Exhibit No. BGM-11
Dockets UE-160228/UG-160229
Witness: Bradley G. Mullins

BEFORE THE

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UITILITIES AND TRANSPORTATION COMMISSION	)	DOCKETS UE-160228 and UG-160229 (*Consolidated*)
Complainant,	)	
v.	)	
AVISTA CORPORATION d/b/a AVISTA UTILITIES	)	
Respondent.	)	

EXHIBIT NO. BGM-11

UPDATED ELECTRIC ATTRITION ALLOWANCE MODEL

September 19, 2016

WASHINGTON ELECTRIC ATTRITION ALLOWANCE STUDY

Calculation of Attrition Allowance Revenue Requirement
Test Period: Twelve Months Ending December 31, 2015
(000's of Dollars)

Line No.	Description	(a) Attrition Allowance Balances	(b) Revenue Growth Factor	(c) Attrition Allowance Study Results
1	2017 Rate Base	$ 1,347,093	1.015632	$ 1,326,360
2	Proposed Rate of Return			7.25%
3	Net Operating Income Requirement			$ 96,161
4	2017 Net Operating Income (at 2016 rates)	$ 98,268	1.015632	$ 96,756
5	2017 Rate of Return (at 2016 rates)			7.29%
6	2017 Net Operating Income Deficiency (Surplus)			$ (595)
7	Gross-up Conversion Factor			0.61986
8	2017 Attrition Allowance Revenue Deficiency			**$ (960)**
9	2017 Total General Business Revenues (at 2016 rates)			$ 502,803
10	Attrition Allowance 2017 Revenue Requirement			$ 501,843
11	Percent Revenue Requirement Change (vs. 2016)			**-0.19%**

Cost of Capital
Washington - Electric System
Twelve Months Ending December 31, 2015

Capital Structure

Component	Capital Structure	Cost	Weighted Cost
Total Debt	51.50%	5.51%	2.84%
Common	48.50%	9.10%	4.41%
Total	100.00%		7.25%

Revenue Conversion Factor
Washington - Electric System
Twelve Months Ending December 31, 2015

Line No.	Description	*Factor*
1	**Revenues**	*1.000000*
	Expense:	
2	Uncollectibles	0.005855
3	Commission Fees	0.002000
4	Washington Excise Tax	0.038507
5	Total Expense	*0.046363*
6	Net Operating Income Before FIT	*0.953637*
7	Federal Income Tax @ 35%	*0.333773*
8	**REVENUE CONVERSION FACTOR**	*0.619864*

2017 ELECTRIC ATTRITION ALLOWANCE REVENUE REQUIREMENT CALCULATION

Line No.	$000s / Description	Establish Attrition Base: 12ME 12.2015 AMA Commission Basis Report Totals [A]	(less) 12.2015 Normalized Net Power Supply Cost [B]	Deferred Dr/Cr; Reg. Amorts & Misc Adjs [C]	Remove November 2015 Storm Expenses [E]	Pro Forma Revenue Normalization Adjustment [F]	12ME 12.2015 AMA Escalation Base [G]	Esc. Rate [H]	Escalation Amounts: Non-Energy Cost Escalation Amount [G]*[H]=[I]	Trended 2017 Non-Energy Cost [G]+[I]=[J]	Add Back Power Costs: 2017 Pro-Formed Net Energy Cost [K]	Power Cost Incremental Load [L]	Results: 2017 Results: [J]+[K]+[L] = [O]
	REVENUES												
1	Total General Business	$ 497,229			$ -	$ (3,093)	$ 494,136	1.56%	$ 7,724	$ 501,860			501,860
2	Interdepartmental Sales	928			-	-	928	1.56%	15	943			943
3	Sales for Resale	49,505	(49,505)		-	-	-				37,211	(2,489)	34,722
4	Subtotal: Sales of Electricity	547,662	(49,505)		-	(3,093)	495,064		7,739	502,803	37,211	(2,489)	537,525
5	Other Revenue	16,920	(10,779)		-	$ (3,691)	2,450	0.00%	-	2,450	11,833	-	14,283
6	Total Electric Revenue	564,582	(60,284)	-	-	(6,784)	497,514		7,739	505,253	49,044	(2,489)	551,808
7	EXPENSES												
8	Production and Transmission												
9	Operating Expenses	140,485	(89,988)	468	-	-	50,965	1.27%	647	51,612	80,314	(196)	131,730
10	Purchased Power	85,107	(85,107)		-	-	-		-	-	70,369	827	71,196
11	Depreciation/Amortization	24,947			-	-	24,947	0.23%	57	25,004	-		25,004
12	Regulatory Amortization	5,974		(2,374)	-	-	3,600	0.00%	-	3,600	-		3,600
13	Taxes	14,133			-	-	14,133	10.99%	1,553	15,686			15,686
14	Subtotal: Production and Transmission	270,646	(175,095)	(1,906)	-	-	93,645		2,258	95,903	150,683	631	247,217
15	Distribution												
16	Operating Expenses	24,056			(2,303)	-	21,753	8.30%	1,805	23,558			23,558
17	Depreciation/Amortization	25,379			-	-	25,379	11.05%	2,804	28,183			28,183
18	Regulatory Amortizations	-			-		-		-	-			-
19	Taxes	27,448			-	(119)	27,329	9.08%	2,481	29,810		297	30,108
20	Subtotal: Distribution	76,883	-	-	(2,303)	(119)	74,461		7,091	81,552	-	297	81,850
21	Customer Accounting	12,363			-	(18)	12,345	8.57%	1,058	13,403		45	13,448
22	Customer Service & Information	1,454			-	-	1,454	0.00%	-	1,454			1,454
23	Sales Expenses	-			-	-	-		-	-			-
24	Administrative & General												
25	Operating Expenses	49,942		(955)	-	(6)	48,981	2.85%	1,396	50,376		15	50,392
26	Depreciation/Amortization*	21,503			-	-	21,503	17.19%	3,696	25,199			25,199
27	Taxes	-			-	-	-		-	-			-
28	Subtotal: A&G	71,445	-	(955)	-	(6)	70,484		5,092	75,576	-	15	75,591
29	Total Electric Expenses	432,791	(175,095)	(2,861)	(2,303)	(143)	252,389		15,499	267,888	150,683	989	419,560
30	OPERATING INCOME BEFORE FIT	131,791	114,811	2,861	2,303	(6,641)	245,125		(7,761)	237,365	(101,639)	(3,478)	132,248

**Note: Includes adjustment to reflect 50%/50% sharing of director fees based on Company's initial filing*

2017 ELECTRIC ATTRITION ALLOWANCE REVENUE REQUIREMENT CALCULATION

Line No.	$000s Description	Establish Attrition Base: 12ME 12.2015 AMA Commission Basis Report Totals [A]	Establish Attrition Base: (less) 12.2015 Normalized Net Power Supply Cost [B]	Establish Attrition Base: Deferred Dr/Cr; Reg. Amorts & Misc Adjs [C]	Establish Attrition Base: Remove November 2015 Storm Expenses [E]	Establish Attrition Base: Pro Forma Revenue Normalization Adjustment [F]	Establish Attrition Base: 12ME 12.2015 AMA Escalation Base [G]	Escalation Rate [H]	Escalation Amounts: Non-Energy Cost Escalation Amount [G]*[H]=[I] [I]	Escalation Amounts: Trended 2017 Non-Energy Cost [G]+[I]=[J] [J]	Add Back Power Costs: 2017 Pro-Formed Net Energy Cost [K]	Add Back Power Costs: Power Cost Incremental Load [L]	Results: 2017 Results: [J]+[K]+[L] = [O] [O]
31	Federal Income Tax												
32	Current Accrual	$ 4,968	$ 40,184	$ 1,002	$ 806	$ (2,324)	$ 44,636		$ (2,716)	$ 41,920	$ (35,574)	$ (1,217)	$ 5,129
33	Debt Interest	1	-	140	-	-	141		(654)	(513)			(513)
34	Deferred Income Taxes	29,492		-	-	-	29,492		-	29,492			29,492
35	Amortized ITC - Noxon	(129)		-	-	-	(129)		-	(129)			(129)
36	NET OPERATING INCOME	97,459	74,627	1,719	1,497	(4,317)	170,985		(4,391)	166,595	(66,065)	(2,261)	98,268
37	RATE BASE												
38	Plant in Service												
39	Intangible	144,970		-	-	-	144,970	1.68%	2,435	147,405			147,405
40	Production	779,441		-	-	-	779,441	0.81%	6,313	785,754			785,754
41	Transmission	401,700		-	-	-	401,700	8.16%	32,779	434,479			434,479
42	Distribution	895,055		-	-	-	895,055	10.60%	94,876	989,931			989,931
43	General	212,726		-	-	-	212,726	18.10%	38,503	251,229			251,229
44	Subtotal: Plant in Service	2,433,892	-	-	-	-	2,433,892		174,907	2,608,799			2,608,799
45	Accumulated Depreciation and Amortization												-
46	Intangible	(24,943)		-	-	-	(24,943)	1.68%	(419)	(25,362)			(25,362)
47	Production	(342,899)		-	-	-	(342,899)	0.81%	(2,777)	(345,676)			(345,676)
48	Transmission	(129,936)		-	-	-	(129,936)	8.16%	(10,603)	(140,539)			(140,539)
49	Distribution	(273,578)		-	-	-	(273,578)	10.60%	(28,999)	(302,577)			(302,577)
50	General	(73,050)		-	-	-	(73,050)	18.10%	(13,222)	(86,272)			(86,272)
51	Subtotal: Accumulated Depreciation and Amortization	(844,406)	-	-	-	-	(844,406)		(56,021)	(900,427)			(900,427)
52	Net Plant	1,589,486	-	-	-	-	1,589,486		118,886	1,708,372			1,708,372
53	Deferred Taxes	(317,860)		-	-	-	(317,860)	30.36%	(96,502)	(414,362)			(414,362)
54	Net Plant After Deferred taxes	1,271,626	-	-	-	-	1,271,626		22,384	1,294,010			1,294,010
55	Deferred Debits and Credits	7,458		(6,302)	-		1,156		-	1,156			1,156
56	Working Capital	59,722		(7,795)	-		51,927		-	51,927			51,927
57	Less: Plant Not Used and Useful												-
58	TOTAL RATE BASE	1,338,806	-	(14,097)	-	-	1,324,709		22,384	1,347,093			1,347,093
59	RATE OF RETURN	7.28%											**7.29%**
60	**ATTRITION ALLOWANCE REVENUE REQUIREMENT**												
61	Proposed Rate of Return												**7.25%**
62	Return on Plant in Service at Proposed Rate												$ 97,664
63	Operating Income Deficiency												$ (604)
64	Revenue Conversion Factor												0.61986
65	Revenue Requirement												$ (975)
66	Revenue Growth Factor												1.015632
67	Attrition Allowance Revenue Requirement												**$ (960)**

