533 00	0.72%	1.004	10.54%
						Median	10.26%
						Average	10.27%

Notes

[1] Source: Value Line
[2] Source. Value Line
[3] Source: Value Line
[4] Equals =([3] / [2])^(1/4)-1, ([3] / [2])^(1/5)-1
[5] Equals (2 x (1 + [4])) / (2 + [4])
[6] Equals [1] x [5]

Flotation Cost Adjustment

Two most recent open market common stock issuances per company, if available — Emera issuances are included for comparison, but are not in averages

Company	Date	[1] Shares Issued	[2] Offering Price	[3] Underwriting Discount	[4] Offering Expense	[5] Net Proceeds Per Share	[6] Total Flotation Costs	[7] Gross Equity Issue Before Costs	[8] Net Proceeds	[9] Flotation Cost Percentage
CenterPoint Energy, Inc	10/1/2018	69,633,027	$27 25	$0 7500	$1,000,000	$26 49	$53,224,770	$1,897,499,986	$1,844,275,216	2 805%
CenterPoint Energy, Inc	6/15/2010	25,300,000	$12 90	$0 4515	$390,000	$12 43	$11,812,950	$326,370,000	$314,557,050	3 619%
									Average	3 619%
ALLETE, Inc	2/27/2014	3,220,000	$49 75	$1 7413	$450,000	$47 87	$6,056,825	$160,195,000	$154,138,175	3 781%
ALLETE, Inc	5/25/2001	7,475,000	$23 68	$0 9472	$350,000	$22 69	$7,430,320	$177,008,000	$169,577,680	4 196%
Alliant Energy Corporation	7/1/2003	17,250,000	$19 25	$0 7700	$370,000	$18 46	$13,652,500	$332,062,500	$318,410,000	4 111%
Alliant Energy Corporation	11/8/2001	9,775,000	$28 00	$1 0500	$425,000	$26 91	$10,688,750	$273,700,000	$263,011,250	3 905%
Ameren Corp	9/9/2009	21,850,000	$25 25	$0 7575	$450 000	$24 47	$17,001,375	$551,712,500	$534,711,125	3 082%
Ameren Corp	6/30/2004	10,925,000	$42 00	$1 2600	$400 000	$40 70	$14,165,500	$458,850,000	$444,684,500	3 087%
American Electric Power Company, Inc	4/1/2009	69,000,000	$24 50	$0 7350	$400,000	$23 76	$51,115,000	$1,690,500,000	$1,639,385,000	3 024%
American Electric Power Company, Inc	2/27/2003	57,500,000	$20 95	$0 6285	$550,000	$20 31	$36,688,750	$1,204,625,000	$1,167,936,250	3 046%
Avangrid, Inc	9/26/2013	5,750,000	$37 25	$1 3038	$250,000	$35 90	$7,746,563	$214,187,500	$206,440,938	3 617%
Avangrid, Inc	9/16/2010	20,355,000	$25 75	$1 0944	$325,000	$24 64	$22,601,003	$524,141,250	$501,540,247	4 312%
Black Hills Corporation	11/19/2015	5,980,000	$40 25	$1 4088	$1,200,000	$38 64	$9,624,325	$240,695,000	$231,070,675	3 999%
Black Hills Corporation	11/12/2010	4,600,000	$29 75	$1 0413	$276,650	$28 65	$5,066,400	$136,850,000	$131,783,600	3 702%
CMS Energy Corporation	3/30/2005	23,000,000	$12 25	$0 4288	$325,000	$11 81	$10,187,400	$281,750,000	$271,562,600	3 616%
CMS Energy Corporation	10/7/2004	32,775,000	$9 10	$0 3185	$325,000	$8 77	$10,763,838	$298,252,500	$287,488,663	3 609%
Consolidated Edison, Inc	8/8/2017	4,100,000	$83 77	$0 2899	$350,000	$83 39	$1,538,590	$343,457,410	$341,918,820	0 448%
Consolidated Edison, Inc	5/11/2016	10,120,000	$71 50	$2 1450	$550,000	$69 30	$22,257,400	$723,580,000	$701,322,600	3 076%
DTE Energy Company	6/19/2002	6,325,000	$43 25	$1 4056	$250,000	$41 80	$9,140,420	$273,556,250	$264,415,830	3 341%
Duke Energy Corporation	3/6/2018	21,275,000	$74 07	$0 0000	$450,000	$74 05	$450,000	$1,575,881,800	$1,575,431,800	0 029%
Duke Energy Corporation	3/1/2016	10,637,500	$72 00	$2 1600	$400,000	$69 80	$23,377,000	$765,900,000	$742,523,000	3 052%
Eversource Energy	3/16/2009	18,975,000	$20 20	$0 6565	$335,000	$19 53	$12,792,088	$383,295,000	$370,502,913	3 337%
Eversource Energy	12/6/2005	23,000,000	$19 09	$0 6200	$340,000	$18 46	$14,600,000	$438,070,000	$424,470,000	3 325%
Evergy, Inc	9/27/2018	60,490,000	$26 45	$0 7935	$500,000	$25 65	$48,498,815	$1,599,960,500	$1,551,461,685	3 031%
Evergy, Inc	9/23/2013	8,916,000	$31 15	$1 0900	$250,000	$30 03	$9,968,440	$277,733,400	$267,764,960	3 589%
Hawaiian Electric Industries, Inc	3/18/2013	7,000,000	$26 75	$1 0031	$450,000	$25 68	$7,471,840	$187,250,000	$179,778,160	3 990%
Hawaiian Electric Industries, Inc	12/2/2008	5,750,000	$23 00	$0 8625	$300,000	$22 09	$5,259,375	$132,250,000	$126,990,625	3 977%
NextEra Energy, Inc	11/1/2016	13,800,000	$124 00	$0 0000	$750,000	$123 95	$750,000	$1,711,200,000	$1,710,450,000	0 044%
NextEra Energy, Inc	11/18/2013	11,100,000	$88 03	$0 0000	$750,000	$87 96	$750,000	$977,133,000	$976,383,000	0 077%
NorthWestern Corporation	9/29/2015	1,100,000	$51 81	$1 3300	$1,000,000	$49 57	$2,463,000	$56,991,000	$54,528,000	4 322%
NorthWestern Corporation	11/5/2014	7,766,990	$51 50	$1 8025	$1,000,000	$49 57	$14,999,999	$399,999,985	$384,999,986	3 750%
OGE Energy Corp	8/21/2003	5,324,074	$21 60	$0 7900	$325,000	$20 75	$4,531,018	$114,999,998	$110,468,980	3 940%
Otter Tail Corporation	9/18/2008	5,175,000	$30 00	$1 0875	$400,000	$28 84	$6,027,813	$155,250,000	$149,222,188	3 883%
Otter Tail Corporation	12/7/2004	3,335,000	$25 45	$0 9500	$300,000	$24 41	$3,468,250	$84,875,750	$81,407,500	4 086%
Pinnacle West Capital Corporation	4/8/2010	6,900,000	$38 00	$1 3300	$190,000	$36 64	$9,367,000	$262,200,000	$252,833,000	3 572%
Pinnacle West Capital Corporation	4/27/2005	6,095,000	$42 00	$1 3650	$250,000	$40 59	$8,569,675	$255 990,000	$247,420,325	3 348%
PNM Resources, Inc	12/8/2006	5,750,000	$30 79	$1 0780	$250,000	$29 67	$6,448,500	$177,042,500	$170,594,000	3 642%
PNM Resources, Inc	3/23/2005	3,910,000	$28 78	$0 8697	$200,000	$25 84	$3,600,527	$104,631,600	$101,031,073	3 441%
Portland General Electric Company	6/11/2013	12,765,000	$29 50	$0 9588	$600,000	$28 49	$12,838,444	$376,567,500	$363,729,056	3 409%
Portland General Electric Company	3/5/2009	12,477,500	$14 10	$0 4935	$375,000	$13 58	$6,532,646	$175,932,750	$169,400,104	3 713%
Southern Company	8/16/2016	32,500,000	$48 30	$1 6800	$557,000	$47 62	$54,507,000	$1 802,250,000	$1,547,743,000	3 402%
Southern Company	5/5/2016	18,300,000	$48 60	$2 0200	$395,000	$46 56	$37,361,000	$889,380,000	$852,019,000	4 201%
WEC Energy Group, Inc	11/16/2005	5,290,000	$53 70	$1 7450	$0	$51 96	$9,231,050	$284,073,000	$274,841,950	3 250%
WEC Energy Group, Inc	11/20/2003	4,025,000	$43 00	$1 5050	$0	$41 50	$6,057,625	$173,075,000	$167,017,375	3 500%
Xcel Energy Inc	8/3/2010	21,850,000	$21 50	$0 6450	$600 000	$20 83	$14,693,250	$469,775,000	$455,081,750	3 128%
Xcel Energy Inc	9/9/2008	17,250,000	$20 25	$0 1500	$600,000	$20 07	$3,187,500	$349,312,500	$346,125,000	0 913%
Mean							$14,098,229	$523,717,678		
									WEIGHTED AVERAGE FLOTATION COSTS	2 892% [10]

Constant Growth Discounted Cash Flow Model Adjusted for Flotation Costs - 30 Day Average Stock Price

	Company	Ticker	[11] Annualized Dividend	[12] Average Stock Price	[13] Dividend Yield	[14] Expected Dividend Yield Current	[15] Expected Dividend Yield Adjusted for Flot Costs	[16] Zacks Earnings Growth	[17] First Call Earnings Growth	[18] Value Line Earnings Growth	[19] Average Earnings Growth	[20] DCF k(e)	[21] Flotation Adjusted DCF k(e)
1	ALLETE, Inc	ALE	$2 35	$75 79	3 10%	3 17%	3 26%	NA	6 00%	3 50%	4 75%	7 92%	8 01%
2	Alliant Energy Corporation	LNT	$1 42	$43 38	3 27%	3 38%	3 47%	6 00%	7 25%	6 50%	6 58%	9 96%	10 06%
3	Ameren Corporation	AEE	$1 90	$67 71	2 81%	2 91%	2 99%	6 60%	7 70%	7 50%	7 33%	10 24%	10 32%
4	American Electric Power Company, Inc	AEP	$2 68	$77 09	3 48%	3 57%	3 67%	5 80%	5 74%	4 50%	5 35%	8 92%	9 01%
5	Avangrid, Inc	AGR	$1 76	$49 45	3 56%	3 74%	3 84%	8 70%	9 20%	12 00%	9 97%	13 70%	13 81%
6	Black Hills Corporation	BKH	$2 02	$66 05	3 06%	3 14%	3 23%	4 70%	4 46%	6 50%	5 22%	8 36%	8 45%
7	CMS Energy Corporation	CMS	$1 53	$51 15	2 99%	3 09%	3 18%	6 40%	7 09%	7 00%	6 83%	9 92%	10 01%
8	Consolidated Edison Inc	ED	$2 96	$76 88	3 85%	3 91%	4 02%	3 00%	2 90%	3 00%	2 97%	6 87%	6 98%
9	DTE Energy Company	DTE	$3 78	$114 83	3 29%	3 40%	3 49%	6 00%	5 49%	7 50%	6 33%	9 73%	9 82%
10	Duke Energy Corporation	DUK	$3 71	$86 78	4 27%	4 38%	4 50%	5 00%	4 41%	5 50%	4 97%	9 35%	9 47%
11	El Paso Electric Company	EE	$1 44	$51 25	2 81%	2 87%	2 95%	4 40%	5 10%	3 00%	4 17%	7 04%	7 11%
12	Evergy, Inc	EVRG	$1 90	$57 06	3 33%	3 47%	3 57%	7 80%	9 20%	NMF	8 50%	11 97%	12 07%
13	Eversource Energy	ES	$2 14	$67 79	3 16%	3 25%	3 34%	5 90%	5 83%	5 50%	5 74%	8 99%	9 08%
14	Hawaiian Electric Industries, Inc	HE	$1 28	$36 69	3 49%	3 59%	3 69%	6 40%	7 80%	3 50%	5 90%	9 49%	9 59%
15	NextEra Energy, Inc	NEE	$5 00	$177 20	2 82%	2 94%	3 02%	7 70%	7 45%	9 00%	8 05%	10 99%	11 07%
16	NorthWestern Corporation	NWE	$2 30	$62 50	3 68%	3 73%	3 83%	2 60%	2 59%	2 50%	2 58%	6 29%	6 39%
17	OGE Energy Corp	OGE	$1 46	$40 48	3 61%	3 71%	3 81%	5 20%	NA	6 00%	5 60%	9 31%	9 41%
18	Otter Tail Corporation	OTTR	$1 40	$48 31	2 90%	3 03%	3 11%	NA	9 00%	9 00%	9 00%	12 03%	12 11%
19	Pinnacle West Capital Corporation	PNW	$2 95	$86 95	3 39%	3 48%	3 57%	4 60%	4 16%	6 00%	4 92%	8 40%	8 49%
20	PNM Resources, Inc	PNM	$1 16	$41 99	2 76%	2 84%	2 92%	4 70%	4 10%	7 50%	5 43%	8 27%	8 35%
21	Portland General Electric Company	POR	$1 45	$46 90	3 09%	3 16%	3 24%	3 30%	5 05%	4 00%	4 12%	7 27%	7 36%
22	Southern Company	SO	$2 40	$47 59	5 04%	5 12%	5 27%	4 50%	1 68%	3 50%	3 23%	8 35%	8 49%
23	Wisconsin Energy Corporation	WEC	$2 36	$71 63	3 29%	3 38%	3 48%	4 40%	4 70%	7 00%	5 37%	8 75%	8 84%
24	Xcel Energy Inc	XEL	$1 52	$51 14	2 97%	3 06%	3 15%	5 90%	6 64%	5 50%	6 01%	9 07%	9 16%
	PROXY GROUP MEAN											9 22%	9 31%

DCF Result Adjusted For Flotation Costs	9 31%
DCF Result Unadjusted For Flotation Costs	9 22%
Difference (Flotation Cost Adjustment)	0 09% [22]

Notes

The proxy group DCF result is adjusted for flotation costs by dividing each company's expected dividend yield by (1 - flotation cost) The flotation cost adjustment is derived as the difference between the unadjusted DCF result and the DCF result adjusted for flotation costs

[1] Source SEC Form 424B
[2] Source SEC Form 424B
[3] Source SEC Form 424B
[4] Source SEC Form 424B
[5] Equals [8] / [1]
[6] Equals [4] + ([1] x [3])
[7] Equals [1] x [2]
[8] Equals [7] - [6]
[9] Equals [6] / [7]
[10] Equals average [6] / average [7]
[11] Source Bloomberg Professional
[12] Source Bloomberg Professional
[13] Equals [11] / [12]
[14] Equals [3] x (1 + 0 5 x [19])
[15] Equals [4] / (1 - 0 0269)
[16] Source Zacks
[17] Source Yahoo! Finance
[18] Source Value Line
[19] Equals Average([16], [17], [18])
[20] Equals [14] + [19]
[21] Equals [15] + [19]
[22] Equals average [21] - average [20]

Summary of Adjustment Clauses & Alternative Regulation/Incentive Plans

			Adjustment Clauses						
Company	Parent	State	Fuel/ Purchased Power	Decoupling (F/P) [1]	New Capital Investment [2]	Energy Efficiency [3]	Renewables & RPS [4]	Environmental [5]	Other [6]
Ameren Illinois Company	AEE	*Illinois*	✓		✓	✓	✓	✓	✓
Union Electric Company	AEE	Missouri	✓	P		✓		✓	✓
Southwestern Electric Power Company	AEP	Arkansas	✓	P	✓	✓		✓	✓
Indiana Michigan Power Company	AEP	Indiana	✓	P	✓	✓	✓	✓	✓
Kentucky Power Company	AEP	Kentucky	✓	P	✓	✓		✓	✓
Southwestern Electric Power Company	AEP	Louisiana	✓	P	✓	✓		✓	✓
Indiana Michigan Power Company	AEP	Michigan	✓	P		✓	✓	✓	✓
Ohio Power Company	AEP	Ohio	✓	P	✓	✓	✓		✓
Public Service Company of Oklahoma	AEP	Oklahoma	✓	P		✓			✓
Kingsport Power Company	AEP	Tennessee	✓		✓				✓
AEP Texas Central Company	AEP	Texas	NA		✓	✓		✓	✓
AEP Texas North Company	AEP	Texas	NA		✓	✓			✓
Southwestern Electric Power Company	AEP	Texas	✓		✓	✓	✓		✓
Appalachian Power Company	AEP	Virginia	✓		✓	✓	✓	✓	✓
Appalachian Power / Wheeling Power	AEP	West Virginia	✓		✓	✓			✓
United Illuminating Company	AGR	Connecticut	✓	F		✓	✓	✓	✓
Central Maine Power Company	AGR	Maine	✓	F					✓
New York State Electric & Gas Corporation	AGR	New York	✓	F		✓	✓		✓
Rochester Gas and Electric Corporation	AGR	New York	✓	F		✓	✓		✓
ALLETE (Minnesota Power)	ALE	Minnesota	✓			✓	✓	✓	✓
Superior Water, Light and Power Company	ALE	Wisconsin	✓						✓
Black Hills Colorado Electric Utility Company, LP	BKH	Colorado	✓		✓	✓	✓		✓
Black Hills Power, Inc	BKH	South Dakota	✓	P	✓	✓		✓	✓
Black Hills Power, Inc	BKH	Wyoming	✓						✓
Cheyenne Light, Fuel and Power Company	BKH	Wyoming	✓	P		✓			✓
Consumers Energy Company	CMS	Michigan	✓			✓	✓		✓
DTE Electric Company	DTE	Michigan	✓			✓	✓	✓	✓
Duke Energy Florida	DUK	Florida	✓		✓	✓		✓	✓
Duke Energy Indiana	DUK	Indiana	✓	P	✓	✓	✓	✓	✓
Duke Energy Kentucky	DUK	Kentucky	✓	P		✓		✓	✓
Duke Energy Carolinas	DUK	North Carolina	✓	P		✓	✓	✓	✓
Duke Energy Progress	DUK	North Carolina	✓	P	✓	✓	✓	✓	✓
Duke Energy Ohio	DUK	Ohio	✓	P	✓	✓	✓		✓
Duke Energy Carolinas	DUK	South Carolina	✓	P		✓	✓	✓	✓
Duke Energy Progress	DUK	South Carolina	✓	P		✓	✓	✓	✓
Rockland Electric Company	ED	New Jersey	✓		✓	✓	✓		✓
Consolidated Edison Company of New York, Inc	ED	New York	✓	F	✓	✓	✓	✓	✓
Orange and Rockland Utilities, Inc	ED	New York	✓	F	✓	✓	✓		✓
El Paso Electric Company	EE	New Mexico	✓			✓			✓
El Paso Electric Company	EE	Texas	✓			✓			✓
Kansas City Power & Light Company	EVRG	Kansas	✓			✓		✓	✓
Kansas City Power & Light Company	EVRG	Missouri	✓	P		✓		✓	✓
Kansas Gas and Electric Company	EVRG	Kansas	✓	P		✓		✓	✓
KCP&L Greater Missouri Operations Company	EVRG	Missouri	✓			✓	✓	✓	✓
Westar Energy (KPL)	EVRG	Kansas	✓	P		✓		✓	✓
Connecticut Lt. & Pwr	ES	Connecticut	✓	F	✓	✓		✓	✓
NSTAR Electric	ES	Massachusetts	✓	F	✓	✓	✓		✓
Western Mass. Electric	ES	Massachusetts	✓	F	✓	✓	✓		✓
Public Service Company of New Hampshire	ES	New Hampshire	✓	P	✓	✓			✓
Hawaii Electric Light Company, Inc	HE	Hawaii	✓	F	✓	✓	✓		✓
Hawaiian Electric Company, Inc	HE	Hawaii	✓	F	✓	✓	✓		✓
Maui Electric Company	HE	Hawaii	✓	F	✓	✓	✓		✓
Interstate Power and Light Company	LNT	Iowa	✓			✓	✓	✓	✓
Wisconsin Power and Light Company	LNT	Wisconsin	✓						✓
Gulf Power Company	SO	Florida	✓			✓		✓	✓
Florida Power & Light Company	NEE	Florida	✓			✓		✓	✓
NorthWestern Energy	NWE	Montana	✓			✓			✓
NorthWestern Energy	NWE	South Dakota	✓					✓	✓
Oklahoma Gas and Electric Company	OGE	Arkansas	✓	P	✓	✓		✓	✓
Oklahoma Gas and Electric Company	OGE	Oklahoma	✓	P		✓			✓
Otter Tail Power Company	OTTR	Minnesota	✓		✓	✓	✓	✓	✓
Otter Tail Power Company	OTTR	North Dakota	✓		✓		✓	✓	✓
Otter Tail Power Company	OTTR	South Dakota	✓		✓	✓		✓	✓
Public Service Company of New Mexico	PNM	New Mexico	✓			✓	✓		✓
Texas-New Mexico Power Company	PNM	Texas	NA		✓	✓			✓
Arizona Public Service Company	PNW	Arizona	✓	P		✓	✓	✓	✓
Portland General Electric Company	POR	Oregon	✓	P		✓	✓	✓	✓
Alabama Power Company	SO	Alabama	✓		✓			✓	✓
Georgia Power Company	SO	Georgia	✓		✓	✓		✓	✓
Mississippi Power Company	SO	Mississippi	✓	P	✓	✓	✓	✓	✓
Wisconsin Electric Power	WEC	Michigan	✓			✓	✓		✓
Wisconsin Electric Power	WEC	Wisconsin	✓						✓
Wisconsin Public Service Company	WEC	Wisconsin	✓						✓
Public Service Company of Colorado	XEL	Colorado	✓		✓	✓	✓	✓	✓
Northern States Power Company - WI	XEL	Michigan	✓			✓			✓
Northern States Power Company - MN	XEL	Minnesota	✓	F	✓	✓	✓	✓	✓
Southwestern Public Service Company	XEL	New Mexico	✓		✓		✓		✓
Northern States Power Company - MN	XEL	North Dakota	✓			✓	✓		✓
Northern States Power Company - MN	XEL	South Dakota	✓	P	✓	✓		✓	✓
Southwestern Public Service Company	XEL	Texas	✓		✓	✓			✓
Northern States Power Company - WI	XEL	Wisconsin	✓						✓
CenterPoint Houston Electric, LLC	CNP	Texas	NA		✓	✓		✓	✓

