BEFORE THE

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION) DOCKETS UE-190334, UG-190335, and) UE-190222 (Consolidated)
Complainant,))
v.))
AVISTA CORPORATION d/b/a)
AVISTA UTILITIES)
)
Respondent.)
)

EXHIBIT BGM-9 ELECTRIC REVENUE GROWTH STUDY

Electric Revenue Growth Rate Calculation - Rate Year 2:	(a)	(b)	(c)
Category	Growth Rate	Revenue Portion of Category	Growth Rate % (a) x (b)
Operating Expenses (1)	1.69%	35.55%	0.60%
Depreciation/Amortization	4.30%	21.94%	0.94%
Taxes Other than Income	3.23%	10.05%	0.32%
Net Plant After ADFIT	2.11%	32.46%	0.69%
Annual Growth In Sales Revenue	_	100.00%	-0.88%
Total Revenue Growth Rate %			1.67%
(1) Reflects a 30 basis points efficiency adjustment in O&M expo	enses.		

Revenue Growth Rate Analysis - Electric Services

Growth Rate Calculations

	Growth	Account		Weighted
	Rate	Amount	Wieghting	Weighted Rate
Depreciation Expense				
Production and Transmission	1.01%	28,724	33.6%	0.34%
Distribution	5.07%	32,066	37.5%	1.90%
General	7.13%	24,798	29.0%	2.07%
			Growth Factor	4.30%
Operations Expense				
Production and Transmission	2.02%	58,395	35.8%	0.72%
Distribution	1.81%	23,753	14.5%	0.26%
Customer Accounting	3.78%	28,479	17.4%	0.66%
Customer Service	-0.46%	1,551	0.9%	0.00%
General and Administrative	1.11%	51,109	31.3%	0.35%
			Growth Factor	1.99%
Taxes Other than Income Taxes				
Production and Transmission	3.65%	16,795	37.1%	1.36%
Distribution	2.98%	28,420	62.9%	1.87%
			Growth Factor	3.23%
Net Plant				
Intangible	4.61%	119,990	8.0%	0.37%
Production	1.39%	540,099	35.9%	0.50%
Transmission	3.54%	336,753	22.4%	0.79%
Distribution	4.75%	751,398	49.9%	2.37%
General	6.68%	167,408	11.1%	0.74%
ADIT	9.74%	(411,008)	-27.3%	-2.66%
			Growth Factor	2.11%

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

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

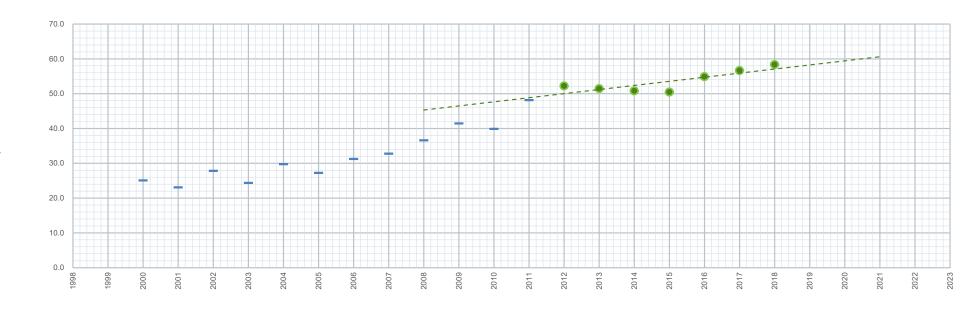
Narrative

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
P/T Operations Expense Less: Power Supply	78,721 (53,596)	47,157 (24,026)	101,475 (73,610)	132,098 (107,691)	101,545 (71,757)	105,374 (78,074)	104,260 (72,978)	102,890 (70,079)	117,123 (80,476)	87,599 (46,101)	147,107 (107,172)	145,634 (97,441)	131,795 (79,551)	143,904 (92,437)	120,307 (69,474)	140,485 (89,988)	136,385 (81,468)	136,766 (80,087)	132,992 (74,597)
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	54,917	56,679	58,395

Slope of Best-Fit Line	1,177
R -Squared of Best-Fit	0.67039
Annual Growth Rate (% of 2018)	2.02%
1-year Growth Rate	2.02%

Statistics (Over Highlighted Period)

Over the period 2012 through 2018 production and transmission O&M has remained relatively flat. My model uses that period to develop the escalation factor for this category of cost.