2017 Electric Attrition Allowance Revenue Requirement Model
Escalation Rate Evaluation

Cost / Rate Base Category: **Production & Transmission O&M Expense**

Selected trend period highlighted green and displayed as green dots in figure

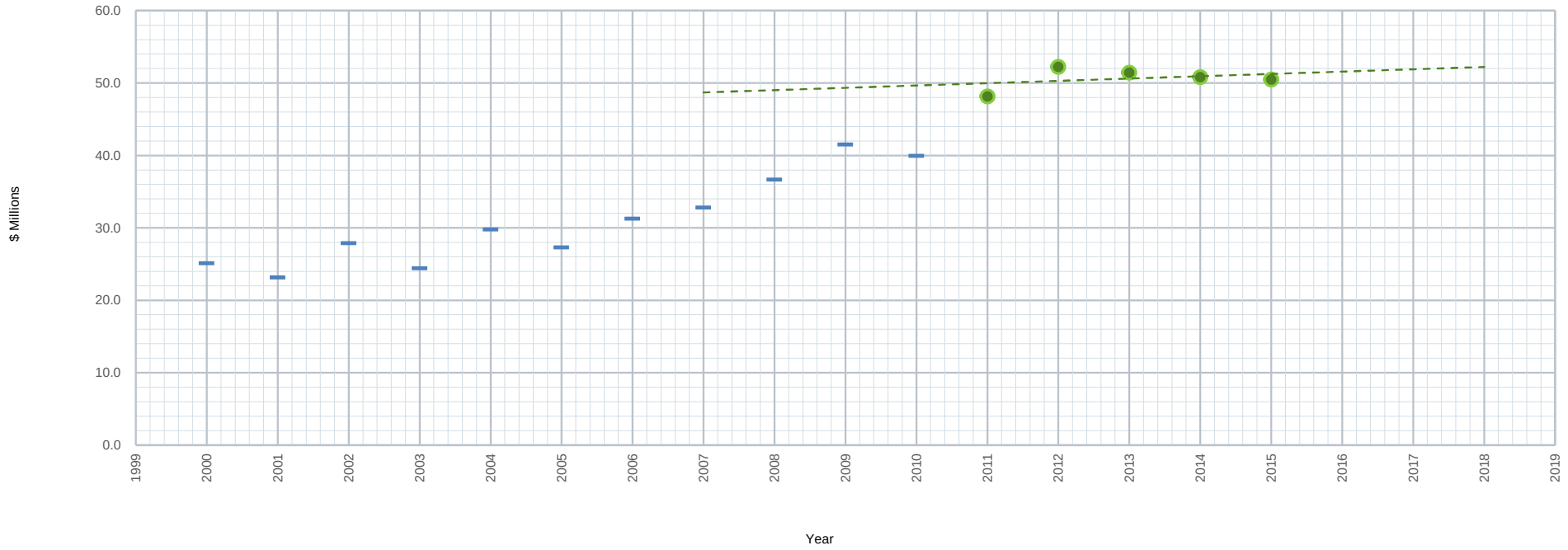
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
P/T Operations Expense	78,721	47,157	101,475	132,098	101,545	105,374	104,260	102,890	117,123	87,599	147,107	145,634	131,795	143,904	120,307	140,485
Less: Power Supply	(53,596)	(24,026)	(73,610)	(107,691)	(71,757)	(78,074)	(72,978)	(70,079)	(80,476)	(46,101)	(107,172)	(97,441)	(79,551)	(92,437)	(69,474)	(89,988)
Total Production & Transmission O&M Expense	**25,125**	**23,131**	**27,865**	**24,407**	**29,788**	**27,300**	**31,282**	**32,811**	**36,647**	**41,498**	**39,935**	**48,193**	**52,244**	**51,467**	**50,833**	**50,497**

Statistics (Over Highlighted Period)

Slope of Best-Fit Line	320
R -Squared of Best-Fit	0.10988
Annual Growth Rate (% of 2015)	0.63%
2-year Growth Rate	**1.27%**

Narrative

Over the most recent four years (2011 through 2015), production and transmission O&M has remained relatively flat. The recent trend appears to be similar to the trend that was experienced over the period 2000 through 2005, in which little to no growth in production and transmission O&M was experienced. Between 2010 and 2011, there was an unexplained increase in production and transmission O&M expense. The Company has not explained the cause of this increase, and therefore, it is not known whether a similar increase should be expected in future periods. Because the cause of the increase in production and transmission O&M between 2010 and 2011 is not known and appears to be related to a one-time event, I viewed it to be less appropriate to include that increase in the historical trend calculation. In addition, the recent flat trend in this category of expense is an indication that the Company has been able to control this expense and should be able to control it in future periods. Finally, low inflationary pressure is another reason why it is probably a better assumption to assume that this category of cost will remain relative stable into the future. Thus, my model calculates the trend using the most recent four-year period, in which production and transmission O&M expenses have declined slightly.



2017 Electric Attrition Allowance Revenue Requirement Model
Escalation Rate Evaluation

Cost / Rate Base Category: **Production & Transmission Depreciation Expense**

Selected trend period highlighted green and displayed as green dots in figure

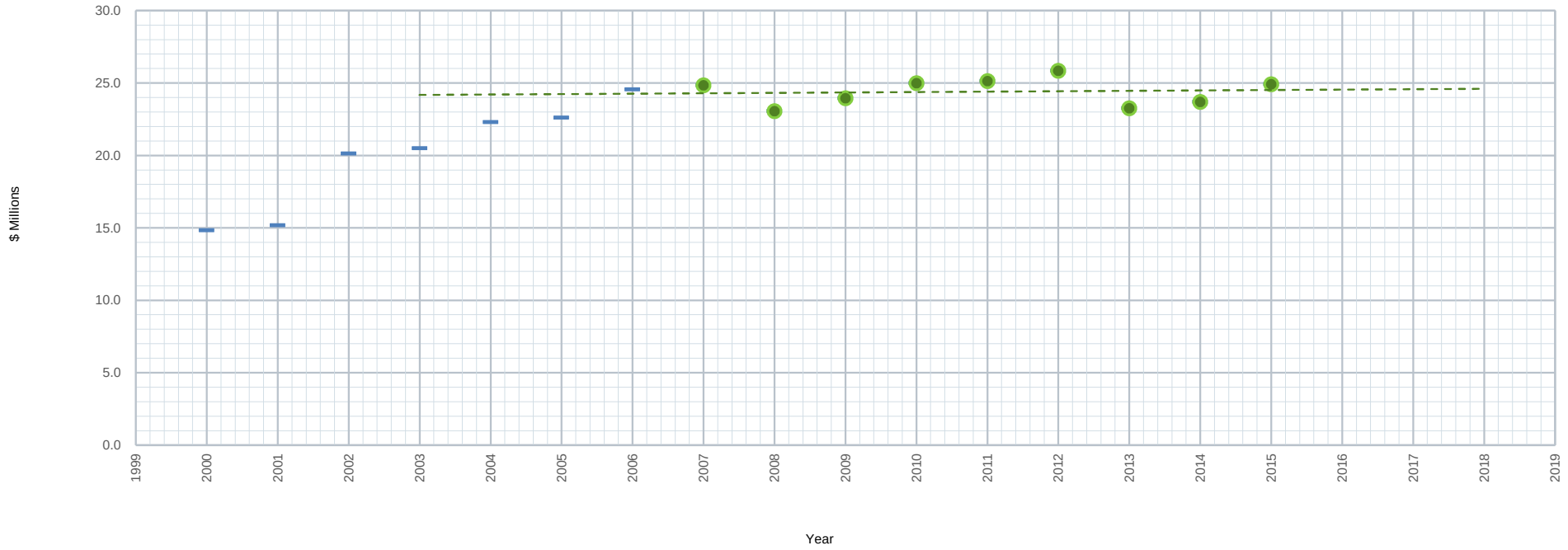
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
P/T Depreciation (per CBR)	(3,114)	9,152	13,808	14,915	22,879	13,812	25,745	21,795	22,000	22,266	22,129	25,158	25,872	23,284	23,715	24,947
Less: Reg. Amort. in Hist. P/T Depr.	17,964	6,050	6,349	5,608	(567)	8,817	(1,168)	3,082	1,076	1,703	2,879					
Total Production & Transmission Depreciation Expense	**14,850**	**15,202**	**20,157**	**20,523**	**22,312**	**22,629**	**24,577**	**24,877**	**23,076**	**23,969**	**25,008**	**25,158**	**25,872**	**23,284**	**23,715**	**24,947**

Statistics (Over Highlighted Period)

Slope of Best-Fit Line	28
R -Squared of Best-Fit	0.00655
Annual Growth Rate (% of 2015)	0.11%
2-year Growth Rate	**0.23%**

Narrative

Production and transmission depreciation expense have been markedly flat over the period 2006 to the present. Accordingly, my model uses the Company's escalation period of 2007 through 2015.