			Alternative Regulation / Incentive Plans						
Company	Parent	State	Formula-Based Rates	Future Test Year Allowed in Jurisdiction [7]	Price Freeze/ Cap	Earnings Sharing	Formula-Based ROE	Service Quality/ Performance	Merger Savings
Ameren Illinois Company	AEE	Illinois	✓	✓		✓	✓	✓	
Union Electric Company	AEE	Missouri		K					
Southwestern Electric Power Company	AEP	Arkansas		✓					
Indiana Michigan Power Company	AEP	Indiana		✓					
Kentucky Power Company	AEP	Kentucky		✓					
Southwestern Electric Power Company	AEP	Louisiana	✓	K	✓	✓			
Indiana Michigan Power Company	AEP	Michigan		✓					
Ohio Power Company	AEP	Ohio		K	✓	✓			
Public Service Company of Oklahoma	AEP	Oklahoma		K					
Kingsport Power Company	AEP	Tennessee		✓					
AEP Texas Central Company	AEP	Texas		K					
AEP Texas North Company	AEP	Texas		K					
Southwestern Electric Power Company	AEP	Texas		K					
Appalachian Power Company	AEP	Virginia		K		✓	✓	✓	
Appalachian Power / Wheeling Power	AEP	West Virginia		K					
United Illuminating Company	AGR	Connecticut		K		✓			
Central Maine Power Company	AGR	Maine		K		✓			
New York State Electric & Gas Corporation	AGR	New York		✓	✓	✓			
Rochester Gas and Electric Corporation	AGR	New York		✓	✓	✓			
ALLETE (Minnesota Power)	ALE	Minnesota		✓					
Superior Water, Light and Power Company	ALE	Wisconsin		✓					
Black Hills Colorado Electric Utility Company, LP	BKH	Colorado		✓					
Black Hills Power, Inc.	BKH	South Dakota		K					
Black Hills Power, Inc	BKH	Wyoming		✓					
Cheyenne Light, Fuel and Power Company	BKH	Wyoming		✓					
Consumers Energy Company	CMS	Michigan		✓					
DTE Electric Company	DTE	Michigan		✓					
Duke Energy Florida	DUK	Florida		✓	✓				
Duke Energy Indiana	DUK	Indiana		✓	✓				
Duke Energy Kentucky	DUK	Kentucky		✓					
Duke Energy Carolinas	DUK	North Carolina		K	✓				
Duke Energy Progress	DUK	North Carolina		K					
Duke Energy Ohio	DUK	Ohio		K		✓			
Duke Energy Carolinas	DUK	South Carolina		K	✓				
Duke Energy Progress	DUK	South Carolina		K					
Rockland Electric Company	ED	New Jersey		K					
Consolidated Edison Company of New York, Inc	ED	New York		✓		✓			
Orange and Rockland Utilities, Inc	ED	New York		✓	✓	✓			
El Paso Electric Company	EE	New Mexico		✓					
El Paso Electric Company	EE	Texas		K					
Kansas City Power & Light Company	EVRG	Kansas		K					
Kansas City Power & Light Company	EVRG	Missouri		K					
Kansas Gas and Electric Company	EVRG	Kansas		K					
KCP&L Greater Missouri Operations Company	EVRG	Missouri		K					
Westar Energy (KPL)	EVRG	Kansas		K					
Connecticut Lt & Pwr	ES	Connecticut		K	✓	✓			
NSTAR Electric	ES	Massachusetts		K	✓			✓	
Western Mass Electric	ES	Massachusetts		K	✓			✓	
Public Service Company of New Hampshire	ES	New Hampshire		K	✓	✓			
Hawaii Electric Light Company, Inc	HE	Hawaii		✓	✓	✓			
Hawaiian Electric Company, Inc	HE	Hawaii		✓		✓			
Maui Electric Company	HE	Hawaii		✓		✓			
Interstate Power and Light Company	LNT	Iowa		K	✓				
Wisconsin Power and Light Company	LNT	Wisconsin		✓	✓	✓			
Gulf Power Company	SO	Florida		✓					
Florida Power & Light Company	NEE	Florida		✓	✓				
NorthWestern Energy	NWE	Montana		K					
NorthWestern Energy	NWE	South Dakota		K					
Oklahoma Gas and Electric Company	OGE	Arkansas	✓	✓					
Oklahoma Gas and Electric Company	OGE	Oklahoma		K					
Otter Tail Power Company	OTTR	Minnesota		✓					
Otter Tail Power Company	OTTR	North Dakota		✓					
Otter Tail Power Company	OTTR	South Dakota		K					
Public Service Company of New Mexico	PNM	New Mexico		✓		✓			
Texas-New Mexico Power Company	PNM	Texas		K					
Arizona Public Service Company	PNW	Arizona		K	✓				
Portland General Electric Company	POR	Oregon		✓					
Alabama Power Company	SO	Alabama	✓	K					
Georgia Power Company	SO	Georgia		✓	✓	✓			
Mississippi Power Company	SO	Mississippi	✓	✓			✓	✓	
Wisconsin Electric Power	WEC	Michigan		✓					
Wisconsin Electric Power	WEC	Wisconsin		✓	✓	✓			
Wisconsin Public Service Company	WEC	Wisconsin		✓					
Public Service Company of Colorado	XEL	Colorado		✓	✓	✓			
Northern States Power Company - WI	XEL	Michigan		✓					
Northern States Power Company - MN	XEL	Minnesota		✓					
Southwestern Public Service Company	XEL	New Mexico		✓		✓			
Northern States Power Company - MN	XEL	North Dakota		✓	✓				
Northern States Power Company - MN	XEL	South Dakota		K	✓				
Southwestern Public Service Company	XEL	Texas		K	✓				
Northern States Power Company - WI	XEL	Wisconsin		✓		✓			
CenterPoint Houston Electric, LLC	CNP	Texas		K					

Notes

Texas electric T&D-only, do not have retail provider of last resort obligations, therefore fuel/power recovery is not applicable A mechanism may cover one or more cost categories, therefore, designations may not indicate separate mechanisms for each category

[1] Full or partial decoupling (such as Straight-Fixed Variable rate design, weather normalization clauses, and recovery of lost revenues as a result of Energy Efficiency programs)

[2] Includes recovery of costs related to targeted new generation projects, infrastructure replacement, system integrity/hardening, Smart Grid, AMI metering, and other capital expenditures

[3] Utility-sponsored conservation, energy efficiency, load control, or other demand side management programs

[4] Recovers costs associated with renewable energy projects, Distributed Energy Resources, REC purchases net metering, RPS expense, and renewable PPAs

[5] EPA upgrade costs, emissions control & allowance purchase costs, nuclear/coal plant decommissioning, and other costs to comply with state and federal environmental mandates

[6] Pension expenses, bad debt costs, storm costs, vegetation management, RTO/Transmission Expense, capacity costs, transmission costs, government & franchise fees and taxes, economic development, and low income programs

[7] Source Regulatory Resarch Associates Commission Profiles Jurisdictions where future test years are allowed or historically granted to utilities in the jurisdiction K = Historical test year with known and *measurable changes included*

Sources *Alternative Regulation/Incentive Plans A State-by-State Overview* , November 19, 2013, Regulatory Research Associates, *Adjustment Clauses A State-by-State Overview, September 28, 2018,* Regulatory Research Associates *Commission Profile* , SEC Form 10-Ks, Company Tariffs

Proxy Group Capital Structure

		% Common Equity								
Company	Ticker	2018Q3	2018Q2	2018Q1	2017Q4	2017Q3	2017Q2	2017Q1	2016Q4	Average
ALLETE, Inc.	ALE	58 50%	58 84%	63 09%	62 51%	61 03%	60 62%	60 28%	59.02%	60 49%
Alliant Energy Corporation	LNT	51.13%	51.00%	49 74%	49 77%	52 09%	51.23%	50 84%	50.73%	50 82%
Ameren Corporation	AEE	53.22%	52.01%	53 04%	52 65%	53 56%	53 11%	52 77%	52.62%	52 87%
American Electnc Power Company, Inc.	AEP	49.29%	49 18%	48 83%	49.38%	49.16%	49 40%	49 71%	49.90%	49 36%
Avangrid, Inc.	AGR	56 13%	54 93%	56 55%	55.69%	53 88%	53 54%	55 66%	54.95%	55 17%
Black Hills Corporation	BKH	53 20%	53 82%	53 79%	54 40%	54.75%	53 84%	53 20%	52 81%	53.73%
CMS Energy Corporation	CMS	53 01%	52 86%	53 13%	52 25%	53.25%	52 97%	52 10%	51 24%	52 60%
Consolidated Edison, Inc	ED	48 38%	48 73%	49.75%	49.23%	49.87%	49 19%	49.83%	49.39%	49 30%
DTE Energy Company	DTE	49 97%	49.23%	51 12%	51 02%	50 50%	50.63%	50.50%	50 50%	50 43%
Duke Energy Corporation	DUK	55 03%	54.94%	54 46%	54 30%	53 78%	54 62%	54 37%	54 66%	54 52%
El Paso Electnc Company	EE	48 57%	47 32%	49.46%	49 95%	49.81%	48 01%	47 48%	47 73%	48 54%
Evergy, Inc	EVRG	59 86%	58 51%	58.73%	58 62%	59 41%	58.74%	58 75%	59 28%	58 99%
Eversource Energy	ES	51 03%	50.14%	54.05%	54 60%	55 16%	54.82%	55 44%	55 51%	53 85%
Hawaiian Electnc Industnes, Inc	HE	56 09%	55 78%	57 44%	57 42%	58 11%	57 76%	57 71%	57 70%	57 25%
NextEra Energy, Inc	NEE	64 78%	60 84%	61.23%	59 93%	63 00%	62 78%	62 05%	62 65%	62 16%
NorthWestern Corporation	NWE	48 36%	48.41%	47.48%	49 89%	48 86%	48 61%	48 61%	48 13%	48 54%
OGE Energy Corp.	OGE	53 05%	54 25%	53 59%	53 36%	53.05%	52 75%	53.46%	56.09%	53 70%
Otter Tail Corporation	OTTR	53 49%	53 11%	52 67%	57 34%	57 24%	55 31%	55 31%	55 06%	54 94%
Pinnacle West Capital Corporation	PNW	53 68%	53 71%	53 18%	53 14%	53 05%	53 32%	53.20%	54.59%	53.48%
PNM Resources, Inc	PNM	48.01%	46 68%	46 20%	46 06%	47 58%	46 89%	46 38%	46.01%	46 73%
Portland General Electnc Company	POR	50.51%	50 29%	50 14%	49 80%	50 17%	50.32%	50 28%	49 82%	50.17%
Southern Company	SO	51 50%	50 31%	49 98%	47 67%	50 14%	49 99%	51 41%	51.10%	50 26%
Wisconsin Energy Corporation	WEC	58.30%	57 72%	61 62%	54.62%	55.82%	55 48%	54 80%	56.26%	56 83%
Xcel Energy Inc	XEL	53 37%	53.63%	54 15%	53 95%	53 93%	54 37%	54 94%	54 37%	54 09%
Mean		53.27%	52 76%	53 48%	53 23%	53 63%	53 26%	53 29%	53 34%	53 28%

Operating Company Capital Structure

		% Common Equity								
Operating Company	Parent	2018Q3	2018Q2	2018Q1	2017Q4	2017Q3	2017Q2	2017Q1	2016Q4	Average
ALLETE (Minnesota Power)	ALE	60 43%	60.33%	60.38%	60 04%	59 73%	59 16%	58 71%	56 92%	59.46%
Superior Water, Light and Power Company	ALE	56 58%	57.34%	65.80%	64 99%	62.33%	62 08%	61.85%	61 12%	61.51%
Interstate Power and Light Company	LNT	49 64%	50.47%	49.92%	50.31%	51.79%	50 89%	50.23%	50 24%	50 44%
Wisconsin Power and Light Company	LNT	52 62%	51.52%	49.57%	49.23%	52 39%	51 56%	51 45%	51 22%	51 19%
Ameren Illinois Company	AEE	53 18%	52 74%	54 24%	53 38%	54 98%	54.55%	54 09%	53 44%	53 82%
Union Electric Company	AEE	53 26%	51.28%	51.84%	51.92%	52 14%	51 68%	51 45%	51.80%	51 92%
AEP Texas Central Company	AEP	NA	NA	NA	NA	NA	NA	NA	46 01%	46 01%
AEP Texas North Company	AEP	NA	NA	NA	NA	NA	NA	NA	43.29%	43.29%
Appalachian Power Company	AEP	49 30%	48 93%	49 35%	48 72%	48 30%	47.85%	48.17%	46 89%	48 44%
Indiana Michigan Power Company	AEP	44 53%	44 15%	46 64%	46 33%	46.65%	46 27%	49 54%	49 11%	46 65%
Kentucky Power Company	AEP	45.28%	44 89%	44.40%	43.52%	43 22%	43.30%	43.57%	43 45%	43 95%
Kingsport Power Company	AEP	50.71%	47 69%	47 28%	46.53%	45.88%	50.58%	48 98%	65 24%	50 36%
Ohio Power Company	AEP	56.85%	57.11%	52 91%	58 63%	57 64%	56.72%	56 75%	56 51%	56 64%
Public Service Company of Oklahoma	AEP	49 55%	48 59%	48 10%	48 50%	48 85%	48 26%	48.20%	48 47%	48 56%
Southwestern Electric Power Company	AEP	43.43%	47 91%	47 72%	48 52%	48 66%	48 14%	48 33%	45.95%	47 33%
Wheeling Power Company	AEP	54 70%	54.19%	54 27%	54 26%	54.13%	54 10%	54 10%	54.12%	54 23%
Central Maine Power Company	AGR	64 17%	63 53%	64 18%	63.82%	63 97%	63 27%	62.84%	62.39%	63 52%
New York State Electric & Gas Corporation	AGR	53 95%	50.99%	54 51%	53 30%	48 27%	50 24%	49.68%	48 84%	51.22%
Rochester Gas and Electric Corporation	AGR	48 16%	47.77%	50 80%	49.63%	48.94%	48 46%	55 25%	54 30%	50.42%
United Illuminating Company	AGR	58 23%	57.43%	56.70%	56 00%	54 35%	52 17%	54 88%	54 26%	55 50%
Black Hills Colorado Electric Utility Company, LP	BKH	53.04%	54.85%	54.68%	55 69%	54 96%	55 01%	53 08%	52.20%	54.19%
Black Hills Power, Inc	BKH	53 51%	53 30%	53 22%	53 49%	56 14%	53 26%	53.24%	52 88%	53.63%
Cheyenne Light, Fuel and Power Company	BKH	53 04%	53.32%	53 46%	54.01%	53 16%	53 27%	53 29%	53 35%	53 36%
Consumers Energy Company	CMS	53 01%	52.86%	53.13%	52 25%	53 25%	52.97%	52 10%	51 24%	52 60%
Consolidated Edison Company of New York, Inc	ED	48.33%	46.72%	48.66%	48 22%	49 47%	48 58%	49 65%	49 31%	48.62%
Orange and Rockland Utilities, Inc	ED	48 44%	50.74%	50 83%	50 25%	50 27%	49 81%	50.00%	49 46%	49 98%
Rockland Electric Company	ED	NA	NA	NA	NA	NA	NA	NA	NA	NA
DTE Electric Company	DTE	49.97%	49 23%	51.12%	51 02%	50 50%	50 63%	50 50%	50 50%	50 43%
Duke Energy Carolinas, LLC	DUK	52 64%	52 10%	51.70%	52 98%	53 98%	53.49%	53 32%	52 81%	52 88%
Duke Energy Florida, LLC	DUK	49 65%	48 79%	49 92%	49.25%	49 46%	47 74%	46 95%	50 83%	49.07%
Duke Energy Indiana, LLC	DUK	52 79%	52.64%	52 54%	51 94%	51 71%	51 89%	52 15%	51 59%	52 16%
Duke Energy Kentucky, Inc	DUK	56 58%	55.79%	53.72%	53.11%	50 69%	55.74%	55.43%	54.74%	54 48%
Duke Energy Ohio, Inc	DUK	67 73%	67 10%	66 06%	66.24%	65 79%	65.38%	65 36%	66 39%	66 25%
Duke Energy Progress, LLC	DUK	50.76%	53 22%	52 82%	52 27%	51 06%	53.51%	52 99%	51 58%	52 28%
El Paso Electric Company	EE	48.57%	47.32%	49 46%	49.95%	49 81%	48 01%	47 48%	47 73%	48 54%
Kansas City Power & Light Company	EVRG	49.50%	48 88%	49 25%	49 15%	49 42%	48 47%	49 19%	49 61%	49 19%
Kansas Gas and Electric Company	EVRG	74 91%	74 45%	74 29%	74 18%	74 21%	73 69%	73 49%	73 37%	74 07%
KCP&L Greater Missoun Operations Company	EVRG	55.70%	52 03%	52 63%	52 40%	55 14%	54 57%	54 22%	54 47%	53 89%
Westar Energy (KPL)	EVRG	59.34%	58 68%	58 75%	58 74%	58 87%	58.22%	58 10%	59.68%	58 80%
Connecticut Light and Power Company	ES	54 49%	53 85%	50.40%	53 82%	53 49%	54 79%	54 51%	55.52%	53.86%
NSTAR Electric Company	ES	55.50%	54 51%	53 83%	53 85%	52 87%	52.73%	56.27%	56 10%	54 46%
Public Service Company of New Hampshire	ES	43 11%	42 06%	57 93%	57.30%	59.26%	57 05%	56 60%	56 31%	53 70%
Western Massachusetts Electric Company	ES	NA	NA	NA	53 43%	55.02%	54.71%	54 40%	54.11%	54.34%
Hawaii Electric Light Company, Inc	HE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hawaiian Electric Company, Inc.	HE	56 09%	55 78%	57 44%	57 42%	58 11%	57 76%	57 71%	57.70%	57 25%
Maui Electric Company, Limited	HE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Florida Power & Light Company	NEE	64 78%	60.84%	61 23%	59 93%	63 00%	62 78%	62 05%	62.65%	62 16%
NorthWestern Corporation	NWE	48 36%	48 41%	47 48%	49.89%	48 86%	48 61%	48 61%	48 13%	48 54%
Oklahoma Gas and Electric Company	OGE	53 05%	54 25%	53.59%	53 36%	53 05%	52.75%	53.46%	56 09%	53 70%
Otter Tail Power Company	OTTR	53 49%	53 11%	52 67%	57 34%	57.24%	55 31%	55 31%	55 06%	54 94%
Arizona Public Service Company	PNW	53.68%	53.71%	53 18%	53.14%	53.05%	53 32%	53 20%	54.59%	53 48%
Public Service Company of New Mexico	PNM	48 01%	46 68%	46 20%	46.06%	47 58%	46.89%	46 38%	46.01%	46.73%
Portland General Electric Company	POR	50 51%	50.29%	50 14%	49 80%	50 17%	50 32%	50 28%	49.82%	50 17%
Alabama Power Company	SO	48.13%	47.51%	48 86%	47 07%	47.93%	47.25%	47.00%	46 97%	47.59%
Georgia Power Company	SO	57 27%	54.97%	53 81%	50 06%	50 35%	51.55%	50 36%	51 63%	52 50%
Gulf Power Company	SO	55 34%	54 90%	54 27%	54.19%	54.97%	54 41%	58 80%	56.16%	55 38%
Mississippi Power Company	SO	45 28%	43 87%	43 00%	39 34%	47.32%	46 76%	49 50%	49 62%	45 58%
Upper Michigan Energy Resources Corporation	WEC	55 08%	54.53%	70 04%	49 85%	NA	NA	NA	NA	57.37%
Wisconsin Electric Power Company	WEC	59 25%	59 09%	56 47%	55 94%	55.97%	55 76%	55 58%	56.74%	56 85%
Wisconsin Public Service Corporation	WEC	60 59%	59.53%	58 35%	58 06%	55 68%	55 21%	54 02%	55 78%	57 15%
Northern States Power Company - MN	XEL	52 64%	52.61%	52 59%	52.38%	52 22%	52 78%	52 62%	52 31%	52 52%
Northern States Power Company - WI	XEL	48 45%	53 85%	53 79%	53 36%	55 57%	55 22%	55 66%	54 93%	53 85%
Public Service Company of Colorado	XEL	56.08%	54 17%	56.67%	56 50%	55 64%	54 88%	57 00%	56.32%	55 91%
Southwestern Public Service Company	XEL	56 29%	53 88%	53 54%	53.55%	52 29%	54 61%	54 48%	53 93%	54 07%
Mean		53 41%	52 95%	53 63%	53 19%	53 44%	53 26%	53 49%	53 36%	53 13%