Statistics (Over Highlighted Period)

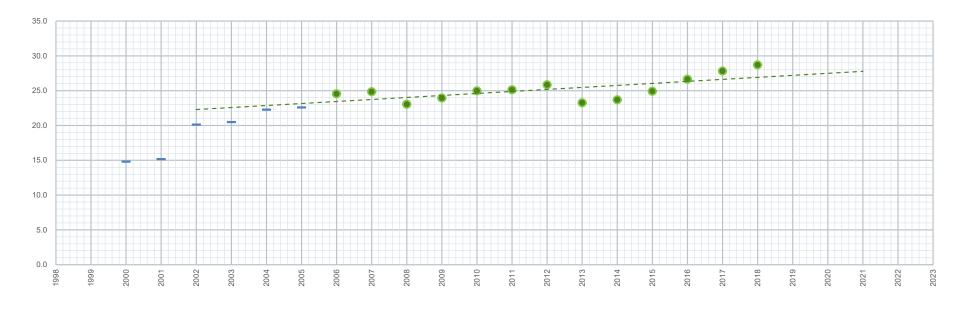
Cost / Rate Base Category: Production & Transmission Depreciation Expense

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

Narrative

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
P/T Depreciation (per CBR) Less: Reg. Amort. in Hist. P/T Depr.	(3,114) 17,964	9,152 6,050	13,808 6,349	14,915 5,608	22,879 (567)	13,812 8,817	25,745 (1,168)	21,795 3,082	22,000 1,076	22,266 1,703	22,129 2,879	25,158	25,872	23,284	23,715	24,947	26,677	27,841	28,724
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	26,677	27,841	28,724

 Production and transmission depreciation expense have been relatively flat over the period. My model uses the escalation period of 2006 through 2018.



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	2016	2017	2018
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	14,654	14,743	16,795
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	14,654	14,743	16,795

My model uses the escalation period of 2005 through 2018 for this category of cost.

Statistics (Over Highlighted Period)

1-year Growth Rate

\$ Millions

Narrative

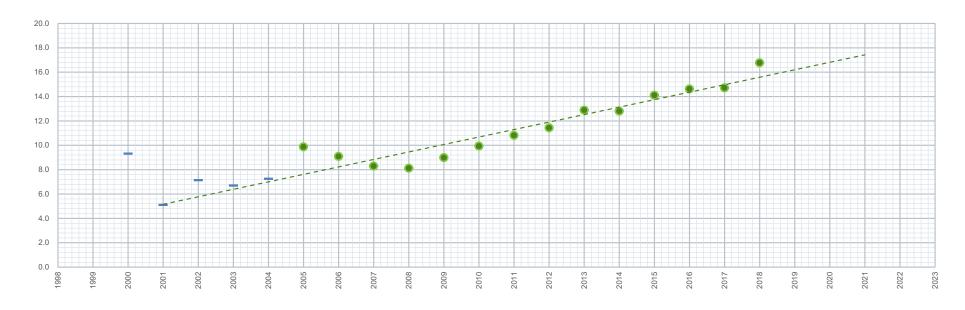
 Slope of Best-Fit Line
 613

 R -Squared of Best-Fit
 0.87681

 Annual Growth Rate (% of 2018)
 3.65%

0.87681 of 2018) 3.65%

3.65%



Statistics (Over Highlighted Period)