2017 Electric Attrition Allowance Revenue Requirement Model
Escalation Rate Evaluation

Cost / Rate Base Category: **Distribution O&M Expense**

Selected trend period highlighted green and displayed as green dots in figure

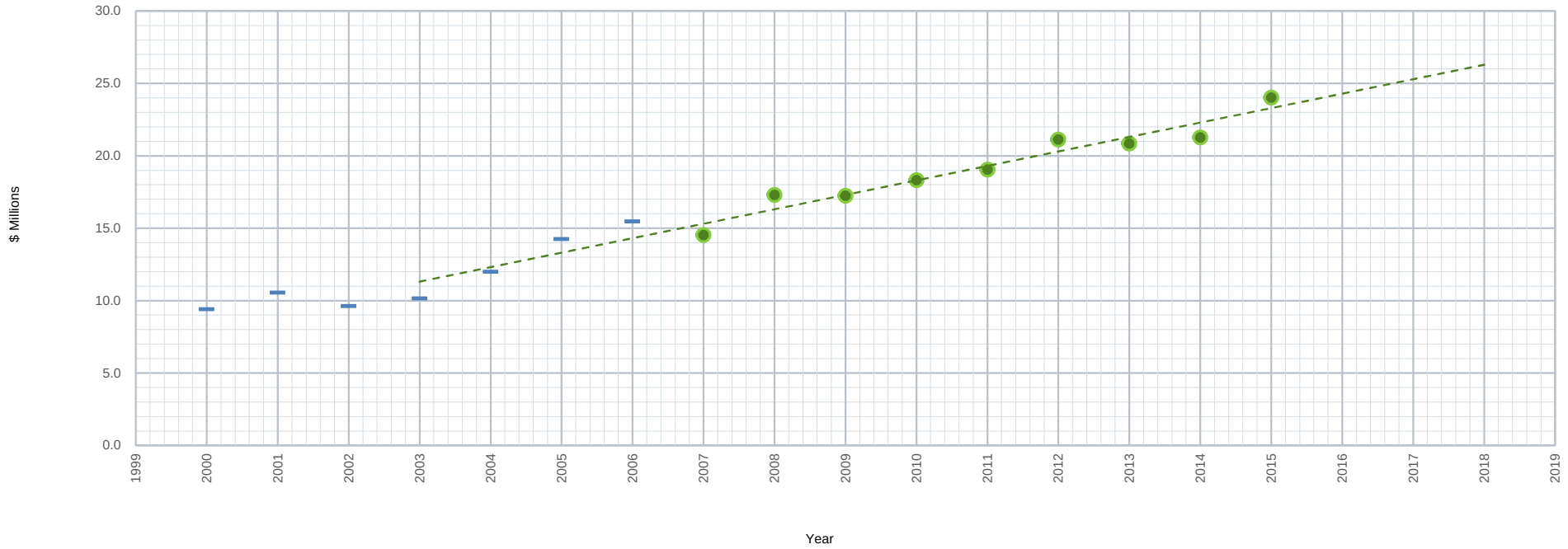
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Distribution Operations Expense	9,418	10,560	9,631	10,171	12,016	14,263	15,485	14,563	17,329	17,267	18,354	19,081	21,152	20,878	21,299	24,056
Total Distribution O&M Expense	**9,418**	**10,560**	**9,631**	**10,171**	**12,016**	**14,263**	**15,485**	**14,563**	**17,329**	**17,267**	**18,354**	**19,081**	**21,152**	**20,878**	**21,299**	**24,056**

Statistics (Over Highlighted Period)

Slope of Best-Fit Line	998
R -Squared of Best-Fit	0.93551
Annual Growth Rate (% of 2015)	4.15%
2-year Growth Rate	**8.30%**

Narrative

The distribution O&M category of cost has experienced fairly steady growth over the past fifteen years. In the most recent four years (2012 through 2015), this trend appears to have leveled off, as this category of cost has experienced a rate of growth that is less than that experienced in the prior period. The slowing rate of growth in this category of cost may be related to the relatively low inflationary pressures on commodity prices experienced recently. Thus, the long term historical trend may not be the best predictor of this category of cost into the future. Notwithstanding, while the case could be made to use an escalation period of 2012 through 2015, my model uses the Company's escalation period of 2007 through 2015 for this category of cost.



2017 Electric Attrition Allowance Revenue Requirement Model
Escalation Rate Evaluation

Cost / Rate Base Category: **Production & Transmission Taxes Other Than Income Taxes**

Selected trend period highlighted green and displayed as green dots in figure

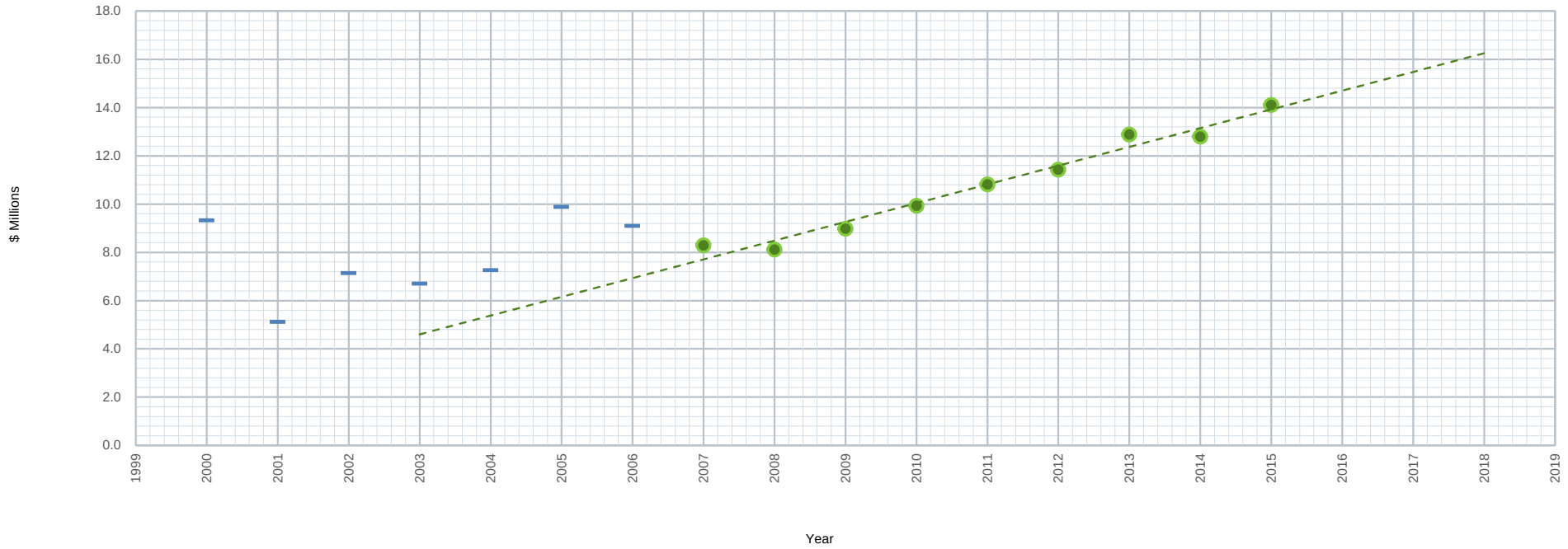
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
P/T Taxes	9,346	5,139	7,164	6,722	7,283	9,900	9,115	8,319	8,146	9,014	9,955	10,846	11,456	12,913	12,828	14,133
Total Production & Transmission Taxes Other Than Income Taxes	**9,346**	**5,139**	**7,164**	**6,722**	**7,283**	**9,900**	**9,115**	**8,319**	**8,146**	**9,014**	**9,955**	**10,846**	**11,456**	**12,913**	**12,828**	**14,133**

Statistics (Over Highlighted Period)

Slope of Best-Fit Line	777
R -Squared of Best-Fit	0.97288
Annual Growth Rate (% of 2015)	5.50%
2-year Growth Rate	**10.99%**

Narrative

Production and transmission tax expense other than income taxes have increased fairly consistently in the recent period 2007 through 2015. Because the amount of net production plant has remained relatively flat for nearly ten years, however, it is not necessarily clear why the taxes other than income taxes on production plant have been increasing at such a high rate. The trend is most likely caused by increasing property tax rates over the period, as well as increasing balances associated with transmission plant. There may be other taxes, such as generation taxes at Colstrip power station, that are influencing this trend, as well. Notwithstanding, my model uses the Company's escalation period of 2007 through 2015 for this category of cost.