Source S&P Global Market Intelligence

Proxy Group Capital Structure

		% Long-Term Debt								
Company	Ticker	2018Q3	2018Q2	2018Q1	2017Q4	2017Q3	2017Q2	2017Q1	2016Q4	Average
ALLETE, Inc	ALE	41.50%	41 16%	36 91%	37.49%	38 97%	39 38%	39 72%	40 98%	39 51%
Alliant Energy Corporation	LNT	48 87%	49 00%	50 26%	50 23%	47.91%	48 77%	49.16%	49.27%	49.18%
Ameren Corporation	AEE	46 78%	47.99%	46.96%	47 35%	46.44%	46.89%	47 23%	47.38%	47.13%
American Electnc Power Company, Inc	AEP	50 71%	50.82%	51 17%	50 62%	50 84%	50 60%	50 29%	50 10%	50 64%
Avangrid, Inc.	AGR	43 87%	45 07%	43 45%	44.31%	46 12%	46.46%	44 34%	45 05%	44 83%
Black Hills Corporation	BKH	46.80%	46 18%	46 21%	45 60%	45 25%	46 16%	46.80%	47 19%	46.27%
CMS Energy Corporation	CMS	46 99%	47 14%	46 87%	47.75%	46 75%	47 03%	47.90%	48 76%	47.40%
Consolidated Edison, Inc	ED	51 62%	51 27%	50 25%	50.77%	50 13%	50.81%	50.17%	50.61%	50 70%
DTE Energy Company	DTE	50 03%	50.77%	48 88%	48.98%	49 50%	49 37%	49 50%	49 50%	49 57%
Duke Energy Corporation	DUK	44 97%	45 06%	45 54%	45 70%	46 22%	45 38%	45.63%	45.34%	45.48%
El Paso Electnc Company	EE	51 43%	52.68%	50.54%	50.05%	50.19%	51 99%	52 52%	52 27%	51 46%
Evergy, Inc	EVRG	40 14%	41 49%	41 27%	41.38%	40.59%	41.26%	41 25%	40 72%	41 01%
Eversource Energy	ES	48 97%	49 86%	45 95%	45.40%	44.84%	45.18%	44 56%	44.49%	46 15%
Hawaiian Electnc Industnes, Inc	HE	43 91%	44.22%	42 56%	42.58%	41 89%	42 24%	42 29%	42 30%	42.75%
NextEra Energy, Inc	NEE	35 22%	39 16%	38 77%	40.07%	37 00%	37 22%	37 95%	37 35%	37.84%
NorthWestern Corporation	NWE	51 64%	51 59%	52 52%	50.11%	51 14%	51 39%	51 39%	51.87%	51 46%
OGE Energy Corp	OGE	46 95%	45 75%	46 41%	46.64%	46 95%	47.25%	46 54%	43 91%	46.30%
Otter Tail Corporation	OTTR	46 51%	46.89%	47.33%	42 66%	42 76%	44 69%	44 69%	44 94%	45.06%
Pinnacle West Capital Corporation	PNW	46 32%	46 29%	46.82%	46 86%	46.95%	46 68%	46 80%	45 41%	46 52%
PNM Resources, Inc	PNM	51 99%	53 32%	53 80%	53 94%	52 42%	53 11%	53 62%	53.99%	53 27%
Portland General Electnc Company	POR	49 49%	49 71%	49.86%	50.20%	49 83%	49 68%	49 72%	50 18%	49 83%
Southern Company	SO	48 50%	49 69%	50.02%	52 33%	49 86%	50 01%	48 59%	48 90%	49.74%
Wisconsin Energy Corporation	WEC	41 70%	42 28%	38 38%	45 38%	44 18%	44 52%	45 20%	43 74%	43.17%
Xcel Energy Inc	XEL	46 63%	46.37%	45.85%	46 05%	46 07%	45 63%	45 06%	45 63%	45 91%
Mean		46 73%	47 24%	46.52%	46.77%	46.37%	46 74%	46 71%	46 66%	46 72%

Operating Company Capital Structure

		% Long-Term Debt								
Operating Company	Parent	2018Q3	2018Q2	2018Q1	2017Q4	2017Q3	2017Q2	2017Q1	2016Q4	Average
ALLETE (Minnesota Power)	ALE	39 57%	39.67%	39 62%	39 96%	40 27%	40 84%	41 29%	43 08%	40 54%
Superior Water, Light and Power Company	ALE	43.42%	42.66%	34 20%	35 01%	37 67%	37 92%	38 15%	38 88%	38 49%
Interstate Power and Light Company	LNT	50.36%	49.53%	50 08%	49 69%	48 21%	49.11%	49.77%	49.76%	49 56%
Wisconsin Power and Light Company	LNT	47.38%	48 48%	50 43%	50 77%	47 61%	48 44%	48 55%	48 78%	48 81%
Ameren Illinois Company	AEE	46 82%	47 26%	45 76%	46 62%	45 02%	45 45%	45 91%	46 56%	46.18%
Union Electric Company	AEE	46.74%	48.72%	48 16%	48 08%	47.86%	48 32%	48 55%	48 20%	48 08%
AEP Texas Central Company	AEP	NA	NA	NA	NA	NA	NA	NA	53 99%	53 99%
AEP Texas North Company	AEP	NA	NA	NA	NA	NA	NA	NA	56 71%	56 71%
Appalachian Power Company	AEP	50.70%	51 07%	50 65%	51.28%	51 70%	52.15%	51.83%	53 11%	51 56%
Indiana Michigan Power Company	AEP	55.47%	55 85%	53 36%	53.67%	53 35%	53 73%	50.46%	50 89%	53.35%
Kentucky Power Company	AEP	54 72%	55 11%	55 60%	56 48%	56 78%	56 70%	56.43%	56 55%	56.05%
Kingsport Power Company	AEP	49.29%	52 31%	52 72%	53.47%	54 12%	49 42%	51 02%	34 76%	49.64%
Ohio Power Company	AEP	43.15%	42.89%	47 09%	41 37%	42 36%	43.28%	43.25%	43 49%	43.36%
Public Service Company of Oklahoma	AEP	50.45%	51.41%	51 90%	51 50%	51.15%	51 74%	51.80%	51 53%	51 44%
Southwestern Electric Power Company	AEP	56 57%	52.09%	52 28%	51 48%	51.34%	51 86%	51 67%	54 05%	52.67%
Wheeling Power Company	AEP	45.30%	45 81%	45 73%	45.74%	45 87%	45 90%	45 90%	45 88%	45.77%
Central Maine Power Company	AGR	35 83%	36 47%	35.82%	36 18%	36 03%	36 73%	37.16%	37 61%	36.48%
New York State Electric & Gas Corporation	AGR	46.05%	49.01%	45 49%	46.70%	51.73%	49 76%	50.32%	51 16%	48.78%
Rochester Gas and Electric Corporation	AGR	51.84%	52 23%	49 20%	50.37%	51 06%	51 54%	44.75%	45 70%	49.58%
United Illuminating Company	AGR	41 77%	42 57%	43 30%	44 00%	45 65%	47.83%	45 12%	45 74%	44.50%
Black Hills Colorado Electric Utility Company, LP	BKH	46 96%	45.15%	45 32%	44 31%	45.04%	44 99%	46 92%	47 80%	45.81%
Black Hills Power, Inc.	BKH	46.49%	46 70%	46 78%	46.51%	43 86%	46.74%	46 76%	47 12%	46.37%
Cheyenne Light, Fuel and Power Company	BKH	46 96%	46 68%	46 54%	45 99%	46.84%	46.73%	46.71%	46 65%	46 64%
Consumers Energy Company	CMS	46 99%	47.14%	46 87%	47 75%	46 75%	47 03%	47 90%	48 76%	47.40%
Consolidated Edison Company of New York, Inc.	ED	51 67%	53 28%	51 34%	51 78%	50 53%	51 42%	50 35%	50 69%	51.38%
Orange and Rockland Utilities Inc	ED	51 56%	49 26%	49.17%	49.75%	49 73%	50.19%	50 00%	50.54%	50 02%
Rockland Electric Company	ED	NA	NA	NA	NA	NA	NA	NA	NA	NA
DTE Electric Company	DTE	50 03%	50 77%	48 88%	48.98%	49 50%	49.37%	49 50%	49.50%	49 57%
Duke Energy Carolinas, LLC	DUK	47 36%	47.90%	48.30%	47 02%	46 02%	46 51%	46 68%	47.19%	47 12%
Duke Energy Florida, LLC	DUK	50 35%	51.21%	50.08%	50 75%	50 54%	52 26%	53.05%	49 17%	50 93%
Duke Energy Indiana, LLC	DUK	47 21%	47 36%	47.46%	48 06%	48 29%	48.11%	47.85%	48.41%	47 84%
Duke Energy Kentucky, Inc	DUK	43 42%	44.21%	46.28%	46.89%	49 31%	44 26%	44.57%	45.26%	45 52%
Duke Energy Ohio, Inc.	DUK	32 27%	32 90%	33 94%	33 76%	34 21%	34 62%	34 64%	33.61%	33.75%
Duke Energy Progress, LLC	DUK	49.24%	46 78%	47 18%	47.73%	48 94%	46 49%	47 01%	48 42%	47 72%
El Paso Electric Company	EE	51 43%	52 68%	50 54%	50 05%	50 19%	51 99%	52 52%	52.27%	51 46%
Kansas City Power & Light Company	EVRG	50 50%	51.12%	50.75%	50 85%	50 58%	51 53%	50.81%	50.39%	50 81%
Kansas Gas and Electric Company	EVRG	25 09%	25 55%	25.71%	25.82%	25 79%	26 31%	26 51%	26 63%	25 93%
KCP&L Greater Missouri Operations Company	EVRG	44 30%	47.97%	47.37%	47 60%	44 86%	45.43%	45.78%	45 53%	46 11%
Westar Energy (KPL)	EVRG	40 66%	41 32%	41.25%	41 26%	41 13%	41 78%	41 90%	40 32%	41.20%
Connecticut Light and Power Company	ES	45 51%	46.15%	49 60%	46 18%	46 51%	45.21%	45 49%	44 48%	46 14%
NSTAR Electric Company	ES	44 50%	45 49%	46 17%	46 15%	47 13%	47 27%	43 73%	43 90%	45 54%
Public Service Company of New Hampshire	ES	56 89%	57 94%	42 07%	42.70%	40 74%	42.95%	43 40%	43.69%	46 30%
Western Massachusetts Electric Company	ES	NA	NA	NA	46.57%	44 98%	45 29%	45.60%	45 89%	45 66%
Hawaii Electric Light Company, Inc	HE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hawaiian Electric Company, Inc.	HE	43 91%	44.22%	42 56%	42 58%	41.89%	42.24%	42.29%	42.30%	42 75%
Maui Electric Company, Limited	HE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Florida Power & Light Company	NEE	35.22%	39.16%	38.77%	40.07%	37 00%	37 22%	37.95%	37 35%	37.84%
NorthWestern Corporation	NWE	51 64%	51 59%	52 52%	50 11%	51 14%	51.39%	51 39%	51 87%	51 46%
Oklahoma Gas and Electric Company	OGE	46 95%	45.75%	46 41%	46 64%	46.95%	47 25%	46.54%	43 91%	46 30%
Otter Tail Power Company	OTTR	46.51%	46.89%	47.33%	42 66%	42 76%	44.69%	44 69%	44 94%	45.06%
Arizona Public Service Company	PNW	46.32%	46.29%	46 82%	46 86%	46.95%	46 68%	46 80%	45 41%	46.52%
Public Service Company of New Mexico	PNM	51 99%	53 32%	53.80%	53.94%	52 42%	53 11%	53 62%	53 99%	53 27%
Portland General Electric Company	POR	49.49%	49.71%	49 86%	50 20%	49 83%	49 68%	49 72%	50 18%	49 83%
Alabama Power Company	SO	51.87%	52.49%	51 14%	52 93%	52 07%	52.75%	53.00%	53 03%	52.41%
Georgia Power Company	SO	42.73%	45.03%	46.19%	49 94%	49 65%	48 45%	49 64%	48.37%	47.50%
Gulf Power Company	SO	44 66%	45.10%	45 73%	45 81%	45 03%	45 59%	41 20%	43 84%	44 62%
Mississippi Power Company	SO	54.72%	56 13%	57 00%	60.66%	52 68%	53 24%	50.50%	50 38%	54.42%
Upper Michigan Energy Resources Corporation	WEC	44 92%	45 47%	29.96%	50.15%	NA	NA	NA	NA	42 63%
Wisconsin Electric Power Company	WEC	40 75%	40 91%	43.53%	44 06%	44.03%	44 24%	44.42%	43.26%	43.15%
Wisconsin Public Service Corporation	WEC	39.41%	40 47%	41.65%	41 94%	44 32%	44.79%	45.98%	44 22%	42 85%
Northern States Power Company - MN	XEL	47 36%	47 39%	47 41%	47 62%	47 78%	47 22%	47 38%	47 69%	47 48%
Northern States Power Company - WI	XEL	51 55%	46 15%	46.21%	46 64%	44 43%	44 78%	44 34%	45 07%	46 15%
Public Service Company of Colorado	XEL	43 92%	45 83%	43.33%	43 50%	44 36%	45 12%	43 00%	43 68%	44 09%
Southwestern Public Service Company	XEL	43 71%	46.12%	46 46%	46 45%	47.71%	45 39%	45.52%	46 07%	45 93%
Mean		46.59%	47.05%	46 37%	46.81%	46 56%	46 74%	46.51%	46 64%	46.87%

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TO TESTIMONY

OF

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OF
ROBERT B. HEVERT

Workpapers are voluminous and will be provided in electronic format.

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FOR

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APPLICATION OF CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC FOR AUTHORITY TO CHANGE RATES	**§ § §**	**PUBLIC UTILITY COMMISSION OF TEXAS**

DIRECT TESTIMONY

OF

ROBERT B. McRAE

ON BEHALF OF

CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC

April 2019

TABLE OF CONTENTS

LIST OF EXHIBITS

Exhibit RBM-1	Description of Robert B. McRae's Employment History
Exhibit RBM-2	Moody's Investors Service, *Regulated Electric and Gas Utilities* **(Confidential)**
Exhibit RBM-3	Standard & Poor's, *Key Credit Factors for the Regulated Utilities Industry* **(Confidential)**
Exhibit RBM-4	S&P Global Market Intelligence, RRA Regulatory Focus, *State Regulatory Evaluations* at 1 (Feb. 8, 2019) **(Confidential)**
Exhibit RBM-5	S&P Global Market Intelligence, RRA Regulatory Focus, *Major Rate Case Decisions – January-December 2018* (Jan. 31, 2019) **(Confidential)**

EXECUTIVE SUMMARY OF ROBERT B. MCRAE

The first half of my direct testimony supports the adoption of an overall rate of return of 7.39% for CenterPoint Energy Houston Electric, LLC ("CenterPoint Houston" or the "Company"). That rate of return is based on a capital structure composed of 50.0% debt and 50.0% equity, the 10.4% cost of equity recommended by Company witness Robert B. Hevert, and the 4.38% cost of debt that I support in this testimony. My testimony demonstrates that the proposed 50/50 capital structure:

- reasonably reflects the business and regulatory risk of CenterPoint Houston;
- supports a single-A credit rating, which better enables CenterPoint Houston to maintain continuous access to the capital markets so that it can finance its business needs in nearly all economic climates; and
- establishes a level of equity that is comparable to that recently adopted for transmission and distribution utilities.

In addition, my testimony establishes a cost of debt that is reasonable based on CenterPoint Houston's debt outstanding at December 31, 2018, and it supports an overall cost of capital that reflects the required return based on CenterPoint Houston's business and financial risk.

The second half of my direct testimony supports the recovery through rates of the $27.1 million in Treasury Department costs billed to CenterPoint Houston during the test year. I also support the reasonableness of other costs allocated to CenterPoint Houston. In support of the recovery of these costs, my testimony:

- discusses the vital corporate support services provided by the Treasury Department, such as insurance risk management, investor services, investor relations, commercial risk management, and treasury operations;
- describes the Treasury Department's cost control processes;
- explains how the Treasury Department's costs are appropriately assigned to CenterPoint Houston; and

- explains that the Treasury Department's cost assignment to CenterPoint Houston complies with the requirements for affiliate cost recovery.

Finally, my direct testimony explains that property insurance is not available on reasonable terms for CenterPoint Houston's transmission and distribution assets other than substations. That supports the reasonableness and necessity of the uninsured property loss reserve that is sponsored by Company witness Gregory S. Wilson.

DIRECT TESTIMONY OF ROBERT B. McRAE

I. INTRODUCTION AND QUALIFICATIONS

Q. PLEASE STATE YOUR NAME AND OCCUPATION.

A. My name is Robert B. McRae. I am employed by CenterPoint Energy Service Company, LLC ("Service Company") as Assistant Treasurer.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?

A. I am testifying on behalf of CenterPoint Energy Houston Electric, LLC ("CenterPoint Houston" or the "Company").

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND.

A. I have a Bachelor of Science Degree in Management from Brigham Young University and a Master of Business Administration from Indiana University.

Q. PLEASE SUMMARIZE YOUR EMPLOYMENT HISTORY.

A. I have been employed by the Service Company since 2011 and have held positions in the Strategic Planning, Investor Relations, and Treasury departments. Exhibit RBM-1 contains a more detailed recitation of my employment history.