\$ Millions

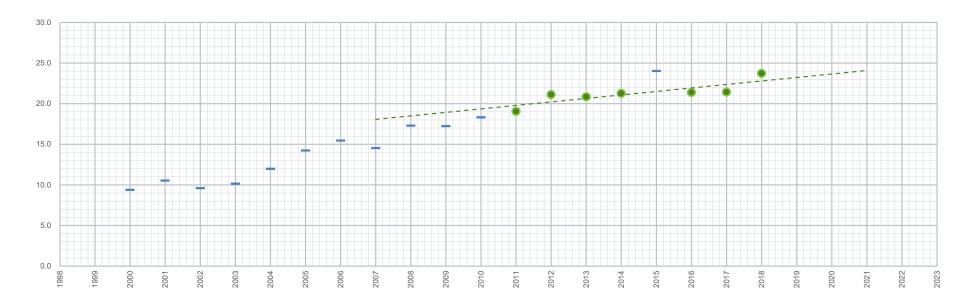
Cost / Rate Base Category: <u>Distribution O&M Expense</u>

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	2016	2017	2018
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	21,415	21,461	23,753
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	21,415	21,461	23,753

Narrative

The distribution O&M category of cost has experienced fairly steady growth over the past fifteen years. In the most recent five years (2012 through 2018), 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. In addition, this category of cost experienced an increase in 2015, followed by a corresponding reduction in 2016. Accordingly, I have excluded 2015 from my trend calculation.



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	2016	2017	2018
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	27,287	27,300	28,420
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	27,287	27,300	28,420

Statistics	(Over Highlighted Period)
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 Slope of Best-Fit Line
 847

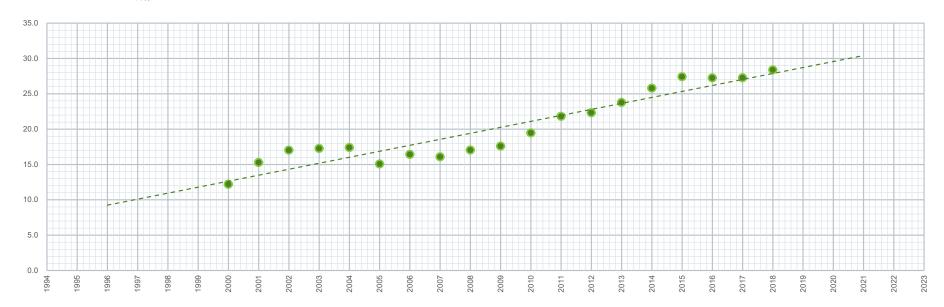
 R -Squared of Best-Fit
 0.88870

 Annual Growth Rate (% of 2018)
 2.98%

 1-year Growth Rate
 2.98%

Narrative

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. Given these increases and reductions I have used the entire history for this category.



Statistics (Over Highlighted Period)

\$ Millions

Cost / Rate Base Category: <u>Distribution Depreciation Expense</u>

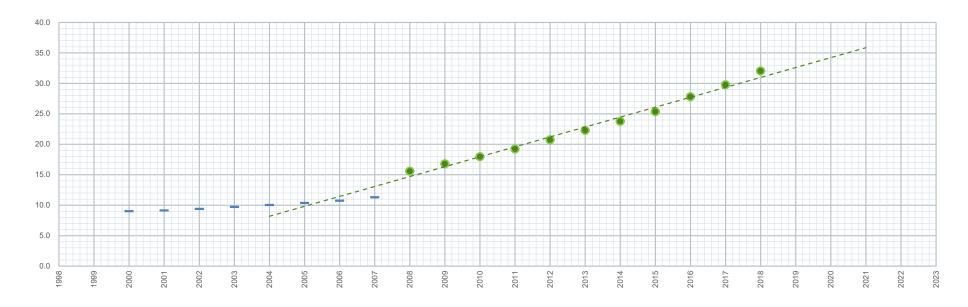
Selected trend period highlighted green and displayed as green dots in figure

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
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	27,819	29,786	32,066
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	27,819	29,786	32,066

Slope of Best-Fit Line 1,627 R -Squared of Best-Fit 0.98639 Annual Growth Rate (% of 2018) 5.07% 1-year Growth Rate 5.07%

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 2016 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.