2017 Electric Attrition Allowance Revenue Requirement Model
Escalation Rate Evaluation

Cost / Rate Base Category: **Distribution Depreciation Expense**

Selected trend period highlighted green and displayed as green dots in figure

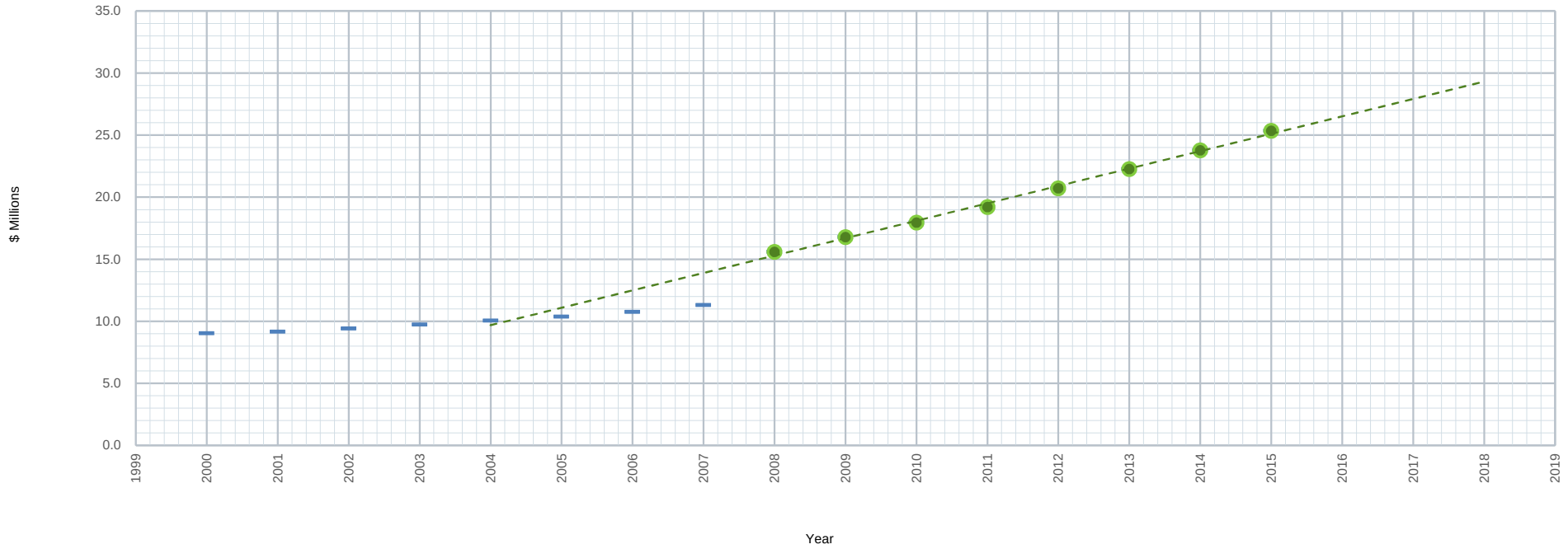
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Distribution Depreciation Expense	9,056	9,178	9,427	9,752	10,067	10,399	10,776	11,333	15,611	16,809	17,985	19,240	20,749	22,303	23,794	25,379
Total Distribution Depreciation Expense	**9,056**	**9,178**	**9,427**	**9,752**	**10,067**	**10,399**	**10,776**	**11,333**	**15,611**	**16,809**	**17,985**	**19,240**	**20,749**	**22,303**	**23,794**	**25,379**

Statistics (Over Highlighted Period)

Slope of Best-Fit Line	1,402
R -Squared of Best-Fit	0.99650
Annual Growth Rate (% of 2015)	5.52%
2-year Growth Rate	**11.05%**

Narrative

Over the period 2000 through 2007, the distribution depreciation expense category of cost was markedly flat, experiencing only minor increases. Beginning in 2008, however, the flat trend changed, and the category of cost began increasing at an increased rate. Accordingly, my analysis uses an escalation period of 2008 through 2015 for this category of cost. Inclusion of the 2007 data point, per the Company's escalation period, would have resulted in a lower r-squared value, thus making it less preferable to use that data point in the escalation factor calculation.



2017 Electric Attrition Allowance Revenue Requirement Model
Escalation Rate Evaluation

Cost / Rate Base Category: **Distribution Taxes Other Than Income Taxes**

Selected trend period highlighted green and displayed as green dots in figure

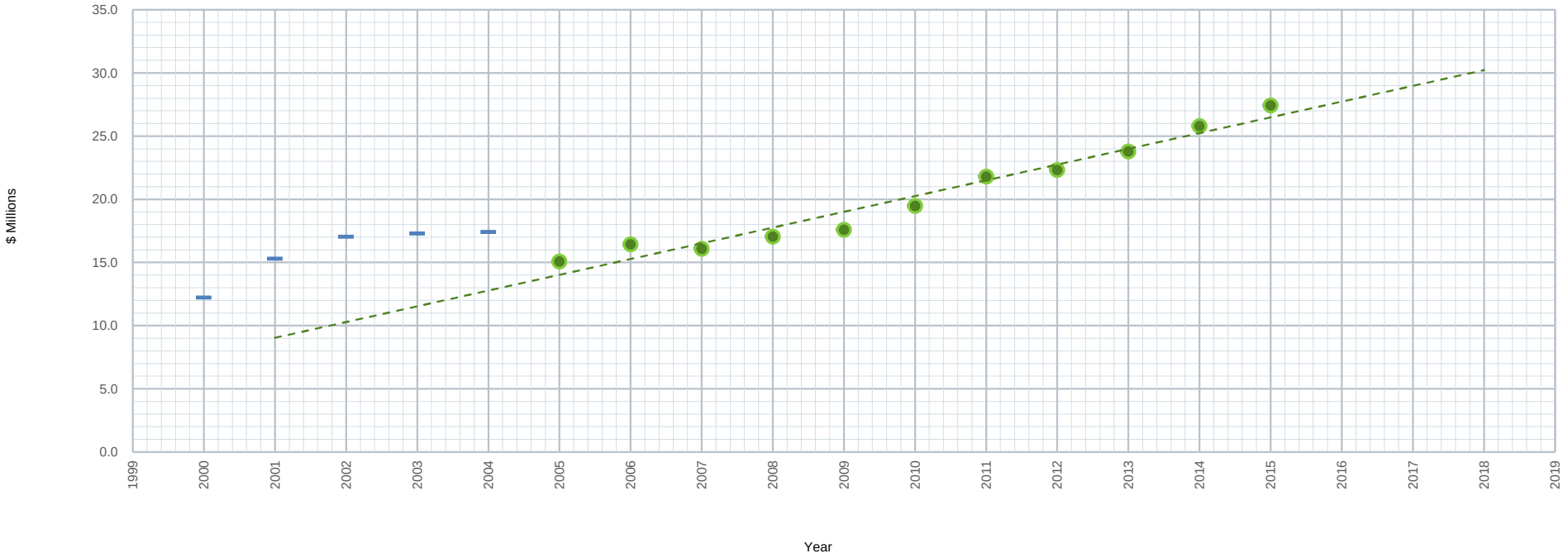
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Distribution Taxes	11,693	15,462	16,996	17,286	17,401	14,988	16,307	16,156	17,416	18,216	20,029	22,459	22,699	23,809	25,821	27,448
Less: ResEx Excise Taxes	672	57	303	256	289	379	415	225	144	162	252	186	336	-	-	-
Less: DSM Excise Taxes	(139)	(205)	(245)	(248)	(272)	(267)	(266)	(269)	(488)	(762)	(787)	(812)	(683)	-	-	-
Total Distribution Taxes Other Than Income Taxes	**12,226**	**15,314**	**17,054**	**17,294**	**17,418**	**15,100**	**16,457**	**16,112**	**17,072**	**17,615**	**19,494**	**21,834**	**22,353**	**23,809**	**25,821**	**27,448**

Statistics (Over Highlighted Period)

Slope of Best-Fit Line	1,246
R -Squared of Best-Fit	0.95911
Annual Growth Rate (% of 2015)	4.54%
2-year Growth Rate	**9.08%**

Narrative

Distribution taxes other than income taxes showed a somewhat more complicated historical pattern than some other categories of cost. Over the period 2000 through 2005, the category of cost increased and then decreased. Beginning in 2005, however, the category of cost began to increase again. While this category of cost experienced a slight reduction in 2007, the current trend appears to have largely originated in 2005, and accordingly, my model uses the period 2005 through 2015 to calculate the escalation rate for this category of cost.



2017 Electric Attrition Allowance Revenue Requirement Model
Escalation Rate Evaluation

Cost / Rate Base Category: **Customer Accounting and Sales**

Selected trend period highlighted green and displayed as green dots in figure

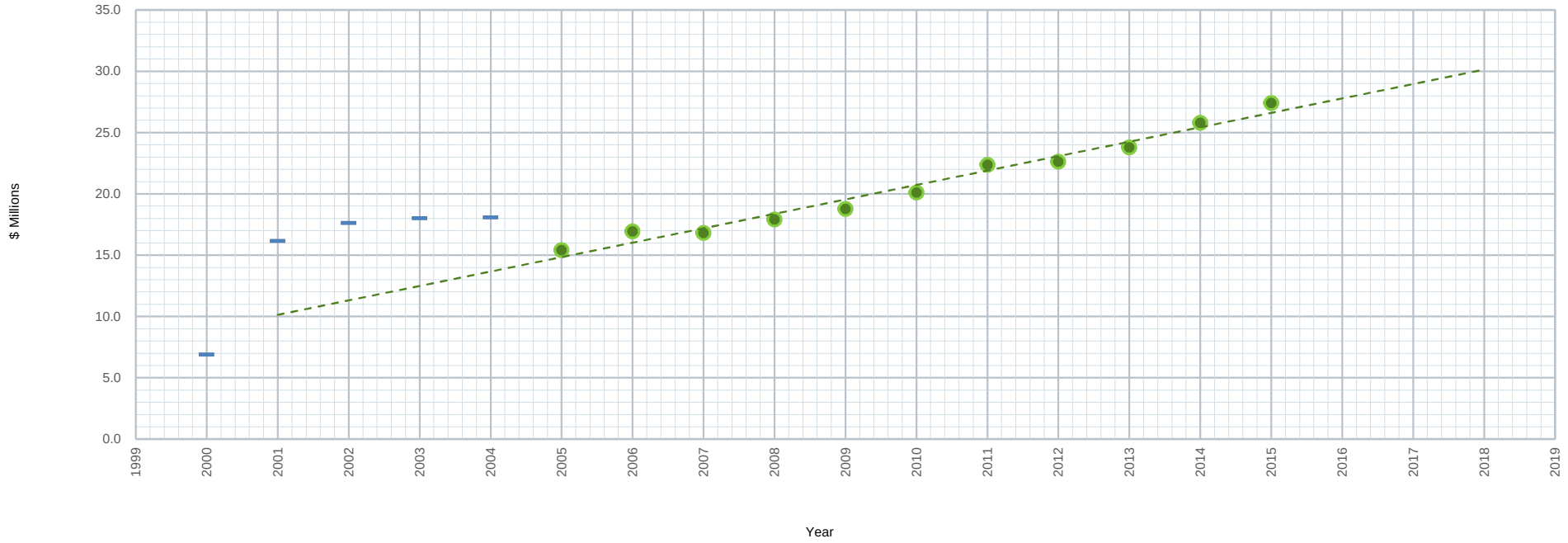
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Customer Accounting	5,768	15,462	16,996	17,286	17,401	14,988	16,307	16,156	17,416	18,216	20,029	22,459	22,699	23,809	25,821	27,448
Sales Expense	1,071	734	628	734	686	430	657	682	571	660	176	4	5	5	-	-
Less: ResEx	102	9	46	39	44	43	47	25	16	18	28	21	38	-	-	-
Less: DSM Excise	(21)	(31)	(37)	(38)	(41)	(30)	(30)	(30)	(55)	(86)	(88)	(91)	(77)	-	-	-
Total Customer Accounting and Sales	**6,920**	**16,174**	**17,633**	**18,021**	**18,090**	**15,431**	**16,981**	**16,833**	**17,948**	**18,808**	**20,145**	**22,393**	**22,665**	**23,814**	**25,821**	**27,448**