Q. DO YOU HOLD ANY PROFESSIONAL LICENSES OR CERTIFICATES?

A. Yes, I hold the Certified Treasury Professional designation.

Q. HAVE YOU TESTIFIED IN OTHER PROCEEDINGS BEFORE THE PUBLIC UTILITY COMMISSION OF TEXAS ("COMMISSION")?

A. Yes. I submitted rebuttal testimony on CenterPoint Houston's behalf in Docket No. 48226.

II. SCOPE AND PURPOSE OF TESTIMONY

Q. PLEASE DISCUSS THE PURPOSE OF YOUR DIRECT TESTIMONY.

A. My direct testimony has several purposes. In addition to providing the background information necessary to illuminate the capital structure issues that I discuss, my direct testimony will also:

- Explain that a capital structure composed of 50.0% equity and 50.0% long-term debt is necessary for CenterPoint Houston to maintain its current credit metrics, which are under pressure because of the high level of capital expenditures that CenterPoint Houston will incur over the next several years and because of the impact that the Tax Cuts and Jobs Act of 2017 ("TCJA") will have on CenterPoint Houston's cash flows;
- Support CenterPoint Houston's proposed 4.38% cost of long-term debt;
- Support a 7.39% weighted average cost of capital ("WACC"), which is calculated using a capital structure composed of 50.0% equity and 50.0% long-term debt, the 10.40% return on equity ("ROE") recommended by Company witness Robert B. Hevert, and the 4.38% cost of long-term debt that I support in this testimony;
- Explain that property and casualty insurance is not available to ensure the vast majority of CenterPoint Houston's transmission and distribution assets; and
- Support the costs of the Treasury Department that are assigned to CenterPoint Houston by explaining that the services provided and the costs incurred by the Treasury Department are reasonable and necessary.

Q. WHAT SCHEDULES ARE YOU SPONSORING OR CO-SPONSORING?

A. I am sponsoring Schedules II-C-2.4, -2.4.1, -2.4a, -2.4a.1, -2.5, -2.5a, -2.6 and -2.10.

Q. IS YOUR TESTIMONY RELATED TO THE TESTIMONY OF OTHER WITNESSES IN THIS PROCEEDING?

A. Yes. The parts of my testimony that relate to the planning, budgeting and assignment of affiliate costs to CenterPoint Houston are related to the testimony of

Company witness Michelle M. Townsend, who testifies on the overall planning and budgeting process and the assignment of affiliate costs. My testimony regarding CenterPoint Houston's weighted average cost of capital is also related to the testimony of Mr. Hevert, who discusses CenterPoint Houston's required ROE. My testimony on the TCJA relates to the testimonies of Mr. Hevert and Company witness Charles W. Pringle. My testimony on interest rate risk management relates to the testimony of Company witness Kristie L. Colvin. Finally, my testimony on the availability of property insurance relates to the testimony of Company witness Gregory S. Wilson.

III. FINANCIAL INTEGRITY AND CREDIT RATINGS

Q. WHAT TOPICS DO YOU DISCUSS IN THIS SECTION OF YOUR DIRECT TESTIMONY?

A. I begin by describing what the term "financial integrity" means in the context of utility regulation and explaining why it is important for a utility to maintain its financial integrity. Next, I describe the criteria and methodologies the rating agencies use to evaluate utilities' financial strength and stability, which are reflected in the rating agencies' credit ratings and outlooks for those utilities. Finally, I discuss the rating agencies' views of CenterPoint Houston's financial strength.

A. Need to Establish and Maintain Financial Integrity

Q. WHAT DO YOU UNDERSTAND THE TERM "FINANCIAL INTEGRITY" TO MEAN IN THE CONTEXT OF UTILITY REGULATION?

A. In the context of utility regulation, the phrase "financial integrity" refers to a utility's ability to maintain its credit standing and to attract the capital needed to

support operations and investment requirements.

Q. SHOULD A REGULATORY COMMISSION BE CONCERNED ABOUT A UTILITY'S FINANCIAL INTEGRITY AND ITS ABILITY TO ATTRACT CAPITAL WHEN ESTABLISHING RATES?

A. Yes, for two independent reasons. First, although I am not an attorney, I understand that United States Supreme Court precedent requires a regulatory commission to set a utility's rates at a level that gives the utility an opportunity to earn a return that is adequate to protect its financial integrity and that is commensurate with returns available on business enterprises with comparable risk:

> [T]he investor interest has a legitimate concern with the financial integrity of the company whose rates are being regulated. From the investor or company point of view it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock. By that standard the return to the equity owner should be commensurate with returns on investments in other enterprises having comparable risks. That return, moreover, should be sufficient to ensure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital.[1]

Mr. Hevert discusses these principles in more detail in his testimony.

Second, the ability to attract capital at a reasonable cost in all market conditions is critical for a utility if it is to satisfy its obligation to provide safe and reliable utility service. Financial integrity ensures that the utility will have the flexibility to withstand unanticipated macroeconomic events outside of its control, such as the deep economic downturn that occurred in 2008-2009. In contrast, a lack of financial integrity can limit a utility's ability to finance assets or undertake new projects, particularly during times of capital market volatility. Weak financial

[1] *Federal Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591, 603 (1944).

integrity also increases the cost of debt and the cost of equity, which in turn increases the overall cost of capital paid by customers.

Q. WHAT FACTORS CONTRIBUTE TO A UTILITY'S FINANCIAL INTEGRITY?

A. The financial integrity of a regulated utility is largely a function of its capital structure, ROE, and cash flow, but other factors can also affect a utility's financial integrity. To maintain a strong financial profile, a utility needs to have the opportunity to recover all prudently-incurred utility costs in a timely manner, which include not only the costs of operation and maintenance, but also the costs of servicing debt and providing a fair return for equity investors.

B. Rating Agency Criteria and Methodologies

Q. HOW DO INVESTORS EVALUATE FINANCIAL INTEGRITY?

A. Investors use a variety of tools, but most rely at least in part on company-specific credit ratings published by the major credit rating agencies—Standard & Poor's ("S&P"), Moody's Investors Service ("Moody's"), and Fitch Ratings ("Fitch")—as a general indication of a company's financial strength. Credit ratings are assigned after the rating agencies conduct comprehensive quantitative and qualitative analyses of a company and the business environment in which it operates.

Q. PLEASE EXPLAIN THE RATING AGENCY SCALES.

A. The rating agencies issue ratings for both the business entity as a whole and for the various debt issuances of the entity. For example, Moody's assigns a long-term "issuer rating" that reflects the general credit risk of the business enterprise and Moody's opinion of the debt issuer's overall capacity to pay its scheduled financial

obligations.[2] The issuer rating is not a rating of individual securities, but is the core rating of the business enterprise from which ratings of individual securities are derived. In contrast, ratings on individual debt issuances reflect the likelihood that principal and interest on those specific debt issues will be paid in a timely manner and take into account the recovery prospects in the event of default. As shown below in Table 1, the ratings of the three rating agencies are similar, but not identical:

Table 1. Bond Ratings

Category	Moody's	S&P	Fitch
High Grade	Aaa	AAA	AAA
	Aa	AA	AA
Medium Grade	A	A	A
	Baa	BBB	BBB
Speculative	Ba	BB	BB
	B	B	B
Default	Caa	CCC	CCC

The ratings are further delineated through the use of pluses or minuses by S&P and Fitch to show a company's relative standing within the categories (e.g., A- or BBB+) and through the use of numbers by Moody's (e.g., A3 or Baa1). Ratings that fall within the high-grade and medium-grade categories are generally described

[2] S&P refers to its rating for the credit risk of the enterprise as a "corporate credit rating," whereas Fitch refers to its rating for the credit risk of the enterprise as an "issuer default rating." For the sake of brevity, I will use the term "issuer rating" in this testimony to refer to the credit risk of the business enterprise.

as being "investment grade" ratings, whereas ratings below BBB- (or Baa3 for Moody's) are sometimes described as "junk bond" ratings.

In addition, each rating agency assigns an "outlook" to signal the potential direction of a rating over the intermediate term, which is typically six months to two years. A "positive" outlook indicates that the rating may be raised; a "negative" outlook indicates that the rating may be lowered; and a "stable" outlook indicates that the rating is not likely to change.

Q. HOW DO THE RATING AGENCIES EVALUATE THE CREDITWORTHINESS OF ISSUERS?

A. Each rating agency has developed criteria and methodologies that provide some transparency into the rationales for the rating agency's ratings. Exhibit RBM-2 is the most recent report from Moody's explaining the factors it considers when establishing ratings and outlooks for regulated utilities. Exhibit RBM-3 is the most recent report from S&P explaining its methodology for establishing ratings and outlooks for regulated utilities.[3]

Q. WHAT ARE THE PRIMARY FINANCIAL RATIOS THAT CREDIT RATING AGENCIES ANALYZE?

A. The primary financial metrics evaluated by the major credit rating agencies include some version of the following: (i) the ratio of funds from operations or cash from operations to debt ("FFO/Debt" or "CFO/Debt"); (ii) the ratio of funds from operations or cash from operations to interest ("FFO/Interest" or "CFO/Interest"); (iii) the ratio of debt to earnings before interest, taxes, depreciation, and

[3] Fitch is less transparent than Moody's and S&P insofar as its rating criteria are concerned, but it appears to rely on many of the same factors that Moody's and S&P rely on.

amortization ("Debt/EBITDA"); and, to a lesser extent, (iv) the ratio of total debt to total capital ("Total Debt/Total Capital"). These financial metrics are a composite measure of the utility's ability to meet its financial obligations when they are due.

Q. ARE THE RATINGS AND OUTLOOKS ASSIGNED BY THE RATING AGENCIES BASED SOLELY ON THOSE FINANCIAL RATIOS?

A. No. The ratings are based on a combination of quantitative and qualitative factors that the rating agencies consider important. For example, Moody's bases its ratings on the following weighted factors:

Table 2. Key Rating Factors

Factor	Weighting
Regulatory Framework	25%
Ability to Recover Costs and Earn Returns	25%
Diversification	10%
Financial Strength	40%
Total	100%

As this table shows, the consistency and predictability of the regulatory framework and the utility's ability to recover its costs timely are collectively weighted more heavily than the financial ratios when establishing issuer ratings. Thus, there is an inherent measure of subjectivity in the ratings.

Q. HOW DOES THE UTILITY'S ISSUER RATING AFFECT ITS COST OF DEBT?

A. When a utility issues bonds, the interest rate is generally based on adding a credit spread to the benchmark United States Treasury bond having a similar maturity to the new bond that the company is issuing. Companies with lower credit ratings

typically face wider credit spreads and a resulting higher debt coupon rate because they are deemed more risky than companies with higher credit ratings. Companies with lower credit ratings may also find it more difficult to access capital when credit market conditions are tighter. The issuer rating of a utility impacts the rating assigned to a specific debt security.

Q. DOES A UTILITY'S CREDIT RATING ALSO AFFECT ITS COST OF EQUITY?

A. Yes. An equity investor's return is residual, meaning that equity investors receive their return after the bond investors. A lower credit rating results in greater risk to both the bond and equity investors, and those investors require higher returns to be compensated for the additional risk.

C. CenterPoint Houston's Credit Ratings and Outlooks

Q. WHAT ARE CENTERPOINT HOUSTON'S CURRENT ISSUER RATINGS AND OUTLOOKS?

A. CenterPoint Houston currently has an issuer rating of A- or its equivalent by Moody's and Fitch. It has an issuer rating of BBB+ by S&P. Its outlook is "Stable" from all three rating agencies, as reflected in Table 3.

Table 3. CenterPoint Houston's Issuer Ratings

	S&P	Moody's	Fitch
Issuer Rating	BBB+	A3	A-
Outlook	Stable	Stable	Stable

Q. HAS CENTERPOINT HOUSTON ALWAYS HAD THE ISSUER RATINGS IT HAS TODAY?

A. No. At the time of its last rate case in 2010, CenterPoint Houston's issuer ratings

were much lower. In fact, the Moody's issuer rating for CenterPoint Houston at that time was Baa3, which is only one notch above "junk-bond" status, and the S&P issuer rating for CenterPoint Houston at that time was BBB, which is only two notches above junk-bond status. In Docket No. 38339, however, the Commission increased CenterPoint Houston's equity ratio from 40.0% to 45.0%,[4] which helped improve the Company's credit metrics and issuer ratings.

Q. IS IT IMPORTANT FOR CENTERPOINT HOUSTON TO MAINTAIN ITS FINANCIAL INTEGRITY GOING FORWARD?

A. Yes. It is vitally important for CenterPoint Houston to maintain its financial integrity because the Company plans to spend approximately $5.14 billion in capital expenditures during the five-year period from 2019-2023.[5] This capital is being invested to ensure that CenterPoint Houston's transmission and distribution system can meet growth requirements and is safe, resilient and reliable. CenterPoint Houston will require both internal and external funds to finance these expenditures, and maintaining its financial health will enable it to continue to access capital markets on favorable terms relative to the market conditions at the time.

Additionally, financial integrity is critical to maintaining access to capital markets to fund daily utility operations, including the initial phases of construction projects. Regardless of the macroeconomic conditions, CenterPoint Houston needs to be in a position to access the financial markets for short-term and long-term debt needs.

[4] *Application of CenterPoint Energy Houston Electric, LLC for Authority to Change Rates*, Docket No. 38339, Order on Rehearing at 21, Finding of Fact No. 68 (Jun. 23, 2011).
[5] *See* CenterPoint Energy, Inc. Form 10-K at 68 (Feb. 28, 2019).

Q. CAN A PROCEEDING SUCH AS THIS ONE AFFECT CENTERPOINT HOUSTON'S FINANCIAL INTEGRITY?

A. Yes. Achieving a balanced or constructive outcome in a rate proceeding is an important factor considered by the rating agencies in assessing a utility's credit quality. Although CenterPoint Houston has successfully strengthened its balance sheet since the Company was rated Baa3 by Moody's, continued diligence is necessary to ensure that the Company retains access to capital markets on favorable terms relative to the market conditions at the time.

Q. HOW DO DECISIONS REGARDING CENTERPOINT HOUSTON'S COST OF DEBT, CAPITAL STRUCTURE, AND ROE AFFECT THE COMPANY'S FINANCIAL INTEGRITY?

A. Decisions regarding these key financial factors affect CenterPoint Houston's financial strength and investment strategy in three ways:

- First, the authorized ROE and equity ratio affect CenterPoint Houston's earnings and directly affect its ability to fund capital investment with internally-generated funds. Both debt and equity investors expect a utility to be able to internally generate a substantial portion of its investment funding.

- Second, the capital structure and authorized returns directly affect all of the Company's key credit metrics because either total debt or interest expense is a component of each of the primary credit metrics that rating agencies analyze.

- Third, debt and equity investors expect CenterPoint Houston to be able to recover its costs in a timely manner and to have an opportunity to earn its authorized ROE. As I will explain later in my testimony, investors' and credit rating agencies' perceptions regarding the regulatory environment in which a utility operates are an important consideration in assessing the utility's risk.

IV. REASONABLENESS OF A 50% EQUITY RATIO

Q. WHAT TOPIC DO YOU DISCUSS IN THIS SECTION OF YOUR TESTIMONY?

A. I explain that it is reasonable for the Commission to authorize a capital structure composed of 50.0% equity and 50.0% debt for CenterPoint Houston.[6]

Q. WHY IS A CAPITAL STRUCTURE WITH 50.0% EQUITY AND 50.0% DEBT APPROPRIATE FOR CENTERPOINT HOUSTON?

A. A capital structure containing 50.0% equity and 50.0% debt is appropriate for several reasons:

- CenterPoint Houston is exposed to business and regulatory risks that justify a capital structure with 50.0% equity and 50.0% debt;
- A 50.0% equity ratio will help CenterPoint Houston to maintain its current A- issuer rating, which will help ensure that the Company has continuous access to the capital markets and can therefore borrow funds at satisfactory rates to finance its business needs in nearly all economic climates; and
- The recommended 50.0% equity level is consistent with the equity ratios of comparable companies and with the equity levels recently established for transmission and distribution utilities in other jurisdictions.

I will discuss each of these reasons in more detail in the following subsections of my testimony.

[6] "Capital structure" refers to the percentages of debt and equity used to finance the assets and perform the operations necessary to provide service to customers. The primary sources of capital are debt and common equity. Capital structure is typically expressed in terms of the ratio of a particular type of capital to total capital.

A. Business and Regulatory Risks

Q. IS IT IMPORTANT TO CONSIDER BUSINESS AND REGULATORY RISK WHEN ESTABLISHING AN APPROPRIATE CAPITAL STRUCTURE FOR CENTERPOINT HOUSTON?

A. Yes. In order to achieve a targeted credit rating, a utility with greater business and regulatory risk requires a greater amount of equity, all else being equal, than a utility with lower business and regulatory risk.

Q. WHAT BUSINESS AND REGULATORY RISKS DO YOU BELIEVE ARE IMPORTANT TO CONSIDER WHEN ESTABLISHING AN APPROPRIATE CAPITAL STRUCTURE FOR CENTERPOINT HOUSTON?

A. I believe the following business and regulatory risks justify the 50% equity ratio that I am supporting in this testimony:

- Elevated capital expenditures over the next five years;
- Risk caused by the TCJA;
- Risk of catastrophic damage from hurricanes; and
- Regulatory risk.

1. Elevated Capital Expenditures

Q. IS CENTERPOINT HOUSTON EXPERIENCING LOAD GROWTH?

A. Yes. Unlike many other utilities that are experiencing flat demand or even declines in load, CenterPoint Houston's service area is expanding rapidly. In recent years, the load growth has averaged approximately two percent per year, and we anticipate two percent customer growth to continue over the next several years.

Q. HOW DOES THAT TYPE OF LOAD GROWTH AFFECT CENTERPOINT HOUSTON'S CREDIT METRICS?

A. As a public utility, CenterPoint Houston has a statutory duty to provide transmission and distribution service to all customers in its certificated service area. Thus, CenterPoint Houston is required to invest the capital necessary to construct facilities that will serve the additional load.

Q. HOW MUCH CAPITAL DOES CENTERPOINT HOUSTON EXPECT TO INVEST OVER THE NEXT FIVE YEARS TO SERVE NEW CUSTOMERS AND TO MAINTAIN ITS EXISTING SYSTEM?

A. Table 4 lists the amount of capital that CenterPoint Houston expects to invest during the five-year period from 2019 through 2023:

Table 4. Projected Capital Expenditures[7]

Year	2019	2020	2021	2022	2023
Projected Capital Expenditures (in millions)	$979	$1,028	$1,178	$979	$980

Q. DOES CENTERPOINT EXPECT TO GENERATE ENOUGH REVENUE FROM OPERATIONS TO FUND THAT INVESTMENT?

A. No. CenterPoint Houston's revenue from operations will not be sufficient to fund all of that investment. Therefore, it will be necessary for CenterPoint Houston to fund part of the incremental investment through debt issuances, retained earnings, and equity infusions from CenterPoint Energy, Inc. ("CNP").

[7] CenterPoint Energy, Inc. Form 10-K at 68 (Feb. 28, 2019).

2. Impact of TCJA on Capital Structure

Q. WHAT MAJOR ELEMENTS OF THE TCJA WILL AFFECT CENTERPOINT HOUSTON'S REVENUE REQUIREMENT?

A. For ratemaking purposes, the TCJA affects CenterPoint Houston and its customers in three primary ways:

- It reduces the federal corporate income tax rate from 35% to 21%;
- It allows utilities to continue to deduct interest expense; and
- It eliminates the right of utilities to calculate taxes using bonus depreciation.

Taken as a whole, these changes benefit CenterPoint Houston's customers by reducing the Company's revenue requirement, but they weaken CenterPoint Houston's credit quality in the absence of any mitigation measures. For further discussion of the impact of the TCJA on CenterPoint Houston, please see the testimony of Mr. Pringle.

Q. WHY DO YOU SAY THAT THE TAX LAW CHANGES WEAKEN CENTERPOINT HOUSTON'S CREDIT QUALITY?

A. The weakening of credit quality results primarily from the combination of lower tax rates and the elimination of bonus depreciation. The reduction in the federal corporate tax rate from 35% to 21% reduces the federal income tax expense included in the revenue requirement by about 40%. Absent the ability to defer taxes through accelerated and bonus depreciation, CenterPoint Houston would be largely indifferent to that reduction in the tax rate because the tax expense collected from customers would simply be paid to the Internal Revenue Service ("IRS") on an annual basis. But the availability of accelerated depreciation—and in recent years,

bonus depreciation—has allowed CenterPoint Houston to defer payment of some of the taxes until a later time, and CenterPoint Houston (along with its customers and the utility sector in general) has benefited from the deferred taxes because it effectively had an interest-free loan from the federal government.[8] CenterPoint Houston was able to use this source of cash for the usual utility purposes, such as debt service, capital investments, and ongoing operation and maintenance costs. The rating agencies counted that incremental cash in the financial metrics they calculated, such as FFO/Debt and Debt/EBITDA.