Cost / Rate Base Category: <u>Customer Accounting and Sales</u>

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

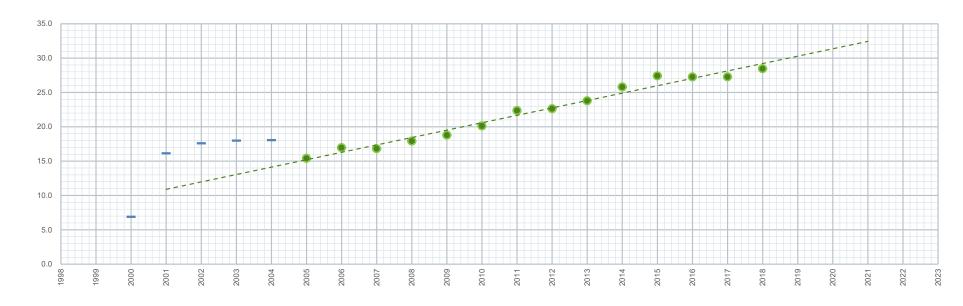
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Customer Accounting	5,768	15,462	16,996	17,286	17,401	14,988	16,307	16,156	17,416	18,216	20,029	22,459	22,699	23,809	25,821	27,448	27,287	27,300	28,420
Sales Expense	1,071	734	628	734	686	430	657	682	571	660	176	4	5	5	-	-	-	-	59
Less: ResEx	115	10	52	44	49	43	47	25	16	18	28	21	38	-	-	-	-	-	-
Less: DSM Excise	(24)	(35)	(42)	(42)	(47)	(30)	(30)	(30)	(55)	(86)	(88)	(91)	(77)	-	-	-	-	-	-
Total Customer Accounting and Sales	6,930	16,171	17,634	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	27,287	27,300	28,479

Statistics (Over Highlighted Period)	
Slope of Best-Fit Line	1,077
R -Squared of Best-Fit	0.97576
Annual Growth Rate (% of 2018)	3.78%
1-year Growth Rate	3 78%

\$ Millions

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. Accordingly, my model uses the period 2005 through 2018 as the period for this category of cost.



Cost / Rate Base Category: <u>Customer Service and Information</u>

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	2016	2017	2018
Customer Service and Information Less: DSM Cost	5,704 (3,443)	5,381 (5,074)	6,261 (6,064)	6,620 (6,130)	266 (6.747)	7,127 (6,608)	1,159 (6,580)	7,472 (6,667)	12,847 (12,092)	19,736 (18,880)	20,832 (19,483)	21,292 (20,102)	18,487 (16,906)	1,516 -	1,383	1,454 -	1,406	1,449	1,551
		,		,		,		,			,	, ,	,						
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	1,406	1,449	1,551

Statistics	(Over	Highlighted Period)	Ī

\$ Millions

 Slope of Best-Fit Line
 (7)

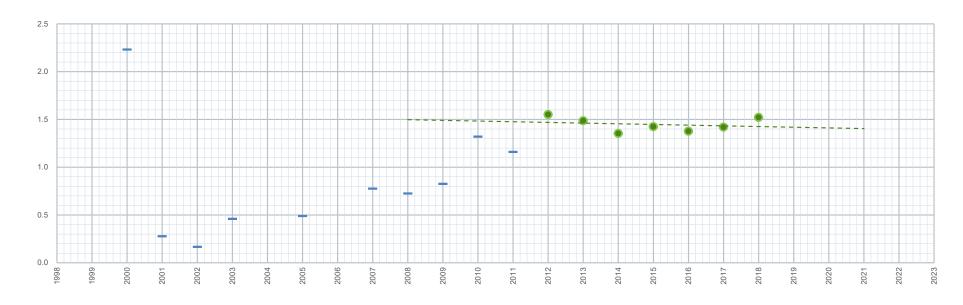
 R -Squared of Best-Fit
 0.04372

 Annual Growth Rate (% of 2018)
 -0.46%

 1-year Growth Rate
 -0.46%

Narrative

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. That is the period I have used in my analysis.