Statistics (Over Highlighted Period)

Slope of Best-Fit Line	1,176
R -Squared of Best-Fit	0.97489
Annual Growth Rate (% of 2015)	4.29%
2-year Growth Rate	**8.57%**

Narrative

Over the period 2001 through 2004, the customer accounting and sales category of cost experienced little to no growth. Beginning in 2005, the category of cost began to increase, developing what appears to be the current trend in this category of cost. Accordingly, my model uses the period 2005 through 2015 as the trend period for this category of cost.



2017 Electric Attrition Allowance Revenue Requirement Model
Escalation Rate Evaluation

Cost / Rate Base Category: **Customer Service and Information**

Selected trend period highlighted green and displayed as green dots in figure

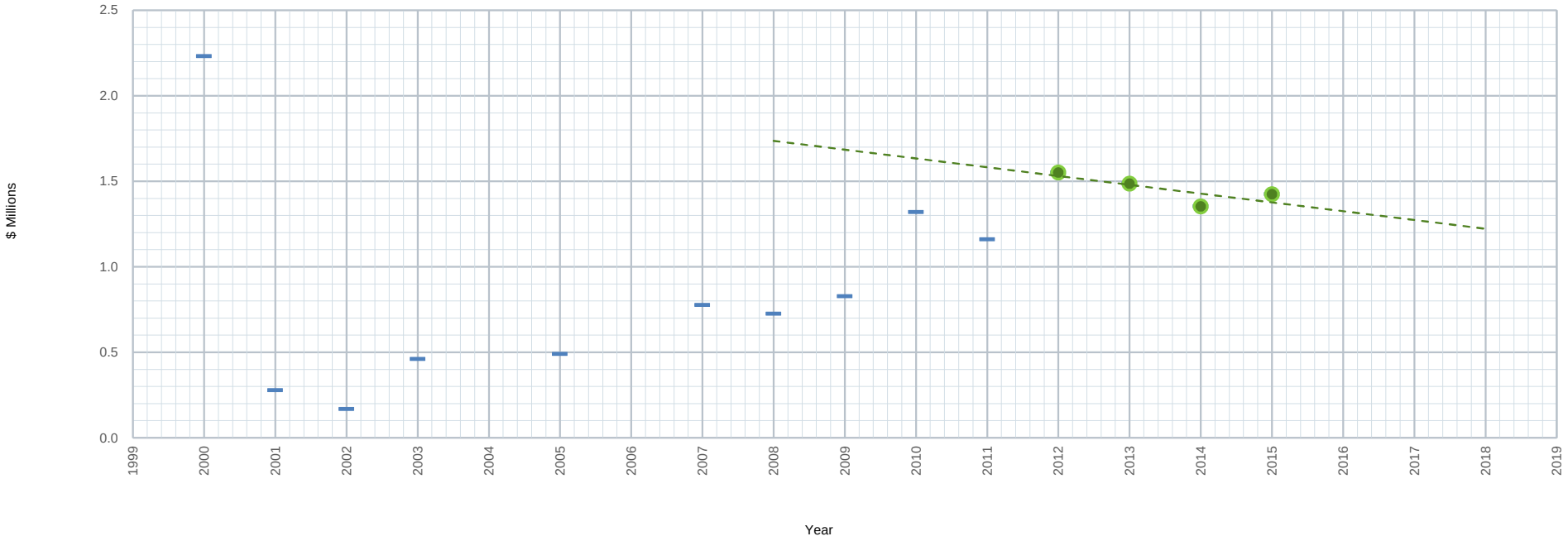
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Customer Service and Information	5,704	5,381	6,261	6,620	266	7,127	1,159	7,472	12,847	19,736	20,832	21,292	18,487	1,516	1,383	1,454
Less: DSM Cost	(3,443)	(5,074)	(6,064)	(6,130)	(6,747)	(6,608)	(6,580)	(6,667)	(12,092)	(18,880)	(19,483)	(20,102)	(16,906)	-	-	-
Total Customer Service and Information	**2,261**	**307**	**197**	**490**	**(6,481)**	**519**	**(5,421)**	**805**	**755**	**856**	**1,349**	**1,190**	**1,581**	**1,516**	**1,383**	**1,454**

Statistics (Over Highlighted Period)

Slope of Best-Fit Line	(51)
R -Squared of Best-Fit	0.61347
Annual Growth Rate (% of 2015)	-3.54%
2-year Growth Rate	**0.00%**

Narrative

The trend related to the customer service and information expense category of cost is less clear compared to other categories of cost. For example, this category of cost increased dramatically between 2009 and 2010. Yet, in 2011, it declined, only to increase again in 2012. From 2012 to the present, however, this category of cost has been relatively flat, declining slightly. It is probably most appropriate to assume that this category of cost will decline slightly in the test period, based on the use of a 2012 to 2015 trend period. Notwithstanding, my model assumes zero growth in this category of cost, due to the erratic historical pattern.



2017 Electric Attrition Allowance Revenue Requirement Model
Escalation Rate Evaluation

Cost / Rate Base Category: **Administrative & General Operations Expense**

Selected trend period highlighted green and displayed as green dots in figure

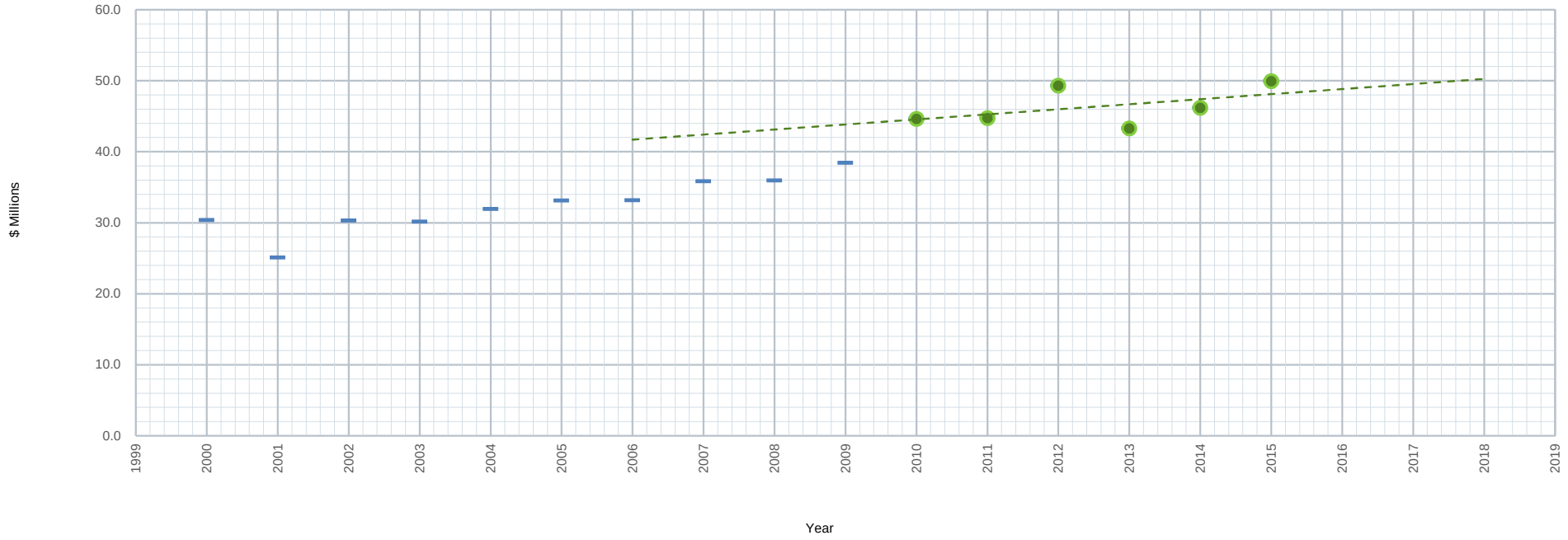
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Adminisrtative and General	30,350	25,102	30,304	30,153	31,927	33,143	33,148	35,844	35,982	38,461	44,662	44,779	49,333	43,310	46,210	49,942
Less: DSM Cost	(7)	(11)	(13)	(13)	(14)	(14)	(14)	(14)	(25)	(40)	(41)	(42)	(35)	-	-	-
Less: ResEx Cost	35	3	16	13	15	20	22	12	7	8	13	10	17	-	-	-
Total Administrative & General Operations Expense	**30,378**	**25,094**	**30,307**	**30,153**	**31,928**	**33,149**	**33,156**	**35,842**	**35,964**	**38,430**	**44,634**	**44,747**	**49,315**	**43,310**	**46,210**	**49,942**

Statistics (Over Highlighted Period)

Slope of Best-Fit Line	712
R -Squared of Best-Fit	0.24330
Annual Growth Rate (% of 2015)	1.43%
2-year Growth Rate	**2.85%**

Narrative

Administrative and general operations expense increased at a fairly steady rate over the period 2000 through 2010. From 2010 through 2015, the rate of growth appears to have leveled-off slightly, showing a slower growth trend over that period. This may be an indication that the Company has the ability to control this category of expense and that the longer term trend is not an indication of the uncontrollable costs increases in the future period. In addition, this category of cost appears to have experienced a one-time increase in between 2009 and 2010, which does not appear to be most appropriately included in the trend calculations. Accordingly, my model relies on the period 2010 to 2015 as the trend period for this category of cost.