On a going-forward basis, however, utilities such as CenterPoint Houston will be collecting lower tax amounts. All else being equal, the lower tax collections and the end of bonus depreciation will result in less revenue, which reduces the FFO and EBITDA amounts used in the rating agencies' calculations.[9] As explained earlier, these ratios, along with other factors, are used to assign credit ratings to CenterPoint Houston, and those credit ratings play a large role in determining the interest rates at which the Company can borrow money. Thus, absent measures that will help mitigate the lost cash flow, the TCJA will result in weakened credit metrics and reduced financial strength, and it may result in higher capital costs (both debt and equity), which would increase CenterPoint Houston's revenue requirement.

[8] The cumulative deferred tax balance, which is commonly referred to as Accumulated Deferred Income Taxes ("ADIT"), is subtracted from CenterPoint Houston's rate base, so customers pay a return on a lower rate base amount, which reduces the overall amount of the revenue requirement. Thus, customers have also benefitted from the deferred taxes.

[9] As explained earlier, CFO and EBITDA are typically used as the numerators and denominators of rating agency ratios, such as CFO-to-Debt and Debt-to-EBITDA.

Q. HAVE THE CREDIT RATING AGENCY REACTIONS TO THE TCJA ALREADY BEGUN?

A. Yes. In January 2018, Moody's changed its outlook for 24 U.S. regulated utilities and utility holding companies from "Stable" to "Negative" because of the effects of tax reform.[10] S&P and Fitch also issued reports in January 2018 noting the detrimental effects on utilities' credit quality as a result of the TCJA, although those rating agencies did not make immediate changes to their ratings or outlooks for particular utilities.[11] All three of the rating agencies, however, have emphasized that constructive responses by regulatory agencies, such as the Commission, are necessary to mitigate the effects of the TCJA on utility cash flows.

Q. HAVE THE RATING AGENCIES TAKEN ANY ACTIONS SINCE JANUARY 2018 TO ADDRESS THE EFFECTS OF THE TCJA?

A. Yes. In June 2018, Moody's placed the entire regulated utility industry on a negative outlook, primarily because of the anticipated effects of the TCJA on utility cash flows.[12] Placing an entire industry or sector on negative outlook means that the rating agency foresees more downgrades than upgrades over the intermediate term for that industry. I am also aware of certain instances in which the rating agencies have downgraded certain utilities' credit ratings because the regulatory response to TCJA was inadequate to protect the utilities' credit metrics.[13]

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[10] Moody's Investors Service, *Tax Reform Is Credit Negative for Sector, but Impact Varies by Company* (Jan. 24, 2018).
[11] S&P Global Market Intelligence, *U.S. Tax Reform: For Utilities' Credit Quality, Challenges Abound* (Jan. 24, 2018); Fitch Ratings, *Tax Reform Impact on the U.S. Utilities, Power & Gas Sector* (Jan. 24, 2018).
[12] Moody's Investors Service, *Regulated Utilities – US: 2019 Outlook Shifts to Negative Due to Weaker Cash Flows, Continued High Leverage* (Jun. 18, 2018).
[13] *E.g.*, Moody's Investor Service, *Rating Action: Moody's Changes Xcel Energy's Outlook to Negative; Downgrades Southwestern Public Service Ratings to Baa2 with Stable Outlook* (Oct. 19, 2018).

Q. HOW WILL THE TCJA AFFECT CENTERPOINT HOUSTON'S FINANCING NEEDS?

A. Because of the lower tax rate prescribed by the TCJA, CenterPoint Houston will collect less tax expense from customers than it did before the enactment of the TCJA, and because bonus depreciation is no longer available, CenterPoint Houston will have to pay the IRS a greater percentage of the cash it does collect. Collectively, those developments reduce the interest-free loan that CenterPoint Houston has been accustomed to receiving from the federal government, which makes it necessary to replace that funding with other sources of external capital.

Q. HOW DOES THE REDUCTION IN CASH FLOW AFFECT THE CREDIT METRICS THAT RATING AGENCIES USE IN THEIR ANALYSES?

A. The reduction in cash flow affects those credit metrics by changing the numerators and denominators of the ratios used by the rating agencies. As explained earlier, cash flow metrics such as FFO and EBITDA are used in the numerator or denominator of most of the rating agency metrics, such as the ratio of FFO/Debt and the ratio of Debt/EBITDA. If the debt level remains the same, a reduction in cash flow makes those ratios less favorable. In fact, though, the debt level may rise if, for example, the utility must secure additional debt financing to fund capital expenditures that formerly would have been funded in part by the cash flow attributable to deferred tax expense. The increased debt level further exacerbates the deterioration in the rating agencies' credit metrics.

Q. YOU TESTIFIED EARLIER THAT THE RATING AGENCIES HAVE STATED THAT CONSTRUCTIVE RESPONSES BY THE REGULATORY AGENCIES ARE NECESSARY TO MITIGATE THE EFFECTS OF THE LOST CASH FLOW. WHAT TOOLS ARE AVAILABLE TO THE REGULATORY COMMISSIONS TO RESTORE THE CASH FLOW TO LEVELS THAT WILL MAINTAIN CURRENT CREDIT METRICS?

A. The rating agencies have identified a number of tools to restore part of the lost cash flow, including the following:

- An increase in the authorized equity ratio;
- An increase in the authorized ROE; or
- An increase in depreciation expense.

These tools are not mutually exclusive. They can be used in combination with each other and in combination with other tools, such as redirecting amortization expense.

Q. WHAT TOOL IS CENTERPOINT HOUSTON PROPOSING THAT THE COMMISSION ADOPT IN THIS CASE?

A. CenterPoint Houston proposes that the Commission help mitigate the reduction in cash flow by increasing the equity ratio.[14] Because increasing the equity ratio has the corresponding effect of reducing the debt ratio, it improves the credit metrics at a lower cost to customers than the other tools.

[14] CenterPoint Houston is also asking that the Commission increase depreciation rates to some extent.

Q. ARE YOU AWARE OF OTHER UTILITY COMMISSIONS THAT HAVE APPROVED INCREASES IN UTILITIES' EQUITY RATIOS AS A MEANS TO MITIGATE THE EFFECTS OF THE TCJA?

A. Yes. I am aware of several regulatory commissions that have approved increases in utility equity ratios to offset the effect of the TCJA on utilities' cash flows:

- The Alabama Public Service Commission approved a request by Alabama Power Company to move to a 55.0% equity ratio over time (from approximately 47%) because of the lost cash flows caused by the TCJA;[15]
- The Georgia Public Service Commission approved requests by Georgia Power Company and Atlanta Gas Light Company to move to a 55% equity ratio to mitigate the effects of the TCJA (from approximately 51%);[16] and
- The Florida Public Service Commission approved a request by Florida City Gas to increase its equity ratio from 46.9% to 48.0% to mitigate the effects of the TCJA.[17]

Q. HAS CENTERPOINT HOUSTON PERFORMED ANY ANALYSIS TO DEMONSTRATE THAT ITS CREDIT METRICS WILL DECLINE ABSENT COMMISSION APPROVAL OF AN INCREASED EQUITY RATIO?

A. Yes. CenterPoint Houston has performed an analysis to determine whether its currently-approved 45.0% equity ratio would be sufficient to maintain the

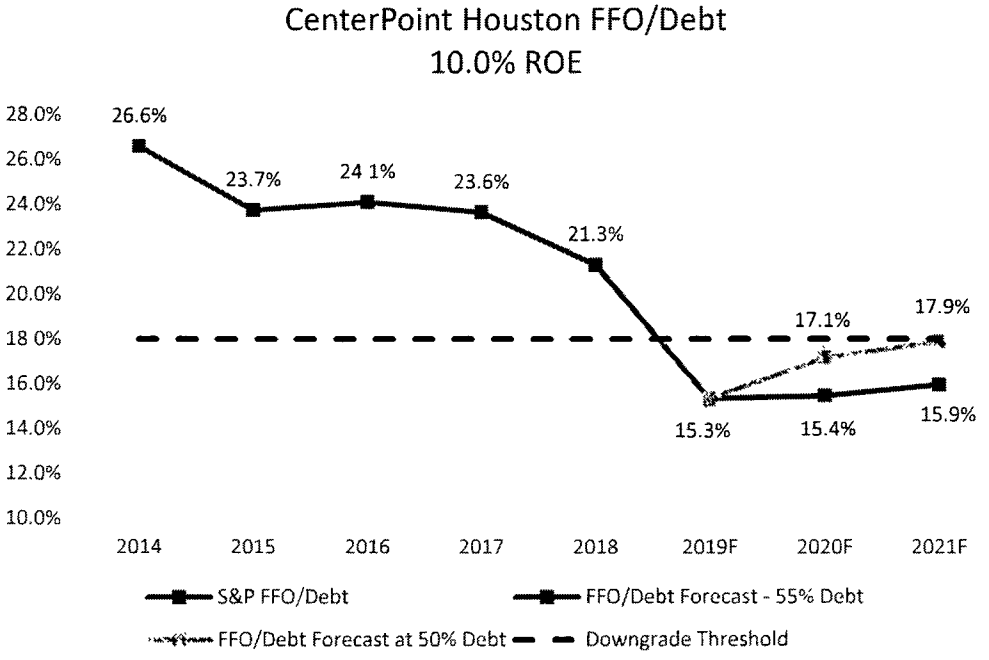
[15] Alabama Public Service Comm'n, *Petition for Revision to Rate RSE*, Docket Nos. 18117 and 18416, Order at 7 (May 7, 2018) ("[T]he TCJA will continue to have a negative effect on Alabama Power's credit metrics, thus jeopardizing the Company's favorable credit ratings, absent mitigating measures. The Commission has long recognized the importance of a strong, investment grade credit rating, as it yields direct benefits to customers in the form of lower interest expense, as well as indirect benefits by providing the Company with access to the capital markets, even in times of economic stress.").

[16] Georgia Public Service Comm'n, *In re Georgia Power Company's 2013 Rate Case,* Docket No. 36989, Order on the Tax Cuts and Jobs Act at 1 and Exhibit 1 (Mar. 6, 2018); Georgia Public Service Comm'n, *In re Atlanta Gas Light Company Georgia Rate Adjustment Mechanism: Application for Approval of an Alternative Form of Regulation*, Docket No. 40824, Stipulation and Joint Motion for Approval of Staff and Atlanta Gas Light Company at 3 (May 9, 2018).

[17] Florida Public Service Comm'n, *In re: Petition for Rate Increase by Florida City Gas*, Docket No. 20170179-GU, Order No. PSC-2018-0190-FOF-GU (Apr. 20, 2018).

Company's current credit ratings in light of the TCJA impacts. In that analysis, CenterPoint Houston assumed that the threshold for a credit downgrade would be a FFO/Debt ratio of 18.0%, which is the ratio that Moody's has identified as being the lower bound of an A3 rating. S&P and Fitch have a similar downgrade threshold. CenterPoint Houston then calculated FFO/Debt ratios using the Company's currently-approved 10.0% ROE and 45.0% equity ratio. As Table 5 shows, CenterPoint Houston's FFO/Debt ratio drops to approximately 15% with a 45.0% equity and a 10.0% ROE, which is not sufficient to maintain the current rating. A 50.0% equity ratio, on the other hand, increases the FFO/Debt ratio just enough to approximate the threshold for a downgrade.

Table 5



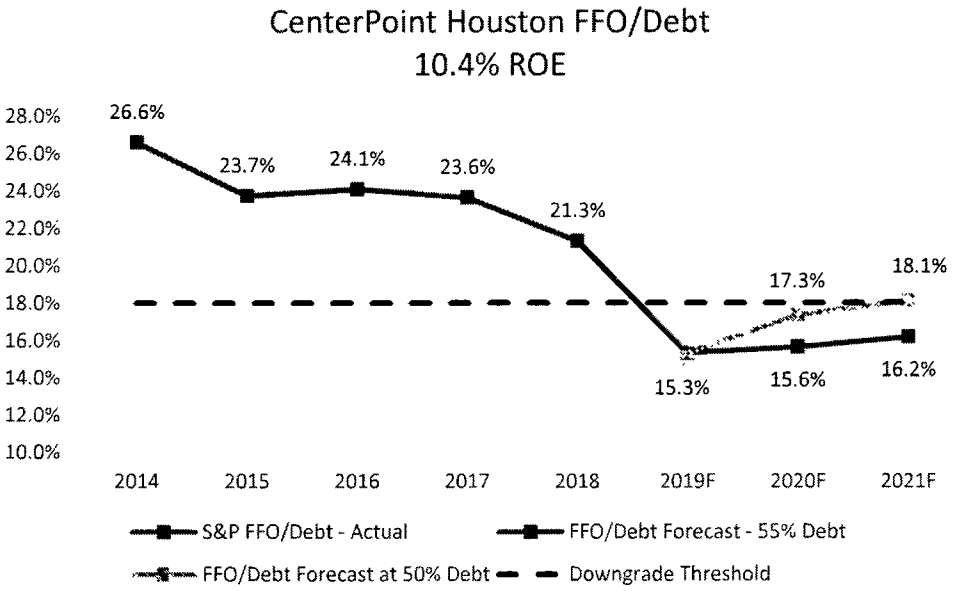
Q. DOES THAT SUGGEST THAT A 10.0% ROE WOULD BE SUFFICIENT IF THE COMMISSION WERE TO APPROVE AN EQUITY RATIO OF 50.0%?

A. No. As I noted, even with a 50.0% equity ratio and a 10.0% ROE, CenterPoint Houston would remain at or slightly below the lower bound of the metrics needed to maintain an A3 rating. Any type of adverse financial experience, such as a hurricane or an economic downturn, would place CenterPoint Houston at risk of a downgrade. To maintain a cushion against a downgrade, CenterPoint Houston needs both the 50.0% equity ratio and the 10.40% ROE supported by Mr. Hevert.

Q. HAS THE COMPANY PERFORMED AN ANALYSIS TO DETERMINE WHAT THE FFO/DEBT RATIO WOULD BE WITH A 50.0% EQUITY RATIO AND A 10.40% ROE?

A. Yes. Table 6 shows the effects of a 10.40% ROE and a 50.0% equity ratio on CenterPoint Houston's FFO/Debt ratio. This table provides a scenario analysis using the proposed 10.40% ROE and adjusting the capital structure, but leaves all other variables consistent with those presented in the rate case schedules and workpapers.

Table 6



As Table 6 demonstrates, the combination of a 50.0% equity ratio and a 10.40% ROE would increase the FFO/Debt ratio by roughly 200 basis points. That may help maintain CenterPoint Houston's current credit ratings and offset the cash flow impact of the TCJA described above, but it still does not leave much cushion for an adverse financial experience, such as a hurricane, that impacts cash flow and leverage.

Q. HAS THE COMPANY INFORMED THE COMMISSION AND THE PARTIES IN ANY PREVIOUS DOCKET THAT THE TCJA'S EFFECTS ON CASH FLOW MAY NECESSITATE A HIGHER EQUITY RATIO FOR CENTERPOINT HOUSTON?

A. Yes. In my rebuttal testimony in Docket No. 48226, I explained that the TCJA had reduced CenterPoint Houston's cash flows and that in "order to improve cash flow

metrics, CenterPoint Houston may need the Commission to approve a higher equity content in its next general rate case as compared to the currently authorized 45%."[18]

3. Hurricane-Related Risk

Q. DOES CENTERPOINT HOUSTON CONTINUE TO FACE THE RISK OF CATASTROPHIC DAMAGE FROM HURRICANES AFFECTING ITS COASTAL SERVICE TERRITORY?

A. Yes. CenterPoint Houston's service territory is all within 100 miles of the Gulf Coast. In 2017, flooding from Hurricane Harvey caused approximately $117 million of damage to CenterPoint Houston's assets, including substations, electric vaults, transmission and distribution lines, and office facilities. Hurricane Harvey was a flood event, unlike Hurricane Ike in 2008, which was a wind and storm surge event. Since Hurricane Ike, CenterPoint Houston has invested billions of dollars into its Smart Grid program to allow better responsiveness to the needs of the electrical grid and the Houston metro area in challenging times. This technology is invaluable for CenterPoint Houston's operations, but it is susceptible to both wind damage and flood damage. The significant damage caused by Hurricane Harvey serves as a reminder of the enormous cost of a hurricane, the need for large liquidity reserves, and the importance of having access to the capital markets at all times. As I will discuss in more detail below, CenterPoint Houston and other similarly situated utilities continue to be unable to purchase transmission and distribution insurance covering most potential losses arising from hurricanes at commercially reasonable rates.

[18] *Application of CenterPoint Energy Houston Electric, LLC for Approval to Amend its Distribution Cost Recovery Factor*, Docket No. 48226, Rebuttal Testimony of Robert McRae at 11 (May 29, 2018).

Q. DOES THE THREAT OF COSTLY HURRICANES SUPPORT A HIGHER DEGREE OF EQUITY IN CENTERPOINT HOUSTON'S CAPITAL STRUCTURE WHEN SETTING RATES?

A. Yes. The threat of costly hurricanes is certainly one factor that would justify a higher equity level. A higher equity percentage would better enable CenterPoint Houston to access the debt markets in order to rebuild should the need arise after a catastrophic event.

Q. TEXAS LAW ALLOWS UTILITIES THAT SUFFER HURRICANE DAMAGE TO RECOVER STORM RESTORATION COSTS AND TO OBTAIN SECURITIZATION FINANCING FOR THOSE COSTS.[19] DOES THAT COMPLETELY MITIGATE THE RISK OF HURRICANE DAMAGE FOR CENTERPOINT HOUSTON?

A. No. The ability to recover and securitize storm restoration costs is helpful, but it does not completely mitigate the risk to CenterPoint Houston because of the time lag inherent in obtaining the approvals required for securitization financing and in issuing the securitization bonds, and because securitization is limited to losses of at least $100 million.

Q. HOW MUCH TIME IS EXPECTED TO ELAPSE BETWEEN THE DATE A HURRICANE STRIKES CENTERPOINT HOUSTON'S SERVICE TERRITORY AND THE DATE THAT THE SYSTEM RESTORATION BONDS CAN BE ISSUED?

A. Assuming that CenterPoint Houston can obtain the two orders from the

[19] Tex. Util. Code §§ 39.401-39.406.

Commission that are necessary for the issuance of system restoration bonds, 10 to 12 months in total are expected to elapse between the date of a hurricane that results in $100 million or more of system restoration costs and the date of the related issuance of system restoration bonds. To start with, following a major hurricane, several months are likely to elapse before CenterPoint Houston would complete its system restoration work, obtain all of the invoices relating to system restoration activities, and prepare its filing for a Commission determination of reasonable and necessary system restoration costs. After that, the Commission would then be expected to issue its order in up to 150 days. Although the time period allowed for the Commission's consideration of the request for a financing order could elapse simultaneously with the determination of the amount of restoration costs deemed reasonable and necessary, the statutory time period for consideration of a financing order is up to 90 days. Assuming that CenterPoint Houston would take measures to minimize the combined amount of time for obtaining the two orders and the financing order would be approved at the Commission's meeting immediately following the open meeting at which the cost determination is approved, the combined time from the filing for a cost determination and the receipt of a financing order is estimated at 164 days. Finally, after receipt of the Commission's financing order, approximately six weeks would be expected to be needed to finalize the bond documentation and market the system restoration bonds. The six-week period could be longer as a result of a Securities and Exchange Commission ("SEC") review of the registration statement, unfavorable market conditions or other factors. The period between pricing and settlement of the bonds would be approximately

one week. Thus, the time lag between the incurrence of the costs and the implementation of securitization financing can be as long as twelve months, which creates liquidity concerns, and ultimately financial risk, for CenterPoint Houston.

4. Regulatory Risk

Q. WHAT IS REGULATORY RISK?

A. Regulatory risk refers to the possibility that a utility may not be able to recover its costs in a timely fashion, including the costs necessary to service debt and issue dividends.

Q. DOES CENTERPOINT HOUSTON CONTINUE TO FACE SIGNIFICANT REGULATORY RISK?

A. Yes. Electric transmission and distribution companies are dependent for their revenue upon regulatory and legislative decisions. Unfavorable policies and outcomes are among the largest risks for most regulated utilities. Investors will continue to focus on CenterPoint Houston's regulatory risk, especially in light of the TCJA's impact on debt and cash flow.