2017 Electric Attrition Allowance Revenue Requirement Model
Escalation Rate Evaluation

Cost / Rate Base Category: **Administrative & General Depreciation Expense**

Selected trend period highlighted green and displayed as green dots in figure

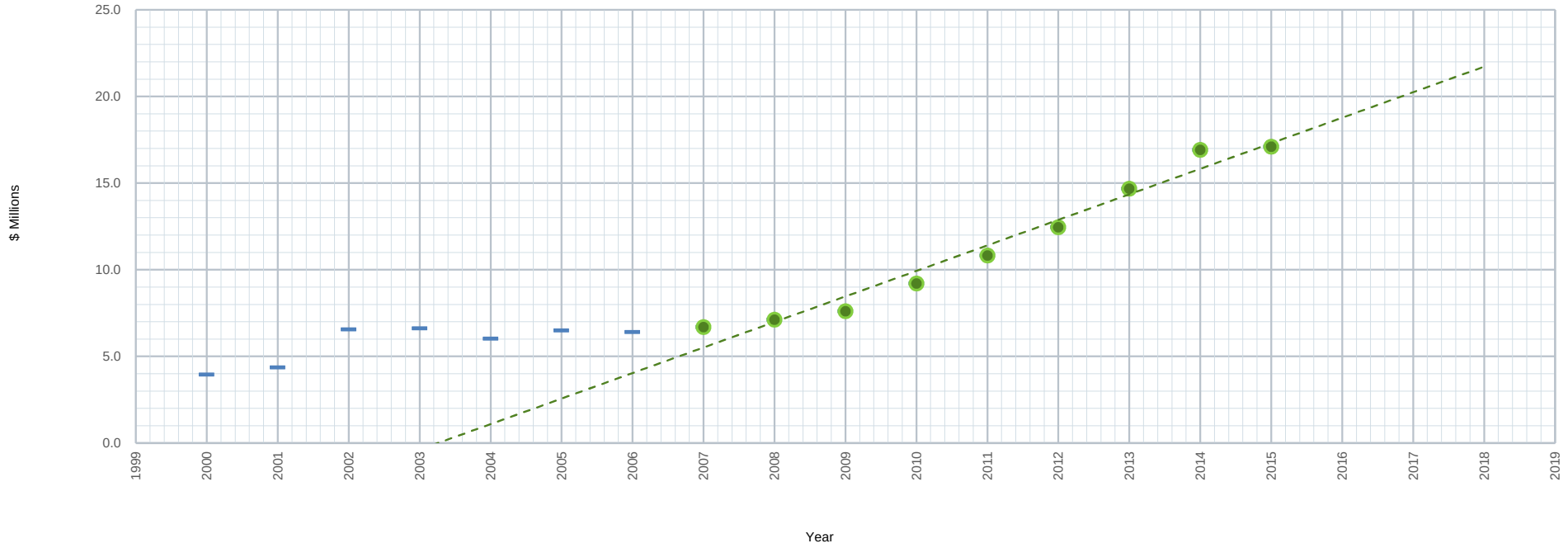
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Adminisrtative and General	3,998	4,414	6,606	6,659	6,072	6,537	6,459	6,739	7,187	7,688	9,277	10,906	12,517	14,721	16,947	21,503
Less: DSM Cost	(7)	(11)	(13)	(13)	(14)	(14)	(14)	(14)	(25)	(40)	(41)	(42)	(35)	-	-	-
Less: Project Compass (ICNU DR 175)																(4,366)
Total Administrative & General Depreciation Expense	**3,991**	**4,403**	**6,593**	**6,646**	**6,058**	**6,523**	**6,445**	**6,725**	**7,162**	**7,648**	**9,236**	**10,864**	**12,482**	**14,721**	**16,947**	**17,137**

Statistics (Over Highlighted Period)

Slope of Best-Fit Line	1,473
R -Squared of Best-Fit	0.96655
Annual Growth Rate (% of 2015)	8.60%
2-year Growth Rate	**17.19%**

Narrative

As with general plant, the category of cost related to administrative and general depreciation expense has escalated dramatically in recent years. As discussed in testimony, however, this is not a category of cost that one typically considers in relation to the Company's claims of attrition, as it is often more discretionary than other categories of cost. Thus, I remain concerned with the degree of escalation in administrative and general depreciation expenses. Notwithstanding these concerns, my model uses the Company's escalation period of 2007 to 2015 for this category of cost. In my view, however, the Commission would be justified in eliminating the escalation assumption for this category of cost, similar to its treatment of distribution plant in the 2015 GRC.



2017 Electric Attrition Allowance Revenue Requirement Model
Escalation Rate Evaluation

Cost / Rate Base Category: **Intangible Net Plant**

Selected trend period highlighted green and displayed as green dots in figure

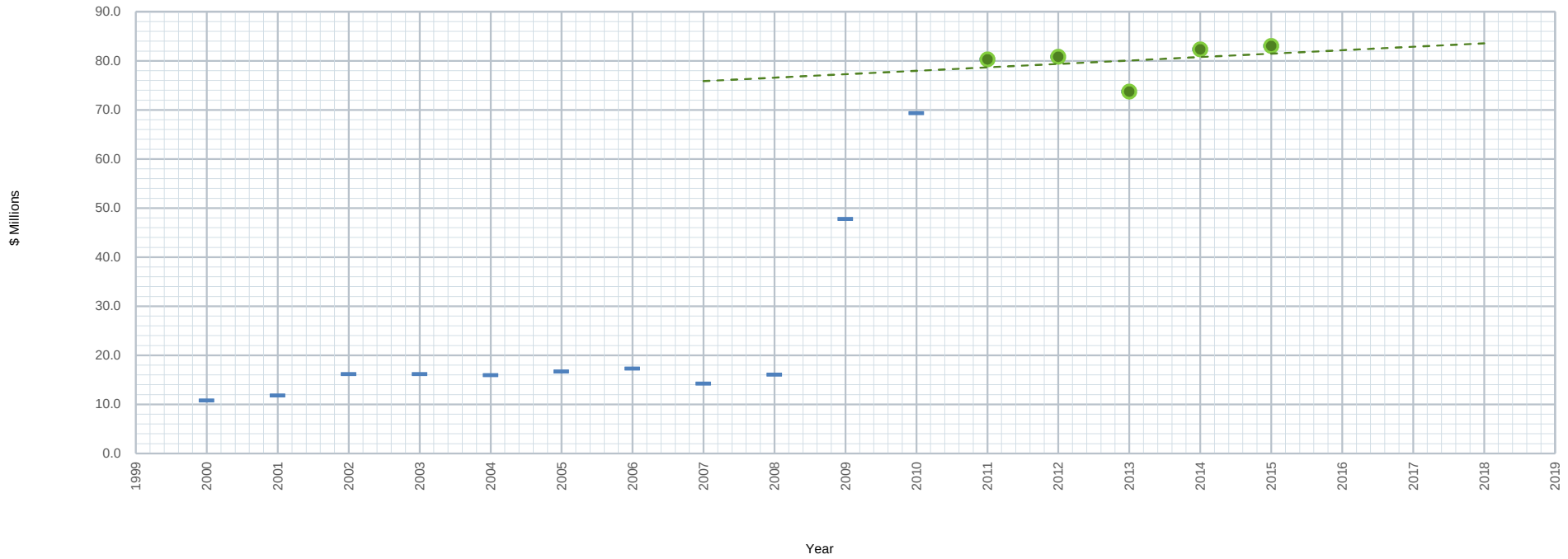
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Gross Plant	15,127	16,340	20,910	21,299	21,374	22,459	23,458	20,632	23,321	57,116	81,955	84,081	85,247	91,466	102,620	144,970
Depreciation Reserve	(4,279)	(4,501)	(4,721)	(5,095)	(5,397)	(5,729)	(6,111)	(6,349)	(7,252)	(9,302)	(12,606)	(3,744)	(4,369)	(17,667)	(20,242)	(24,943)
Less: Project Compass (ICNU DR 175)																(36,945)
Total Intangible Net Plant	**10,848**	**11,839**	**16,189**	**16,204**	**15,977**	**16,730**	**17,347**	**14,283**	**16,069**	**47,814**	**69,349**	**80,337**	**80,878**	**73,799**	**82,378**	**83,082**

Statistics (Over Highlighted Period)

Slope of Best-Fit Line	699
R -Squared of Best-Fit	0.08976
Annual Growth Rate (% of 2015)	0.84%
2-year Growth Rate	**1.68%**

Narrative

Over the period 2000 through 2008, the net intangible plant balances remained markedly flat. Between 2008 and 2011, however, the net intangible plant values increased dramatically. Subsequently, between 2011 and 2015, the plant values returned to their historical flat trend. It is not clear what drove the increases in net intangible plant that occurred between 2008 and 2011. It is also not clear whether similarly large increases will occur in the future, as the Company has just completed Project Compass. Accordingly, my model uses the most recent flat trend that has occured over the period 2011 through 2015.