Q. HOW DO YOU ASSESS THE REGULATORY ENVIRONMENT FOR ELECTRIC UTILITIES IN TEXAS?

A. I believe that the Commission seeks to carry out its responsibilities and its legislative mandate in a professional and unbiased manner. Indeed, I think that CenterPoint Houston has a good working relationship with the Commission and Commission Staff, although we of course do not always agree on all matters. However, the relevant question is really: How do outside parties (investors, analysts, rating agencies, etc.) perceive the regulatory environment in Texas? Those are the parties to whom we must be responsive to raise additional capital at

reasonable costs, and in dealing with the investment community, perception is the reality.

Q. IS TEXAS PERCEIVED TO HAVE A CONSTRUCTIVE REGULATORY ENVIRONMENT?

A. To some extent. Both S&P and Moody's have characterized the Texas regulatory environment as being "constructive" or "credit positive," in large part because of the availability of cost-recovery riders such as the Transmission Cost Recovery Factor and Distribution Cost Recovery Factor.[20] On the other hand, Fitch has characterized the Texas regulatory framework as "challenging," primarily because rates are established based on a historical test year and because the ROEs granted by the Commission are relatively low compared to many other state commissions' authorized ROEs.[21] In addition, Regulatory Research Associates ("RRA"), which monitors the utility industry, ranks the Commission as being at the lower bound of the "average" category insofar as the constructiveness of the regulatory environment is concerned.[22]

[20] S&P Global Ratings, *Summary: CenterPoint Energy Houston Electric, LLC* at 4 (Dec. 6, 2017); Moody's Investors Service, *CenterPoint Energy Houston Electric, LLC, Update to Credit Analysis* at 1-2 (Jun. 19, 2018).
[21] Fitch Ratings, *CenterPoint Energy Houston Electric, LLC* at 1 (Apr. 13, 2018).
[22] Exhibit RBM-4, S&P Global Market Intelligence, RRA Regulatory Focus, *State Regulatory Evaluations* at 1 (Feb. 8, 2019).

B. Need for a Capital Structure that Supports an A- Issuer Rating

Q. HAVE YOU PERFORMED ANY ANALYSES TO DETERMINE WHETHER A 50.0% EQUITY RATIO IS NECESSARY FOR CENTERPOINT HOUSTON TO MAINTAIN ITS CURRENT A- ISSUER RATING?

A. Yes. As I explained earlier, a 50.0% equity ratio will help CenterPoint Houston maintain its current A- issuer rating. In contrast, the 45% equity ratio currently approved by the Commission will not produce sufficient cash flow to maintain the Company's credit metrics at a level that is commensurate with its current ratings from the rating agencies.

Q. WHY IS AN A- ISSUER RATING APPROPRIATE FOR CENTERPOINT HOUSTON?

A. It is in the public interest for CenterPoint Houston to be in a position to borrow funds on reasonable terms under any circumstances that may arise in the future, barring some outright calamity befalling the financial markets. Solid financial integrity is a critical component of CenterPoint Houston's ability to address the ongoing financial challenges associated with providing reliable electric service. CenterPoint Houston routinely needs access to the debt capital markets at reasonable rates in order to finance its capital expenditures and refinance maturing debt. CenterPoint Houston may, from time to time, need to access the debt capital markets for unexpected needs such as system restoration costs following a hurricane or to cover a revenue loss resulting from a retail electric provider's payment default. These unexpected needs could occur at inopportune times when the financial markets are not robust, and CenterPoint Houston may not have

adequate liquidity reserves to wait for improved market conditions. Accordingly, I believe it is appropriate for CenterPoint Houston to attain and maintain an A-rating on its unsecured debt.

Q. WHAT GUIDELINES HAVE THE RATING AGENCIES PUBLISHED RELATING TO THE CAPITALIZATION OF UTILITIES AND SPECIFICALLY ELECTRIC UTILITIES?

A. Moody's published a report titled "Rating Methodology: Regulated Electric and Gas Utilities" and notes the following thresholds for Debt / Capitalization, assuming the low business risk grid:

Table 7

Rating	Debt / Capitalization Threshold
Aa	29% - 40%
A	40% - 50%
Baa	50% - 59%

Q. GIVEN THE DEBT/CAPITALIZATION METRICS PROVIDED BY MOODY'S, WOULD A UTILITY WITH A 55.0% DEBT RATIO MERIT A SINGLE-A RATING?

A. No. Because a 55.0% debt /45.0% equity capital structure falls in Moody's "Baa" category, a utility having 55.0% debt in its capital structure, like CenterPoint Houston, would need other credit-enhancing attributes to merit a single-A rating. In the past few years, CenterPoint Houston has been able to produce cash flow and interest coverage metrics above the Baa threshold and to earn returns in line with

an A rated utility. However, as cash flow weakens as the result of the TCJA and debt continues to increase to address the cash flow deficit, metrics will weaken and challenge CenterPoint Houston's current A3/BBB+/A- issuer rating.

Q. HAS ANY COMMENTATOR OPINED ON THE OPTIMAL CAPITAL STRUCTURE FOR A REGULATED UTILITY?

A. Yes. Dr. Roger Morin, a noted expert on regulatory finance, analyzes the optimal capital structure for utilities in his book *New Regulatory Finance*. Based on that analysis, Dr. Morin concludes that an A-rated utility is in the best interest of both customers and utilities:

> The message from the model is clear: over the long run, a strong A bond rating will minimize the pre-tax cost of capital to ratepayers. Long term achievement of at least an A rating is in the electric utility company's and ratepayers' best interests.
>
> ....
>
> The model results show that on an incremental cost basis, a strong A bond rating generally results in the lowest pre-tax cost of capital for electric utilities, especially under adverse economic conditions, which are far more relevant to the question of capital structure.[23]

C. Capital Structures of Comparable Utilities

Q. HAVE YOU REVIEWED THE CAPITAL STRUCTURES OF THE COMPANIES THAT MR. HEVERT INCLUDED IN HIS PROXY GROUP?

A. Yes. Those capital structures appear in Mr. Hevert's Exhibit RBH-9.

[23] Roger Morin, *New Regulatory Finance* at 515-516.

Q. IS A CAPITAL STRUCTURE WITH 50.0% COMMON EQUITY REASONABLE WHEN COMPARED TO CAPITAL STRUCTURES OF THE COMPANIES IN MR. HEVERT'S PROXY GROUP?

A. Yes. As shown on Mr. Hevert's Exhibit RBH-9, the average equity ratio of the 24 holding companies in the proxy group was 53.28% over the last eight calendar quarters. If one reviews the capital structures of the utility operating companies encompassed within those 24 holding companies, the average equity ratio during that same time period was 53.13%. Both of those percentages are considerably higher than the 50% equity ratio requested by CenterPoint Houston in this case.

Q. SOME OF THE OPERATING COMPANIES LISTED ON EXHIBIT RBH-9 ARE VERTICALLY INTEGRATED UTILITIES. ARE YOU AWARE OF ANY EVIDENCE SHOWING THAT A 50% EQUITY RATIO IS REASONABLE WHEN THE COMPARISON IS LIMITED TO ELECTRIC DELIVERY-ONLY UTILITIES?

A. Yes. RRA periodically publishes a report showing the authorized ROEs and equity ratios authorized by state regulatory commissions. Pages 11-12 of my Exhibit RBM-5, which is the RRA publication issued on January 31, 2109, shows that the average authorized equity ratio for delivery-only electric utilities was 49.91% for calendar year 2018.

Q. HOW DID YOU DETERMINE WHICH OF THE UTILITIES LISTED ON PAGE 10 WERE ELECTRIC DELIVERY-ONLY UTILITIES?

A. The "Footnotes" column at the right-hand side of Page 10 contains various numbers and letters, one of which is the letter "D." Page 15 of Exhibit RBM-5 explains that

the letter "D" denotes electric delivery-only utilities. Table 8 lists the utilities with the letter "D" beside them and the authorized equity ratios for those electric delivery-only utilities:

Table 8. Authorized Equity Ratios for Delivery-Only Utilities[24]

Date of Final Order	Utility	Authorized Equity Ratio
3/15/18	Niagara Mohawk Power Corporation	48.0%
4/18/18	Connecticut Light and Power Company	53.0%
5/31/18	Potomac Electric Power Company	50.44%
6/14/18	Central Hudson Gas & Electric Corp.	48.0%
6/28/18	Emera Maine	49.0%
8/8/18	Potomac Electric Power Company	50.44%
8/21/18	Delmarva Power & Light Company	50.52%
8/24/18	Narragansett Electric Company	50.95%
9/26/18	Dayton Power and Light Company	47.52%
10/04/18	UGI Utilities, Inc.	54.02
10/29/18	Public Service Electric and Gas Company	54.0%
11/1/18	Ameren Illinois Company	50.0%
12/4/18	Commonwealth Edison Company	47.11%
12/19/18	Duke Energy Ohio, Inc.	50.75%
12/20/18	Texas-New Mexico Power Company	45.0%
12/21/18	Green Mountain Power Corporation	49.85%
Average		49.91%

[24] Exhibit RBM-5 at 11-12.

As Table 8 shows, the average authorized equity ratio for electric delivery-only utilities in 2018 was 491 basis points higher than CenterPoint Houston's current authorized equity ratio, but only 9 basis points lower than the 50% equity ratio that CenterPoint Houston asks the Commission to approve in this case.

D. Summary of Capital Structure Recommendation

Q. HOW WOULD YOU SUMMARIZE THE DATA THAT YOU HAVE REVIEWED AND PRESENTED IN THIS TESTIMONY ON THE MATTER OF CAPITAL STRUCTURE?

A. The impacts of the TCJA on cash flow and incremental debt necessary to finance CenterPoint Houston's capital investment will create downward pressure of its credit metrics and may lead to a ratings downgrade. The most efficient way to maintain CenterPoint Houston's A3/BBB+/A- issuer credit rating is to increase the equity content in its capital structure. This will finance more of CenterPoint Houston's capital investment with equity and improve metrics. The data and testimony I have presented demonstrate the reasonableness of using a 50/50 capital structure. As I have stated previously, I think that it is in the best interest of electric consumers and the communities we serve for the local transmission and distribution utility to have a single-A credit rating because such rating is expected to allow the utility to raise funds as needed, on reasonable terms, to finance the ongoing capital investment and improvements in our electric system even in the face of adverse conditions (whether that be a hurricane that affects the utility or developments in the bank or capital markets that affect all companies in the industry).

V. COST OF DEBT CAPITAL

Q. WHAT TOPIC DO YOU DISCUSS IN THIS SECTION OF YOUR TESTIMONY?

A. I describe CenterPoint Houston's embedded cost of long-term debt, and I explain that the Company's embedded cost of long-term debt has declined significantly since Docket No. 38339, the Company's last base rate case.

Q. WHAT IS THE COMPANY'S CURRENT EMBEDDED COST OF LONG-TERM DEBT IN THIS CASE?

A. CenterPoint Houston's current embedded cost of long-term debt is 4.38%.

Q. HOW DID CENTERPOINT HOUSTON CALCULATE THAT LONG-TERM DEBT RATE?

A. The cost of debt was calculated per Schedule II-C-2.4a. The cost of debt percentage is calculated as the adjusted annual debt requirement divided by the net balance of debt as of December 31, 2018. Please see Schedule II-C-2 for weighted average cost of capital calculations.

Q. HOW DOES THE CURRENT COST OF LONG-TERM DEBT COMPARE TO THE COST APPROVED BY THE COMMISSION IN DOCKET NO. 38339?

A. In Docket No. 38339, the Commission approved a 6.74% cost of long-term debt.[25] Thus, the current long-term debt rate is significantly lower than the rate approved by the Commission in Docket No. 38339. Part of that decrease is due to the changes

[25] Docket No. 38339, Order on Rehearing at 21, Finding of Fact No. 74 (Jun. 23, 2011).

in capital market conditions, but much of it is attributable to the improvement in CenterPoint Houston's credit rating since Docket No. 38339.

Q. HAVE DEBT COSTS BEEN INCREASING RECENTLY?

A. Yes. The cost of short-term and long-term debt has increased significantly in the past few years, primarily as the result of rising interest rates. This can be viewed in CenterPoint Houston's two most recent 10-year bond offerings. In August of 2016, a 10-year bond was issued at a rate of 2.40%. Several months later, another 10-year bond was offered in January 2017 at a rate of 3.00%. That represents a 25% increase in the coupon over a relatively short amount of time.

Q. YOU TESTIFIED EARLIER THAT CENTERPOINT HOUSTON IS AT RISK OF A RATINGS DOWNGRADE IF ITS EQUITY RATIO IS SET AT A LEVEL BELOW 50%. CAN YOU PROVIDE ANY GUIDANCE ON HOW CENTERPOINT HOUSTON'S DEBT COSTS MIGHT INCREASE IF THE COMPANY WERE TO EXPERIENCE A RATINGS DOWNGRADE?

A. Yes. CenterPoint Houston's current corporate/long-term issuer ratings are A3/BBB+/A- at Moody's, S&P, and Fitch respectively. Indicative pricing of a new 30-year bond for an A- rated utility can be estimated using Bloomberg's Curve Finder application, and as of February 28, 2019, that rate would be approximately 4.352%. A one-notch downgrade to BBB+ would cause the indicative rate for the same security to increase to 4.581%, a 22.9-basis point increase. If that increase was applied to CenterPoint Houston's most recent long-term bond offering of $700 million, it would cost customers an additional $48.09 million in interest expense over the life of the bond. And because CenterPoint Houston is a regular

issuer in the debt capital markets, even small increases in the interest rate can have a significant impact over time.

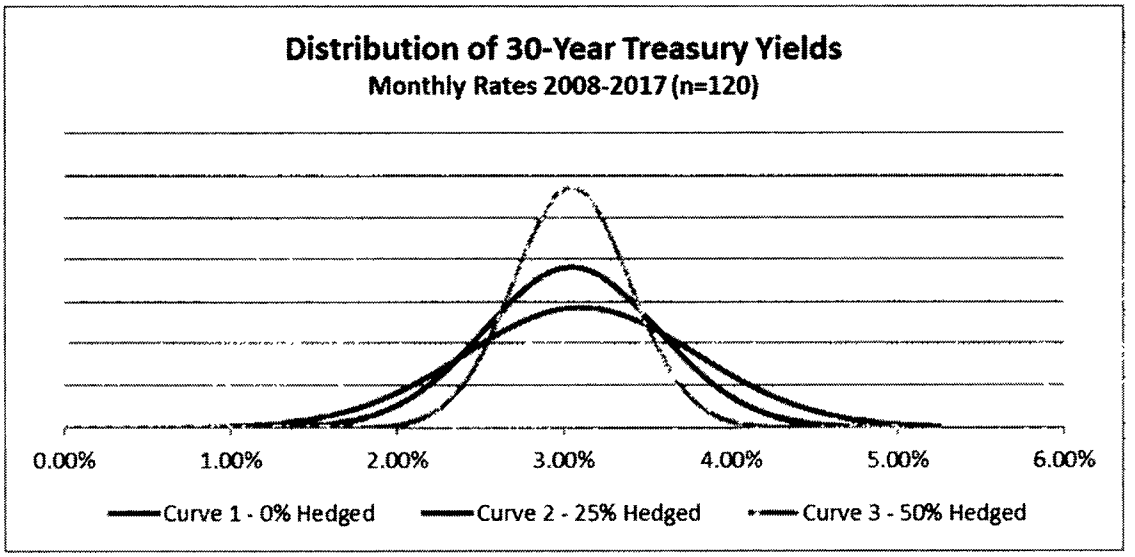
Q. DOES CENTERPOINT HOUSTON TAKE STEPS TO MANAGE INTEREST RATE RISK FOR THE BENEFIT OF ITS CUSTOMERS?

A. Yes. CenterPoint Houston undertakes interest rate risk management initiatives such as interest rate hedging to protect the Company, and ultimately its customers, against adverse fluctuations in interest rates by reducing its exposure to variability in cash flows relating to interest payments on a forecasted issuance of debt. This objective has been consistently met in the past few years by hedging the risk of changes in the Company's cash flows (interest payments) attributable to changes in the U.S. Treasury benchmark yield, the designated benchmark interest rate being hedged.

Q. HOW DOES PRE-ISSUANCE INTEREST RATE RISK MANAGEMENT BENEFIT CENTERPOINT HOUSTON'S CUSTOMERS?

A. The practice of pre-issuance interest rate hedging is designed not to speculate on the direction of interest rates, but instead to reduce the range of interest rate outcomes. In this manner, CenterPoint Houston's customers are insulated from volatile interest rate markets by dampening year-over-year changes in the cost of debt. The example below illustrates that an effective interest rate hedging program reduces the range of probable reference interest rates, thereby improving the certainty of financing costs over time. The wider curve in the chart below signifies a wider distribution of historical outcomes; the more narrow curve signifies the lower variability of outcomes.

Table 9



Source: Federal Reserve Economic Data – 30-year constant maturity rate, percent, monthly, not seasonally adjusted.

Q. DOES YOUR COST OF DEBT INCLUDE THE IMPACT OF PRE-ISSUANCE HEDGING?

A. Yes. Including the impact of pre-issuance hedging, the cost of debt requested is 4.38%. Excluding the impact of pre-issuance hedging, the cost of debt would be 4.39%, an increase of 1 basis point. Please see Schedules II-C-2.4a and II-C-2.4a.1 and the testimony of Ms. Colvin.

VI. COST OF EQUITY CAPITAL AND RATE OF RETURN

Q. HAVE YOU REVIEWED THE TESTIMONY OF MR. HEVERT IN WHICH HE PROPOSES A 10.4% COST OF EQUITY FOR CENTERPOINT HOUSTON?

A. Yes. I have reviewed Mr. Hevert's testimony, and I agree with him that 10.4% is an appropriate cost of equity for CenterPoint Houston.

Q. WHAT IS THE APPROPRIATE RATE OF RETURN FOR CENTERPOINT HOUSTON USING THE 10.4% COST OF EQUITY, A 4.38% COST OF DEBT AND A CAPITAL STRUCTURE COMPOSED OF 50.0% DEBT AND 50.0% EQUITY?

A. Using a 50.0% debt / 50.0% equity capital structure, a 4.38% cost of debt and 10.4% cost of equity, the overall rate of return for CenterPoint Houston is 7.39%. That is the rate of return that CenterPoint Houston is asking the Commission to adopt in this proceeding. Please refer to Schedule II-C-2.1 for this calculation.

VII. AVAILABILITY OF TRANSMISSION AND DISTRIBUTION PROPERTY INSURANCE

Q. IS INSURANCE AVAILABLE TO COVER LOSSES TO CENTERPOINT HOUSTON'S TRANSMISSION AND DISTRIBUTION PROPERTY?

A. CenterPoint Houston can obtain property insurance, subject to varying deductibles, to cover its substations, but property insurance to cover weather-related losses to wires, poles and towers is not available on reasonable terms. During the annual property insurance renewal process, CenterPoint Houston's Insurance Risk Management ("IRM") group requests a market update on the availability of transmission and distribution asset coverage from its broker. Each year, the broker reports that, because of prior losses from hurricanes, wildfires, etc., insurers are willing to offer insurance on the transmission and distribution assets other than substations only if CenterPoint Houston is willing to pay extremely high premiums for the insurance. Because the premiums for third-party insurance are not reasonably priced, it is reasonable and prudent for CenterPoint Houston to

self-insure for such losses through an uninsured property loss reserve, as discussed by Mr. Wilson.

Q. HAS THE COMPANY RECEIVED ANY INSURANCE PROCEEDS RELATED TO HURRICANE HARVEY RESTORATION?

A. In 2017, flooding from Hurricane Harvey caused approximately $117 million of damage to CenterPoint Houston's assets, including substations, electric vaults, transmission and distribution lines, and office facilities. This significant amount was offset by insurance proceeds of $23.6 million. The Company has settled all electric restoration insurance claims related to Hurricane Harvey and does not expect to receive additional insurance settlements.

VIII. TREASURY DEPARTMENT ORGANIZATION AND OPERATING COSTS

Q. WHAT TOPICS DO YOU DISCUSS IN THIS SECTION OF YOUR TESTIMONY?

A. I support the reasonable and necessary costs charged to CenterPoint Houston for the services provided to CenterPoint Houston by the CNP Treasury Department.