2017 Electric Attrition Allowance Revenue Requirement Model
Escalation Rate Evaluation

Cost / Rate Base Category: **Production Net Plant**

Selected trend period highlighted green and displayed as green dots in figure

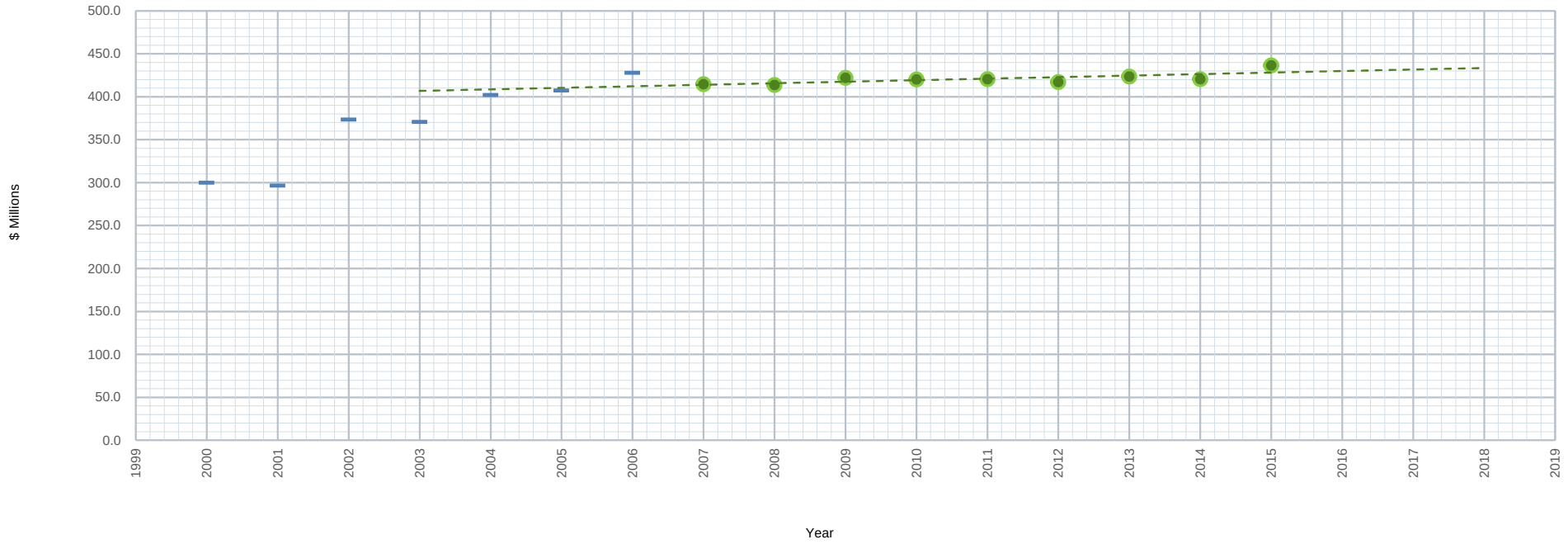
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Gross Plant	455,498	460,292	545,002	556,067	598,268	615,624	649,965	645,576	657,099	677,646	692,689	706,894	717,448	738,315	746,101	779,441
Depreciation Reserve	(155,496)	(163,566)	(171,572)	(185,180)	(196,126)	(208,203)	(222,098)	(230,738)	(243,189)	(255,390)	(272,340)	(286,300)	(300,170)	(314,599)	(325,531)	(342,899)
Total Production Net Plant	**300,002**	**296,726**	**373,430**	**370,887**	**402,142**	**407,421**	**427,867**	**414,838**	**413,910**	**422,256**	**420,349**	**420,594**	**417,278**	**423,716**	**420,570**	**436,542**

Statistics (Over Highlighted Period)

Slope of Best-Fit Line	1,777
R -Squared of Best-Fit	0.53660
Annual Growth Rate (% of 2015)	0.41%
2-year Growth Rate	**0.81%**

Narrative

Net production plant has remained relatively flat over the past ten years. Accordingly, my model uses the Company's escalation period of 2007 to 2015 for this category of cost.



2017 Electric Attrition Allowance Revenue Requirement Model
Escalation Rate Evaluation

Cost / Rate Base Category: **Transmission Net Plant**

Selected trend period highlighted green and displayed as green dots in figure

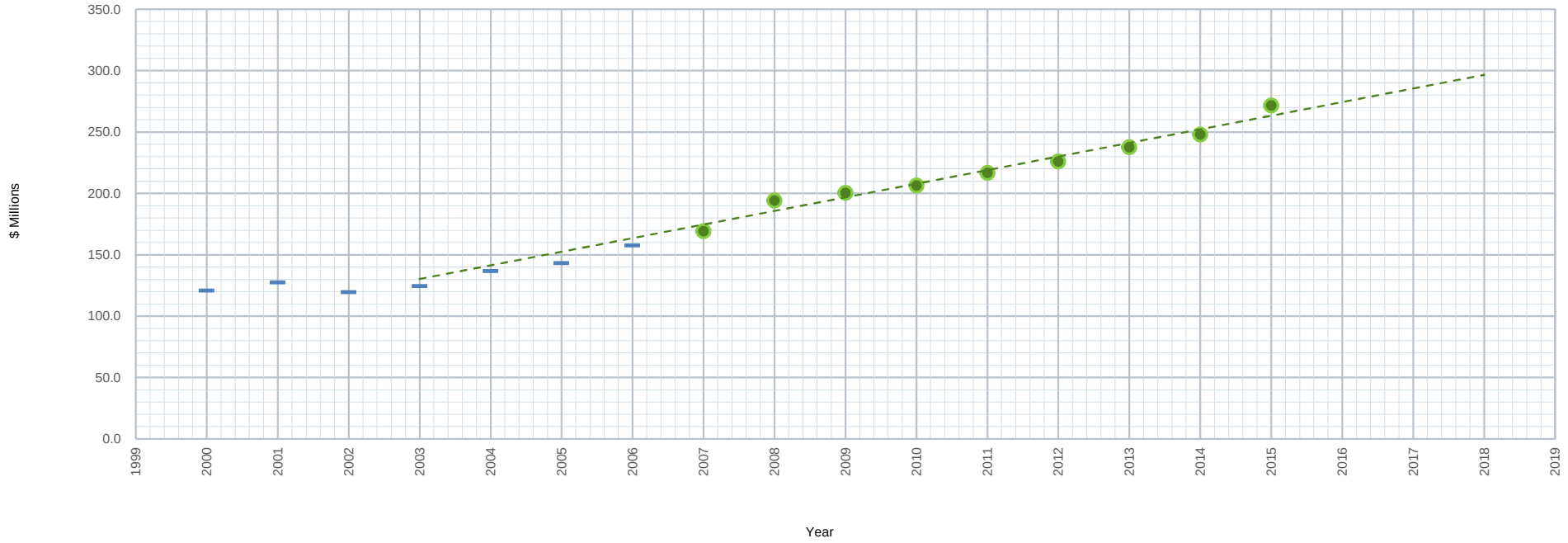
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Gross Plant	181,627	191,517	186,550	196,937	213,539	224,696	244,435	259,532	289,302	301,090	312,505	328,012	342,382	359,941	371,971	401,700
Depreciation Reserve	(60,746)	(63,899)	(67,026)	(72,342)	(76,619)	(81,337)	(86,765)	(90,140)	(95,026)	(100,649)	(106,041)	(111,144)	(116,316)	(122,308)	(123,869)	(129,936)
Total Transmission Net Plant	**120,881**	**127,618**	**119,524**	**124,595**	**136,920**	**143,359**	**157,670**	**169,392**	**194,276**	**200,441**	**206,464**	**216,868**	**226,066**	**237,633**	**248,102**	**271,764**

Statistics (Over Highlighted Period)

Slope of Best-Fit Line	11,083
R -Squared of Best-Fit	0.96883
Annual Growth Rate (% of 2015)	4.08%
2-year Growth Rate	**8.16%**

Narrative

Net transmission plant has grown relatively steadily over the past ten years. Accordingly, my model uses the Company's escalation period of 2007 to 2015 for this category of cost.



2017 Electric Attrition Allowance Revenue Requirement Model
Escalation Rate Evaluation

Cost / Rate Base Category: **Distribution Net Plant**

Selected trend period highlighted green and displayed as green dots in figure

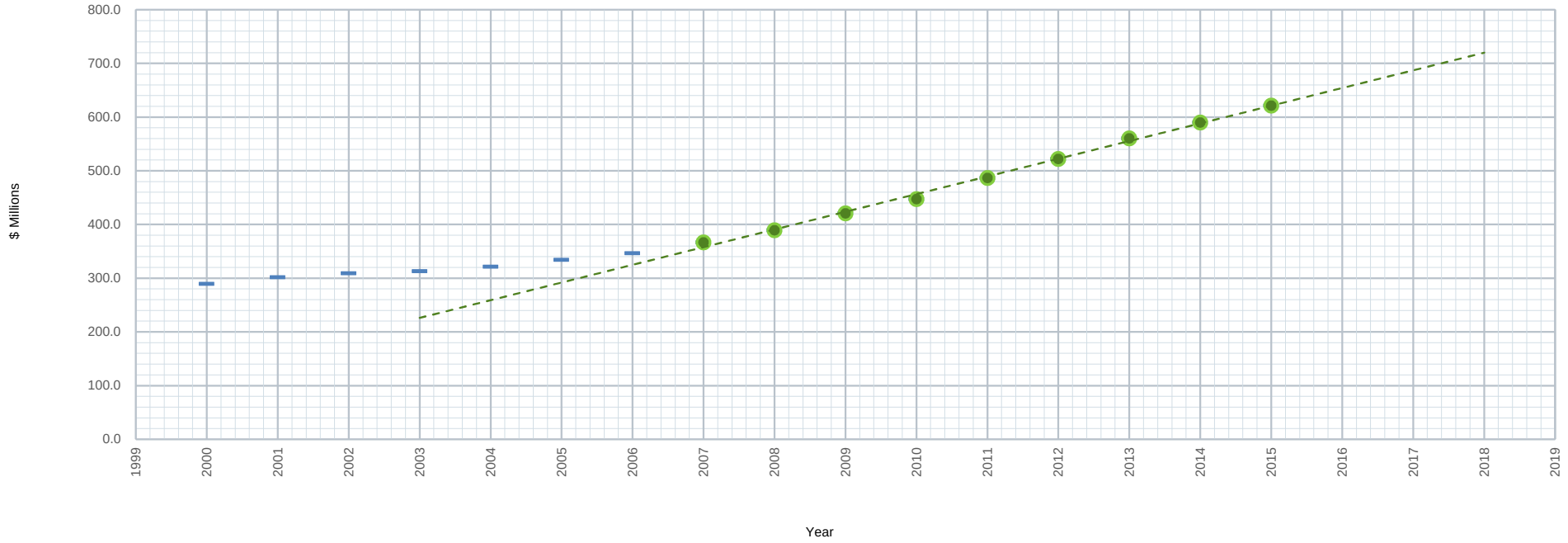
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Gross Plant	398,952	416,914	429,987	443,649	459,739	480,886	502,838	529,067	561,248	602,201	642,143	696,082	743,732	796,640	842,795	895,055
Depreciation Reserve	(109,404)	(115,082)	(120,715)	(130,289)	(137,991)	(146,488)	(156,264)	(162,343)	(172,026)	(181,327)	(194,593)	(209,101)	(221,408)	(236,201)	(252,722)	(273,578)
Total Distribution Net Plant	**289,548**	**301,832**	**309,272**	**313,360**	**321,748**	**334,398**	**346,574**	**366,724**	**389,222**	**420,874**	**447,550**	**486,981**	**522,324**	**560,439**	**590,073**	**621,477**

Statistics (Over Highlighted Period)

Slope of Best-Fit Line	32,924
R -Squared of Best-Fit	0.99683
Annual Growth Rate (% of 2015)	5.30%
2-year Growth Rate	**10.60%**

Narrative

The history of net distribution plant shows two distinct trends. The first trend occurred between 2000 and 2006 and showed relatively modest growth in net plant values. The second trend begins in 2007 and extends until 2015. During the second trend period, distribution plant has increased at a greater rate. In the 2015 GRC, the Commission questioned whether the growth in distribution plant was beyond the control of the Company. While Ms. Rosentrater provided testimony on distribution plant investments (See Exh. No. HLR-1T at 31:11-43:19), I still do not have a clear understanding of why distribution plant is increasing at such a great rate. In addition, her descriptions certainly did not give me the impression that the Company is working hard to prioritize and control its investment in this category of cost. Given the low inflationary environment, I would expect the growth in this category of plant to show some signs of slowing. In addition, it would be helpful to understand how the Company's investment in distribution plant compares to other similar utilities. To my knowledge, similarly sized utilities such as PacifiCorp have not been making attrition claims on the basis of distribution investment, yet distribution plant appears to be a key driver of the Company's claims. Notwithstanding these concerns, my model uses the Company's escalation period of 2007 to 2015 for this category of cost. In my view, however, the Commission would be justified in eliminating escalation for this category of cost, similar to its treatment in the 2015 GRC.



2017 Electric Attrition Allowance Revenue Requirement Model
Escalation Rate Evaluation

Cost / Rate Base Category: **General Net Plant**

Selected trend period highlighted green and displayed as green dots in figure

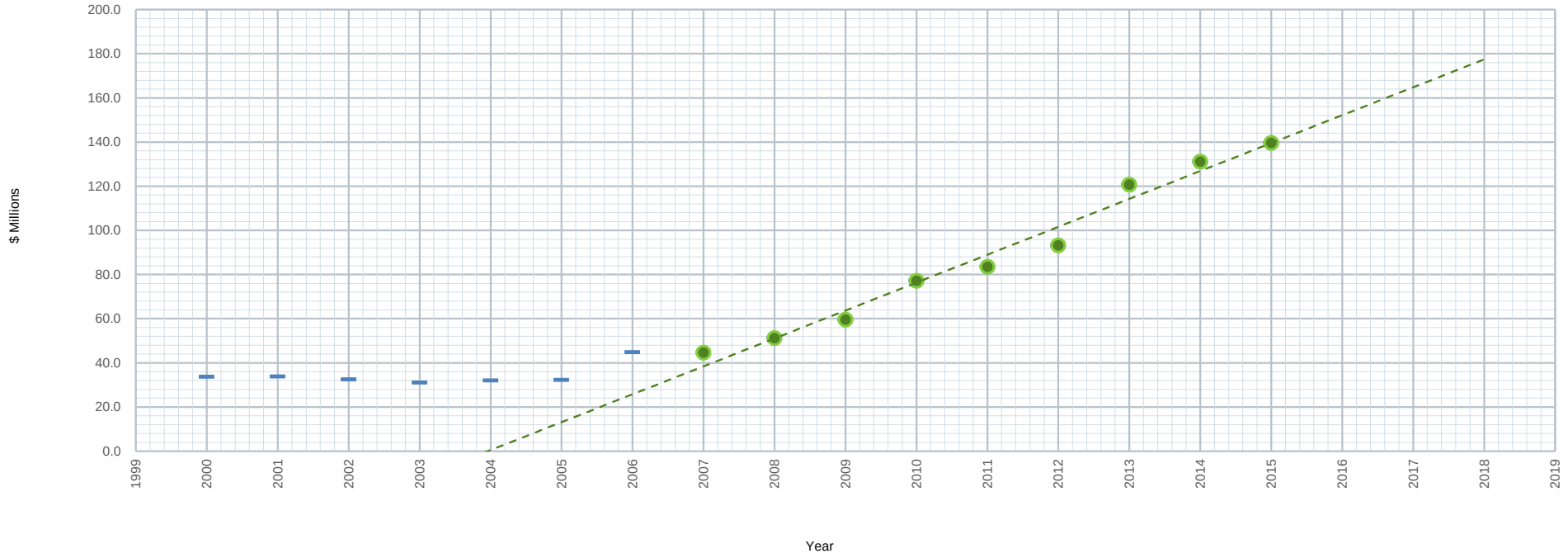
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Gross Plant	58,402	59,846	59,771	60,444	63,155	65,299	80,110	81,368	91,205	98,727	120,996	140,218	155,104	179,134	196,867	212,726
Depreciation Reserve	(24,757)	(26,042)	(27,317)	(29,483)	(31,226)	(33,149)	(35,361)	(36,737)	(39,933)	(39,153)	(43,819)	(56,694)	(61,871)	(58,357)	(65,720)	(73,050)
Total General Net Plant	**33,645**	**33,804**	**32,454**	**30,961**	**31,929**	**32,150**	**44,749**	**44,631**	**51,272**	**59,574**	**77,177**	**83,524**	**93,233**	**120,777**	**131,147**	**139,676**

Statistics (Over Highlighted Period)

Slope of Best-Fit Line	12,638
R -Squared of Best-Fit	0.97786
Annual Growth Rate (% of 2015)	9.05%
2-year Growth Rate	**18.10%**

Narrative

As noted in Response Testimony, the trend related to general net plant is somewhat concerning. This is a category of cost which I typically consider to be more under the control of the Company than other categories of costs, as the Company often has the ability to defer these sorts of investments to the extent that it is experiencing attrition. In this case, however, it is not necessarily clear why general net plant is growing at such a high rate. Notwithstanding these concerns, my model uses the Company's escalation period of 2007 to 2015 for this category of cost. In my view, however, the Commission would be justified in eliminating escalation for this category of cost, similar to its treatment of distribution plant in the 2015 GRC.



2017 Electric Attrition Allowance Revenue Requirement Model
Escalation Rate Evaluation

Cost / Rate Base Category: **Accumulated Deferred Income Taxes**

Selected trend period highlighted green and displayed as green dots in figure

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Accumulated Deferred Income Taxes	105,775	109,541	111,367	135,404	150,960	134,967	138,495	139,033	147,502	163,716	184,825	201,163	208,209	221,354	257,766	317,860
Total Accumulated Deferred Income Taxes	**105,775**	**109,541**	**111,367**	**135,404**	**150,960**	**134,967**	**138,495**	**139,033**	**147,502**	**163,716**	**184,825**	**201,163**	**208,209**	**221,354**	**257,766**	**317,860**

Statistics (Over Highlighted Period)

Slope of Best-Fit Line	48,253
R -Squared of Best-Fit	0.98032
Annual Growth Rate (% of 2015)	15.18%
2-year Growth Rate	**30.36%**

Narrative

Because of the availability of bonus depreciation and accelerated depreciation for tax purposes, my expectation was that deferred income tax balances would grow at a rate in excess of the rate of growth applicable to net plant. Upon review of the data, it appears that the rate of growth in this category of cost over the long-term has largely aligned with other categories of plant. In the short-term, however, the growth in this category of cost appears to have accelerated, potentially in relation to the Company's increased levels of investments over the period. Accordingly, my model uses the past three years, 2013 through 2015, to establish the escalation rate for this category of cost. Use of this period produces a higher r-squared value than any other period that I evaluated in the historic data.