Q. PLEASE DESCRIBE THE TREASURY ORGANIZATION AND ITS FUNCTIONS.

A. The Treasury organization provides financial services for CNP and its subsidiaries, including insurance risk management, treasury operations, commercial risk management, investor relations and investor services. The Treasury Department reports to the Chief Financial Officer of CNP, who has overall responsibilities for the following functions for CNP and its subsidiaries:

- Accounting;

- Tax;
- Treasury; and
- Strategic and Financial Planning.

Q. WHAT COSTS ARE YOU SUPPORTING IN THIS TESTIMONY?

A. I support approximately $27.1 million of direct operation and maintenance costs that the Treasury Department billed to CenterPoint Houston during the test year. Of the $27.1 million, approximately $27.0 million related to payments to third parties in connection with insurance programs. Another $46,000 related to New York Stock Exchange ("NYSE") listing fees for CenterPoint Houston debt securities.

I also support the reasonableness of approximately $6.4 million of costs that were billed to CenterPoint Houston for services provided by Service Company during the test year. Ms. Townsend discusses the role of the Service Company, as well as the methodologies used to assign costs to CenterPoint Houston. I explain that the costs billed to CenterPoint Houston for the services provided by the Treasury department during the test year are necessary and reasonable.

A. Insurance Risk Management

Q. DOES THE TREASURY ORGANIZATION PROVIDE INSURANCE RELATED SERVICES TO CENTERPOINT HOUSTON?

A. Yes. IRM is responsible for protecting the corporation's assets through a comprehensive program of risk retention, risk transfer, risk financing and risk mitigation. It leverages long-standing relationships with global insurance companies and underwriters and brokers to optimize coverages. IRM works

collaboratively with departments throughout the Company to ensure that accurate information is communicated to underwriters. Modeling and analytics on major exposures is performed to understand loss probability and projected losses. The data is used to determine appropriate retention levels and limits of liability. IRM participates in industry and insurance company advisory groups exchanging best practices for risk mitigation.

Q. WHAT WERE THE INSURANCE COSTS IN THE TEST YEAR?

A. $27.0 million in insurance costs were directly billed to CenterPoint Houston during the test year. These costs consist of policy premiums, losses, legal fees and insurance settlements, and are associated with the following insurance coverage:

- $9.3 million to General Liability
- $8.4 million to Excess Liability
- $7.6 million to Property
- $1.1 million to Workers Compensation
- $0.6 million to Auto Liability, Crime, Umbrella Liability and Other

Q. ARE INSURANCE COSTS EXPECTED TO CHANGE IN 2019?

A. Yes. Because of changing market conditions, driven by wildfires in the western states and pipeline safety events in the Northeast, we expect excess liability and property insurance to increase in 2019.

Q. DOES THE TREASURY ORGANIZATION UNDERTAKE EFFORTS TO CONTROL INSURANCE COSTS?

A. Yes. Insurance expenses, including premium and claims payments, are controlled through best practices of risk mitigation, risk transfer, risk retention and risk

financing. Cost efficiencies and economies of scale are realized through participation in the large insurance programs applicable to all CNP operations. Specific techniques IRM employs to hold down costs include the following:

- Aggressive negotiating of premium costs by insurance brokers retained by CNP;
- Obtaining competitive quotes from insurers, where applicable;
- Evaluating cost against benefit of higher limits;
- Modeling and analytics used for evaluating appropriate limits and retention;
- Facilitating face-to-face underwriter meetings with CNP's operational leadership;
- Proactively managing claim costs;
- Conducting loss control programs and risk assessment surveys; and
- Locking in the rate on multiple year policies when advantageous.

B. Investor Relations

Q. PLEASE DESCRIBE THE ORGANIZATIONAL STRUCTURE OF THE INVESTOR RELATIONS DEPARTMENT AND ITS REPORTING RELATIONSHIP.

A. The Investor Relations Department resides in the Service Company. The Treasurer oversees Investor Relations. The Director of Investor Relations and Manager of Investor Relations are both fully dedicated to Investor Relations. Finally, an Executive Assistant supports both Treasury and Investor Relations. The Treasurer reports to the Executive Vice President and Chief Financial Officer of CNP. The Director of Investor Relations and Executive Assistant report directly to the Treasurer.

Q. PLEASE DESCRIBE THE FUNCTION OF THE INVESTOR RELATIONS DEPARTMENT.

A. Investor Relations serves as the liaison between CNP and its subsidiaries and the investment community. The investment community includes current and prospective equity and fixed-income investors as well as debt and equity analysts. The primary functions of Investor Relations are to:

- Educate the investment community about the value inherent in the equity and debt securities offered by CNP and its subsidiaries as a means to competitively compete for capital;
- Provide feedback from the investment community to CNP's Board of Directors and Management, including Management of CenterPoint Houston;
- Interact directly with analysts and investors and coordinate any direct interaction between the Company's senior management and the institutional investment community in order to establish and maintain a relationship between the investor and CNP and its subsidiaries;
- Prepare management for meetings, conferences and conference calls by developing presentations, drafting scripts and potential questions and answers, and providing background information on the financial institutions with which they will meet;
- Facilitate periodic conference calls and webcasts with analysts and investors, allowing management to discuss earnings results and other important matters affecting investors;
- Generally, discuss all aspects of CNP's business alongside management, including that of CenterPoint Houston; and
- Track and analyze information on an ongoing basis, including market performance, industry trends, peer data, as well as third-party reports concerning CNP, its peers and the energy industry as a whole.

Q. WHAT ARE SOME OF THE MAIN ACTIVITIES OF INVESTOR RELATIONS?

A. Some of the main activities of Investor Relations include:

- Speaking with investors and analysts by phone or in face-to-face meetings to explain and answer questions about CNP's public disclosures regarding all aspects of CNP and its subsidiaries, including CenterPoint Houston;

- Drafting, for management review, the earnings press releases and conference call remarks, which always discuss CenterPoint Houston. Investor Relations also reviews non-earnings press releases, SEC documents and other disclosures issued by CNP and its subsidiaries. A key focus of this review is on quarterly Forms 10-Q and the annual Form 10-K, which are filed by CNP and its externally-financed subsidiaries, including CenterPoint Houston;

- Coordinating all interactions between Company management and the investment community, including investment house and industry conferences, face-to-face meetings and conference calls. The Director and/or the Manager are present at each one of those interactions and develop and update the presentations given by management to investors and analysts, which always include an update on the key activities and financial performance of CenterPoint Houston;

    - In 2018, Investor Relations prepared management for in-person meetings with approximately 265 analyst and institutional investment firms. These interactions occurred primarily during seven conferences and two non-deal roadshows.

    - In addition, Investor Relations participated in investor calls during CNP's Series A, Series B and common equity offerings during the third quarter of 2018.

- Maintaining and providing timely updates to the Investor Relations' section of the corporate website; and

- Investor Relations also completes various financial market analyses, as needed or requested.

Q. WERE THE INVESTOR RELATIONS SERVICES PROVIDED TO CENTERPOINT HOUSTON DURING THE TEST YEAR REASONABLE AND NECESSARY?

A. Yes. CNP, like all publicly traded companies, is dependent upon equity and debt investors for the financing of its assets, including those of its subsidiary, CenterPoint Houston. Ready access to the equity and debt markets, on a

competitive basis, is critical for CenterPoint Houston to finance the long-term growth of its system as well as the capital improvements necessary to maintain safe and reliable service for customers. Open, consistent and timely communication with the investment community, in compliance with federal disclosure requirements, the Federal Energy Regulatory Commission's affiliate code of conduct parameters, the NYSE's policies, practices and procedures, CNP's code of ethics and the National Investor Relations Institute's standards of practice, is essential to building the knowledge base of investors and building investor confidence in CNP and its management. Investor Relations fosters these relationships resulting in greater confidence in CNP, allowing it to be more competitive in acquiring the capital it needs to finance itself and its subsidiaries, including CenterPoint Houston. By providing as much information as possible to investors, and by understanding and addressing their expectations and concerns, CenterPoint Houston is able to access the necessary capital it needs to grow and maintain its system at the lowest reasonable cost to its customers.

Q. ARE THERE BENEFITS TO HAVING A CENTRALIZED INVESTOR RELATIONS FUNCTION?

A. Yes. Having a centralized Investor Relations function is important for efficiency, cost containment and consistency of strategic and financial communications. If each subsidiary of CNP maintained a separate Investor Relations function, redundancy of people and cost would be likely. The quality of the relationships with analysts and investors could deteriorate if they had to make multiple calls to

different people within the same corporation to have all of their questions related to various subsidiaries of that corporation answered.

Having a centralized Investor Relations structure also ensures there is consistency of investor messaging, further strengthening the Company's compliance with various complex disclosure rules and regulations, including SEC Regulation Fair Disclosure ("Reg FD"), Sarbanes-Oxley, and SEC Regulation G ("Reg G"). Reg FD, which took effect on October 23, 2000, is a disclosure rule, adopted by the SEC that addresses selective disclosure. Reg FD provides that when a company discloses material non-public information to shareholders and securities market professionals who may trade on the basis of the information, it must make public disclosure of that information. Reg FD is designed to promote the full and fair disclosure of information. Reg G is an SEC disclosure regulation directed by the Sarbanes-Oxley Act of 2002, which requires public companies that disclose or release non-GAAP (generally accepted accounting principles) financial measures to include in that disclosure or release a reconciliation of the disclosed non-GAAP financial measure to the most directly comparable GAAP financial measure. Having a centralized Investor Relations function with professionals who understand the disclosure rules and regulations and who are intimately familiar with all of the public disclosures that the company makes about all of its operations mitigates potential disclosure violations.

In addition, a centralized Investor Relations function is more efficient in that it allows professionals within CNP who are knowledgeable about all aspects of the company's business, including CenterPoint Houston, to answer the multitude

of analyst and investor questions in one call or meeting without having to route them through others. By having a centralized Investor Relations staff, the Chief Executive Officer, the Chief Financial Officer, and other members of senior management are able to maintain their strategic focus and the business units, including CenterPoint Houston, do not have to allocate personnel or divisional leadership to investor-related communication.

Q. DOES INVESTOR RELATIONS UTILIZE EXTERNAL VENDORS IN PROVIDING SERVICES TO CENTERPOINT HOUSTON?

A. Yes. Aside from being listed on the NYSE, Investor Relations uses a number of vendors that offer specialized services. These services include providers of news, market information, sell side analyst data reports, distribution of annual reports, press releases, conference calls, hosting the Investor Relations section of the corporate website, as well as handling Investor Relations webcast services. All of these services are essential to effectively fulfilling our role as the liaison between CNP and the investment community. Virtually all large publicly traded companies utilize these types of vendors in their investor relations activities. To duplicate the services in-house would be inefficient and more expensive. Investor Relations evaluates each vendor's quality of service and pricing to ensure that we are fully utilizing the services at the least possible cost.

Q. DOES INVESTOR RELATIONS PROVIDE SERVICES TO ANY NON-AFFILIATED ENTITIES?

A. No. Investor Relations provides services only to CNP and its subsidiaries, including CenterPoint Houston.

C. Investor Services

Q. PLEASE DESCRIBE THE ORGANIZATIONAL STRUCTURE OF THE INVESTOR SERVICES DEPARTMENT AND ITS FUNCTION.

A. The Investor Relations Department resides in the Service Company. The Director of Investor Relations and Manager of Investor Relations oversee the Investor Services function in addition to their Investor Relations responsibilities. These duties include managing the relationship with Broadridge Corporate Issuer Solutions, Inc. ("Broadridge"), our third-party transfer agent. Broadridge performs transfer agent and registrar services on behalf of CNP. Broadridge maintains all shareholder information, does compliance reporting on behalf of shareholders, and manages the operations, administration and planning of programs for investors.

Q. HOW DOES INVESTOR SERVICES CONTROL RECORDKEEPING, PERSONNEL AND MAILING COSTS?

A. Investor Services controls recordkeeping, personnel, and mailing costs in a number of ways:

Recordkeeping Cost. Investor Services outsourced the recordkeeping component of its operations in early 2016 to Broadridge. The third-party vendor provides cost-effective recordkeeping due to its scale.

Personnel Cost. As noted earlier, Investor Services outsourced a majority of CNP's investor services functions in early 2016, which reduced personnel costs. CNP utilizes its Investor Relations Manager to handle a majority of the investor services functions and also utilizes a Treasury Manager for some functions.

Mailing Cost. Investor Services continues to encourage automatic deposits for any dividend checks and electronic delivery of statements. Shareholders can

utilize Broadridge's website to manage their account electronically, including changing dividend preferences and investment preferences. These actions would previously have to be done via mail or phone.

Q. ARE THE COSTS OF PROVIDING THE INVESTOR SERVICES FUNCTION BY A THIRD PARTY COMPARABLE TO WHAT IT WOULD COST TO HAVE THE SAME WORK DONE IN HOUSE?

A. No. The costs incurred by the third party retained by Investor Services are less than those the Service Company would incur if the services were provided in house. The cost component was a major factor in the decision to outsource this function. Outsourcing was the most cost-efficient method to provide the services.

Q. WERE THE SERVICES THAT INVESTOR SERVICES PROVIDED TO CENTERPOINT HOUSTON DURING THE TEST YEAR REASONABLE AND NECESSARY?

A. Yes. As the subsidiary of a publicly traded entity, CenterPoint Houston requires the use of Investor Services to maintain all shareholder information, engage in compliance reporting on behalf of shareholders, and manage the operations, administration and planning of programs for investors. As with all Service Company services, CenterPoint Houston benefits from the centralized nature of Investor Services within Service Company through its efficiency and cost containment.

D. Commercial Risk

Q. PLEASE DESCRIBE THE COMMERCIAL RISK FUNCTION.

A. Commercial Risk ("Enterprise Risk Management" or "ERM") manages risk assessments for the CNP business units including CenterPoint Houston. ERM

provides guidance and standards to identify and respond to enterprise risks. These activities include assessments using risk tools, developing and monitoring action plans, and providing guidance and advice to management and project teams.

Q. PLEASE DESCRIBE THE REPORTING STRUCTURE OF THE COMMERCIAL RISK FUNCTION.

A. The Commercial Risk team reports to the Treasurer and consists of team members responsible for ERM, risk analytics and corporate response.

Q. WERE THE SERVICES PROVIDED TO CENTERPOINT HOUSTON DURING THE TEST YEAR BY ERM REASONABLE AND NECESSARY?

A. Yes. ERM helps CenterPoint Houston manage risk and to respond to events that may impair CenterPoint Houston's ability to provide safe and reliable electric service. By reducing risk, ERM helps control costs that would otherwise be necessary to respond to the risk factors.

E. Treasury Operations

Q. WHAT SERVICES DOES THE TREASURY OPERATIONS GROUP PROVIDE FOR CENTERPOINT HOUSTON?

A. Treasury Operations secures cost-effective funding of short-term and long-term capital requirements for CNP and its subsidiaries, manages existing long-term capital to optimize the cost of capital in relation to the life and risk profile of the assets and preserves financial flexibility by ensuring ready access to various sources of short-term and long-term capital. This group is also responsible for optimizing returns on the temporary investment of cash and for developing and maintaining relationships with banks, rating agencies and other members of the financial community. This group also administers corporate and benefits trust investment

activities and maintains relationships with corporate and benefit trust fund managers.

F. Reasonableness of Treasury Organization Costs

Q. HOW WERE THE TREASURY COSTS BILLED TO CENTERPOINT HOUSTON?

A. As described in the testimony of Ms. Townsend, the methodology used to bill costs to CenterPoint Houston varies depending upon the expense incurred. Ms. Townsend describes each allocation methodology. Costs associated with the Treasury Department are allocated to CenterPoint Houston based on the "composite ratio." Costs associated with insurance are directly billed to CenterPoint Houston when possible and otherwise allocated to CenterPoint Houston using the "assets" or "operating expense" methods.

Q. HOW DOES THE TREASURY DEPARTMENT MONITOR ITS EXPENSES TO ENSURE COSTS INCURRED ARE REASONABLE AND NECESSARY AND THAT COSTS ARE PROPERLY ASSIGNED?

A. The Treasury Department, including Insurance Risk Management, Investor Relations, Investor Services, Commercial Risk, and Treasury Operations, uses CNP's annual budget process, described in the testimony of Ms. Townsend, to determine expected expenditures for the coming year. As part of this process, management reviews and approves the annual budget. The Treasurer reviews and approves invoices and monitors actual expenditures against the budget each month.

Q. ARE THE COSTS CHARGED TO CENTERPOINT HOUSTON FOR TREASURY SERVICES REASONABLE AND NECESSARY?

A. Yes. The cost to CenterPoint Houston for Treasury services is no higher than the cost to provide the same service to any other subsidiary of CNP. Moreover, the cost to CenterPoint Houston is the actual cost of the service provided. Finally, none of the costs that the Treasury Department assigns to CenterPoint Houston include costs that are nonrecoverable under 16 Tex. Admin. Code § 25.231(b)(2).

Q. DO YOU HAVE ANY CONCLUDING COMMENTS REGARDING THE COSTS OF THE TREASURY ORGANIZATION?

A. Yes. The functions and services that are performed by the Treasury Department are essential functions that must be performed by any large, publicly owned corporation today, not just utilities. They are necessary for CenterPoint Houston to be able to provide the service that it does to the public, and the costs assigned to CenterPoint Houston for these functions and services are reasonable.

IX. CONCLUSION

Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. CenterPoint Houston requests that the Commission approve a WACC of 7.39%, which is calculated using a capital structure composed of 50.0% equity and 50.0% debt, a 4.38% cost of debt, and a 10.40% ROE. A capital structure with 50.0% equity is reasonable in light of the business and financial risks that CenterPoint Houston faces, including forecasts of very large capital expenditures and reduced cash flow attributable to the TCJA. As my Table 6 shows, even with a 50.0% equity ratio and the 10.40% ROE supported by Mr. Hevert, CenterPoint Houston's credit metrics will remain near the threshold for a ratings downgrade. Any such

downgrade would raise the costs of both debt and equity, to the detriment of the Company's customers.

I also show that third-party insurance is not available to insure CenterPoint Houston's transmission and distribution assets on commercially reasonable terms. Accordingly, it is necessary for CenterPoint Houston to self-insure a portion of its assets.

Finally, I support the reasonableness and necessity of costs directly billed to or allocated to the Treasury department. The functions and services performed by the Treasury Department are essential for any large, publicly owned corporation, such as CNP, and the costs assigned to CenterPoint Houston for these functions and services are reasonable.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

STATE OF TEXAS §
§
COUNTY OF HARRIS §

AFFIDAVIT OF ROBERT B. MCRAE

BEFORE ME, the undersigned authority, on this day personally appeared Robert B. McRae who having been placed under oath by me did depose as follows:

1. "My name is Robert McRae. I am of sound mind and capable of making this affidavit. The facts stated herein are true and correct based upon my personal knowledge.

2. I have prepared the foregoing Direct Testimony and the information contained in this document is true and correct to the best of my knowledge."

Further affiant sayeth not.

Robert B. McRae

SUBSCRIBED AND SWORN TO BEFORE ME on this 20th day of March, 2019.

TANIA C RENE
NOTARY ID #12997581-0
My Commission Expires
September 29, 2022

Notary Public in and for the State of TX

My commission expires: 9/29/22

Robert McRae, CTP

Robert.mcrae@centerpointenergy.com

EDUCATION

Kelley School of Business, Indiana University, Bloomington, IN — May 2011
Master of Business Administration, major in Finance, GPA: 3.8, GMAT: 710

The Marriott School of Management, Brigham Young University, Provo, UT — April 2009
Bachelor of Science, major in Management, emphasis in Finance, major GPA 3.72

University of Idaho, Moscow, ID — June 2018
Utility Executive Course

EXPERIENCE

CenterPoint Energy, Houston, TX — May 2010 – current

Assistant Treasurer, Corporate Treasury, (7/15 – current)

- Led integration planning efforts for entire Finance function regarding the $6 billion CNP/VVC merger
- Co-led a $5.0 billion Bridge Facility syndication to facilitate the CNP/VVC merger
- Manage and execute treasury functions including long and short-term financing activities, cash management, bank relationship management, benefit plan administrator and compliance reporting
- Manage the debt service and compliance activities of more than $13 billion of external debt
- Led or participated in 7 bond offerings aggregating $2.7 billion
- Led multiple transactions to restate and/or amend the company's revolving credit agreements increasing the facilities from $2.1 billion to the current $5.1 billion
- Amended the company's commercial paper agreements across two programs and added five dealers to better facilitate a strategic shift in the floating/fixed rate debt mix
- Created and implemented an interest rate risk management program for pre-issuance hedging
- Presented Treasury activity and the five-year financing plan to the Board of Directors and/or Finance Committee
- Developed written testimony for rate cases and similar proceedings before public utility commissions regarding capital structure, cost of debt, and other financing matters
- Maintained relationships with and provided annual presentations to S&P, Moody's, and Fitch
- Updated and obtained Finance Committee approval for a new short-term investment policy
- Participated in multi-functional teams evaluating M&A and strategic reviews

Manager, Investor Relations, (11/12 – 6/15)

- Communicated with investment community the formation and subsequent IPO of a $10 billion MLP joint venture involving two Midstream business segments and a third party
- Collaborated with a cross functional team the planning and execution of company's first Analyst Day. Responsible for the strategic messaging of the largest business unit
- Facilitated the IR training of a new Director of Investor Relations
- Prepared and presented weekly/monthly performance reports and quarterly peer earnings reports
- Drafted Investor Relation presentations for the Board of Directors' Finance Committee meetings
- Developed earnings call scripts while interacting with Operations, Finance, Accounting executives
- Managed onsite and offsite investor meetings with and without Executive management
- Designed financial models to determine the fair value based on sum-of-the parts and multiples analysis
- Utilized ThomsonOne, S&P CapIQ, and SNL for market information/research

Lead Analyst, Corporate Strategic Planning, (5/11 – 10/12)

- Facilitated strategic planning workshops for the executive management of Gas Operations and Finance. Composed the Finance strategic plan in 2011 and 2012 and managed their initiative progress process
- Produced and presented the Natural Gas Market Outlook report to executive management; Report helps set natural gas assumptions for the 5-year plan and as regulatory justification of gas purchases
- Coordinated the MBA summer internship program; Managed and mentored three interns; Selected and monitored intern projects; Designed and administered the summer's activities and events

- Developed the strategy and financial model for a proposed expansion of an existing business into a new market

MBA Summer Associate, Corporate Strategic Planning, (5/10 – 8/10)

- Identified 299 potential natural gas local distribution M&A targets and created customizable tool that ranks targets based on attractiveness; tool still in use today
- Performed M&A analysis of competing Fortune 500 company concerning a potential asset swap; presented recommendation to executives and recommendation was followed

GEICO (Government Employees Insurance Company) Macon, GA September 1999 – June 2006
Programmer/Analyst I, (6/01-10/03), *II* (10/03 – 4/05), and *III* (4/05 – 6/06)

- Produced critical ad-hoc reports for Treasury dept. identifying potential legal and financial liabilities
- Coordinated nationwide user acceptance testing for the largest department deliverable of 2003; project saved approximately $600,000 per year
- Designed and implemented new check clearing process which saved approximately $360,000 per year

Licensed Insurance Counselor, (9/99-6/01)

ADDITIONAL

- Certifications: Certified Treasury Professional (CTP)

EXHIBIT RBM-2 – MOODY'S CRITERIA

IS CONFIDENTIAL

A copy of this material will be provided only after execution of a certification to be bound by the draft protective order set forth in Section VII of this Rate Filing Package or a protective order issued in this docket.

EXHIBIT RBM-3 – S&P CRITERIA

IS CONFIDENTIAL

A copy of this material will be provided only after execution of a certification to be bound by the draft protective order set forth in Section VII of this Rate Filing Package or a protective order issued in this docket.

EXHIBIT RBM-4 – RRA PUCs 2.28.19

IS CONFIDENTIAL

A copy of this material will be provided only after execution of a certification to be bound by the draft protective order set forth in Section VII of this Rate Filing Package or a protective order issued in this docket.

EXHIBIT RBM-5 – RRA RATE CASES 1.31.19

IS CONFIDENTIAL

A copy of this material will be provided only after execution of a certification to be bound by the draft protective order set forth in Section VII of this Rate Filing Package or a protective order issued in this docket.

ROBERT B. McRAE WORKPAPERS:

WP RBM-1 T&D Insurance.pdf

Jackson, Robert W.

From:	Jackson, Robert W.
Sent:	Wednesday, March 13, 2019 4:17 PM
To:	'GWilson@LewisEllis.com'
Cc:	Andrea Stover (andrea.stover@bakerbotts.com)
Subject:	CenterPoint Houston T&D Insurance Lack of Availability -- CONFIDENTIAL
Attachments:	T&D INSURANCE MARKET_UPDATE 030519.pptx

Greg:
Attached is the document which CenterPoint Houston's risk manager obtained, describing the lack of availability of electric transmission and distribution property insurance. Pending further instructions, please treat this information as Confidential.
Thanks.

CenterPoint Energy

Robert W. Jackson
Manager of Regulatory Affairs | Regulatory Portfolio Management Organization
713.207.5584 w.
CenterPointEnergy.com

McGRIFF, SEIBELS & WILLIAMS, INC.

POWER MARKET UPDATE

INSURANCE BROKERAGE SERVICES

March 5th, 2019

McGRIFF, SEIBELS & WILLIAMS, INC.

CenterPoint Energy

Other Miscellaneous

Transmission and Distribution Lines

- There continues to be no viable market place for meaningful T&D coverage
  - Insurance companies do not have reinsurance to protect them so explicitly exclude the coverage on property policies
  - A few syndicates in London may write small net lines but available capacity is minimal – maybe $20MM - $25MM excess of large retentions
  - No US markets will offer capacity
  - With rare exception insurance market in general consider T&D lines uninsurable
- AEGIS product that was being promoted in 2018 was not successful
  - MSW are aware of no utilities that purchased the product
  - Limited capacity (~$25MM), extremely high rate on line (15-20%) and large attachment points
  - Not meaningful protection for large highly exposed utility companies
- Parametric Products are available
  - Swiss Re and other Alternative Risk companies
  - Minimum dual trigger products (wind speed thresholds and geographic touch points = varying payout amounts)
  - Similar shortcomings to above (limited capacity and high rate on line type products)
  - East coast example: up to 25% rate on line for $10MM in occurrence limits
  - Max. payout achieved if wind field measured at specific locations exceed 90 mph
  - Allows for one reinstatement of the limit

APPLICATION OF CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC FOR AUTHORITY TO CHANGE RATES	**§ § §**	**PUBLIC UTILITY COMMISSION OF TEXAS**

DIRECT TESTIMONY

OF

GREGORY S. WILSON

ON BEHALF OF

CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC

April 2019

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LIST OF EXHIBITS

EXECUTIVE SUMMARY OF GREGORY S. WILSON

The service territory of CenterPoint Energy Houston Electric, LLC ("CenterPoint Houston" or the "Company") has been impacted in recent years by weather events that have resulted in significant outages and restoration efforts. To support adequate preparation for such losses, my testimony offers an independent opinion of the reasonableness of CenterPoint Houston's approach with respect to protecting its Transmission and Distribution assets through self-insurance.

My testimony:

- addresses the purpose of a self-insurance reserve;
- describes how a self-insurance reserve operates;
- provides an estimate of the annual accrual necessary to provide for expected property losses that are not covered by insurance along with a recommended time period over which this accrual is to be made;
- provides an estimate of a target amount to accumulate in the self-insurance reserve along with a recommended time period over which the accrual to reach the target amount is to be made; and
- includes a cost benefit analysis demonstrating that self-insurance at the levels proposed by CenterPoint Houston is a lower cost alternative to purchasing insurance and is in the public interest, consistent with 16 Texas Administrative Code § 25.231(b)(1)(G) ("TAC").

This information, in addition to my support materials, demonstrates that CenterPoint Houston's requested self-insurance reserve is reasonable and necessary given the lack of reasonably-priced commercial insurance. Thus, the costs associated with funding a self-insurance reserve should be included in CenterPoint Houston's cost of service.

DIRECT TESTIMONY OF GREGORY S. WILSON

I. INTRODUCTION AND QUALIFICATIONS

Q. PLEASE STATE YOUR NAME, OCCUPATION, BUSINESS AFFILIATION, AND BUSINESS ADDRESS.

A. My name is Gregory S. Wilson. I am a consulting actuary specializing in the area of property-casualty actuarial matters. I am a Vice President and Principal at Lewis & Ellis, Inc. ("L&E"). My business address is 700 Central Expressway South, Suite 550, Allen, Texas 75007.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL AND EMPLOYMENT BACKGROUND.

A. I received a Bachelor of Science degree in applied mathematics from the University of Rhode Island in 1976.

In 1992, after completing all of the required examinations, I became a Fellow of the Casualty Actuarial Society, the highest designation a property-casualty actuary can attain. This designation is obtained through a rigorous process involving separate examinations on topics such as mathematics, probability and statistics, theory of credibility, theory of risk and insurance, economics, insurance coverages, ratemaking, loss reserving, insurance accounting and regulation, and individual risk rating. I am also a Member of the American Academy of Actuaries.

Following college, I was employed by Amica Mutual Insurance Company until 1994, at which time I was a vice president serving as chief actuary and supervising the actuarial department.

In 1994, I joined PricewaterhouseCoopers, LLP where I provided actuarial consulting services to a wide variety of clients including insurance companies, state insurance regulators, self-insured entities, and non-insurance corporations. I joined L&E in 2001, where I continue to provide actuarial consulting services to a wide variety of clients. My resume is attached to this testimony as Exhibit GSW-1.

Q. WHAT IS AN ACTUARY?

A. An actuary is a business professional who estimates the financial implications of future contingent events or risk, which in the context of a rate case such as this one is the risk of damage to the utility's facilities and infrastructure due to currently unknown (or contingent) future events. Actuaries use mathematics, statistics, and financial theory to help manage such risks. In this proceeding, my analysis of future financial consequences is performed in accordance with the Actuarial Standards of Practice adopted by the American Academy of Actuaries, as well as the Statement of Principles Regarding Property and Casualty Loss and Loss Adjustment Expense Reserves adopted by the Casualty Actuarial Society.

Q. HAVE YOU TESTIFIED BEFORE THE PUBLIC UTILITY COMMISSION OF TEXAS ("COMMISSION")?

A. Yes. I submitted testimony addressing self-insurance reserve issues similar to those that I address in this testimony in Docket Nos. 16705, 20150, 22356, 30123, 33309, 34800, 37364, 37744, 38339, 38480, 39896, 40606, 41791, 43950, 44704, 44746, 46957, 48371 and 48401. I have also testified on self-insurance issues in conjunction with a utility rate filing before the Missouri Public Service Commission.

II. PURPOSE AND SUMMARY OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The general purpose of my testimony is to offer an independent opinion of the reasonableness of the approach CenterPoint Energy Houston Electric, LLC ("CenterPoint Houston" or the "Company") proposes to take with respect to protecting its Transmission and Distribution ("T&D") assets through self-insurance. The specific purpose of my testimony is: (1) to estimate the annual accruals needed for a self-insurance reserve for property damage losses incurred by CenterPoint Houston not covered by insurance, in accordance with Section 36.064 of the Public Utility Regulatory Act; and (2) to estimate a target amount to accumulate in the self-insurance reserve along with a recommended time period over which these accruals are to be made.

My testimony also includes a cost benefit analysis demonstrating that self-insurance at the levels proposed by CenterPoint Houston is a lower cost alternative to purchasing insurance and is in the public interest, consistent with 16 TAC § 25.231(b)(1)(G).

Q. WHAT DOES 16 TAC § 25.231(b)(1)(G) PROVIDE REGARDING SELF-INSURANCE?

A. This rule provides as follows:

> Accruals credited to reserve accounts for self-insurance under a plan requested by an electric utility and approved by the commission. The commission shall consider approval of a self insurance plan in a rate case in which expenses or rate base treatment are requested for such a plan. For the purposes of this section, a self insurance plan is a plan providing for accruals to be credited to reserve accounts. The reserve accounts are to be charged with property and liability losses which occur, and which could not have been reasonably anticipated and included in operating and maintenance

> expenses, and are not paid or reimbursed by commercial insurance. The commission will approve a self-insurance plan to the extent it finds it to be in the public interest. In order to establish that the plan is in the public interest, the electric utility must present a cost benefit analysis performed by a qualified independent insurance consultant who demonstrates that, with consideration of all costs, self-insurance is a lower-cost alternative than commercial insurance and the ratepayers will receive the benefits of the self insurance plan. The cost benefit analysis shall present a detailed analysis of the appropriate limits of self insurance, an analysis of the appropriate annual accruals to build a reserve account for self insurance, and the level at which further accruals should be decreased or terminated.

Q. WHAT HAS THE COMMISSION PREVIOUSLY ESTABLISHED AS THE PROPERTY INSURANCE EXPENSE AND RESERVE TARGET FOR CENTERPOINT HOUSTON?

A. The Commission determined in Docket No. 38339 that CenterPoint Houston's property reserve accrual shall be $4.15 million annually. The Commission also set a reserve target of $13.38 million.

Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS.

A. As shown on Exhibit GSW-2 to my direct testimony, I propose an annual accrual of $7.685 million and a new target property insurance reserve of $6.55 million. The accrual is composed of two elements. The first is $3.575 million to provide for average annual expected operations and maintenance ("O&M") losses from events where the O&M expense is greater than $100,000 and the total event loss does not exceed $100 million. However, because my analysis excludes certain hurricane losses under $100 million which the Company sought to recover by means other than the self insurance reserve, the $3.575 million would not be expected to cover losses of similar magnitude. As I explain subsequently, the $3.575 million annual accrual is calculated using a Monte Carlo simulation run on the loss history of the

Company. The second is $4.11 million accrued annually for three years to achieve the target reserve of $6.55 million from the current reserve deficit level of ($5.791 million).

III. SELF-INSURANCE RESERVE BACKGROUND

Q. PLEASE STATE THE PURPOSE OF CENTERPOINT HOUSTON'S SELF-INSURANCE RESERVE AND EXPLAIN HOW IT WOULD OPERATE.

A. The purpose of CenterPoint Houston's self-insurance reserve is to provide for accruals to be credited to a reserve account to cover occurrences resulting in T&D losses of more than $100,000 in O&M expenses, as discussed in the testimony of Company witness Kristie L. Colvin.

Each year, an amount would be accrued in the self-insurance reserve to provide for losses expected to occur in the calendar year. In addition to this amount, an accrual would be made to raise the self-insurance reserve to a level that would serve as a financial buffer in the event that actual losses exceed the accrued amount of expected annual losses. Accruals would be made until the reserve reaches the recommended target level, at which point contributions to the reserve would reduce to the lower of annual expected losses or actual losses.

Q. WHAT HAPPENS IF THE ANNUAL AGGREGATE LOSSES DO NOT EQUAL THE AMOUNT ACCRUED IN ANY GIVEN YEAR?

A. If the annual aggregate losses exceed the amount accrued in any given year, the remaining reserve, if sufficient, would be drawn upon to provide the needed additional amounts. If the annual aggregate losses are less than the amount accrued

for that purpose, the excess annual accrual would remain in the self-insurance reserve, serving to bring the self-insurance reserve closer to its target level.

Q. WHY IS IT NECESSARY TO BUILD THE SELF-INSURANCE RESERVE UP TO A CERTAIN TARGETED LEVEL?

A. The range of expected losses from property damage covered by the self-insurance reserve varies considerably from year to year, as will the actual losses that CenterPoint Houston will incur. The self-insurance reserve needs to be sufficient to cover the losses for each year, knowing that any given year's actual losses may be very different from the average expected losses. Hence, a reserve large enough to allow for some variation in the annual aggregate amount of losses is needed.

Q. IS CENTERPOINT HOUSTON'S SELF-INSURANCE PLAN IN THE CUSTOMERS' INTEREST?

A. Yes. The self-insurance plan of CenterPoint Houston, allowed under 16 TAC § 25.231(b)(1)(G) is in the best interest of the Company's customers. As I discuss later in my testimony, it provides a lower cost alternative than purchasing commercial insurance for all losses. At the same time, the self-insurance plan provides utility rate stability by establishing a self-insurance reserve to absorb variations between expected and actual annual losses. As a result, absent an extreme catastrophic loss, customers' rates should not fluctuate due to different self-insurance losses from one year to the next.

IV. ANNUAL EXPECTED LOSSES

Q. WHAT AMOUNT SHOULD CENTERPOINT HOUSTON ACCRUE ANNUALLY IN THE SELF-INSURANCE RESERVE TO COVER THE EXPECTED LOSSES FOR EACH YEAR?

A. I recommend that CenterPoint Houston accrue $3.575 million annually to the self-insurance reserve. This amount is the expected value of the annual O&M losses incurred by CenterPoint Houston from all property loss events where the total O&M loss is more than $100,000, except those where the total loss is at least $100 million. The recommended amount of $3.575 million is calculated using a Monte Carlo simulation run on the loss history (shown on Exhibit GSW-3 to my direct testimony) of the Company.

Q. WHAT IS A MONTE CARLO SIMULATION?

A. A Monte Carlo simulation is a statistical technique incorporating a computer program to simulate loss experience over a longer period of time than the period captured in the available loss history.

The program simulates individual losses on an annual basis for CenterPoint Houston for 5,000 iterations of annual experience. A statistical distribution is estimated from CenterPoint Houston's trended loss experience and input into the model. The model is run 5,000 times, each time simulating a possible outcome. From these 5,000 iterations of simulated experience, I was able to determine that the average annual indicated loss over this period was $3.575 million.

Q. DID YOU MAKE ANY ADJUSTMENTS TO THE COMPANY'S HISTORICAL DATA?

A. Yes. Exhibit GSW-4 to my direct testimony contains an example showing how each historical loss was adjusted to reflect the current cost levels using the Handy-Whitman index of cost trends of electric utility construction for the South Central Region. The Handy-Whitman index data is a standard database used to measure cost changes for utility companies. The loss in the example occurred on March 29, 2017, for $572,264. The Handy-Whitman index as of January, 2017, was 672; as of July, 2017, it was 684. Interpolating between these two points to March 29, 2017, produces an expected index of 677.768. As of January, 2019, the Handy-Whitman index was 684. Thus, the change from March 29, 2017, to January, 2019, was 684 divided by 677.768 or 1.009 (0.9% increase). Multiplying the loss of $572,264 by 1.009 gives a cost-adjusted loss of $577,414. This procedure was used for each loss with an O&M cost of $100,000 or greater, but less than $100 million, that occurred during the experience period. This approach is reasonable because it adjusts historical costs to current dollar levels.

Q. WERE ANY OTHER ADJUSTMENTS MADE TO THE HISTORICAL DATA?

A. Yes. Actual losses from Hurricane Ike were securitized, and therefore removed from the historical data because recovery for those losses was not through the self-insurance reserve. In addition, losses from Hurricanes Rita and Harvey were removed from the data. The losses from those hurricanes were not over the $100 million threshold, but the losses were substantially more than what could be

reasonably covered through the self-insurance reserve (the losses from those storms were more than $25 million each). The Company has sought or is seeking to recover those costs via regulatory assets, without using the self-insurance reserve.

Q. WERE ANY ADJUSTMENTS MADE TO THE MONTE CARLO SIMULATION TO ADJUST FOR POTENTIAL SECURITIZATION?

A. Yes. As I mentioned above, the results from the simulation were adjusted by removing any simulated weather event where the loss exceeded $100 million, as these losses may be securitized.

V. TARGET RESERVE

Q. WHAT IS THE TARGET AMOUNT OF MONEY NEEDED TO PROVIDE FOR AN ADEQUATE SELF-INSURANCE RESERVE?

A. The recommended total target amount of the reserve is $6.55 million, which is the amount of O&M damage expected to result from a 25-year event with total losses under $100 million.

Q. WHY IS IT NECESSARY TO ACCRUE MORE TO THE SELF-INSURANCE RESERVE THAN THE $3.575 MILLION FOR EXPECTED ANNUAL LOSSES?

A. The $3.575 million accrual is intended to cover only the average annual expected loss from property damage. These losses can range from very low to millions of dollars in any one year. The property damage reserve needs to be built up to provide for extreme or catastrophic events in any one year.