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	2016	2017	2018
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	48,989	47,166	51,109
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	48,989	47,166	51,109

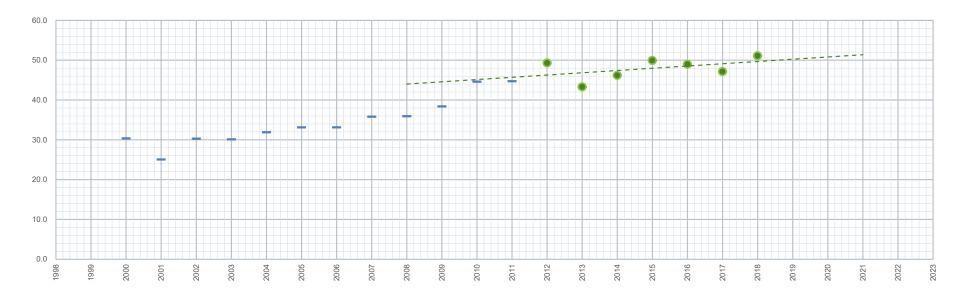
Slope of Best-Fit Line	567
R -Squared of Best-Fit	0.21400
Annual Growth Rate (% of 2018)	1.11%
1-year Growth Rate	1.11%

Statistics (Over Highlighted Period)

\$ Millions

Narrative

Administrative and general operations expense increased at a fairly steady rate over the period 2000 through 2010. From 2012 through 2018, the rate of growth appears to have leveled-off slightly, showing a slower growth trend.



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	2016	2017	2018
Adminisrtative and General Less: DSM Cost Less: Project Compass	3,998 (7)	4,414 (11)	6,606 (13)	6,659 (13)	6,072 (14)	6,537 (14)	6,459 (14)	6,739 (14)	7,187 (25)	7,688 (40)	9,277 (41)	10,906 (42)	12,517 (35)	14,721 -	16,947 -	21,503 -	23,877 - (3,201)	25,247 - (3,201)	27,999 - (3,201)
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	21,503	20,676	22,046	24,798

Statistics (Over Highlighted Period)

Narrative

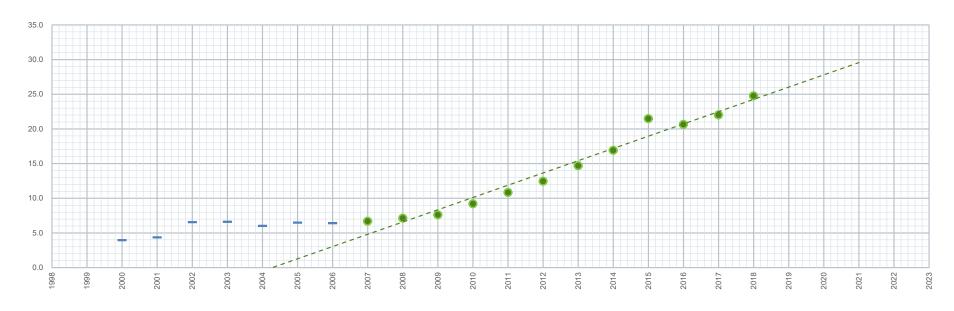
 Slope of Best-Fit Line
 1,768

 R -Squared of Best-Fit
 0.96716

 Annual Growth Rate (% of 2018)
 7.13%

 1-year Growth Rate
 7.13%

\$ Millions



Cost / Rate Base Category: Intangible Net Plant

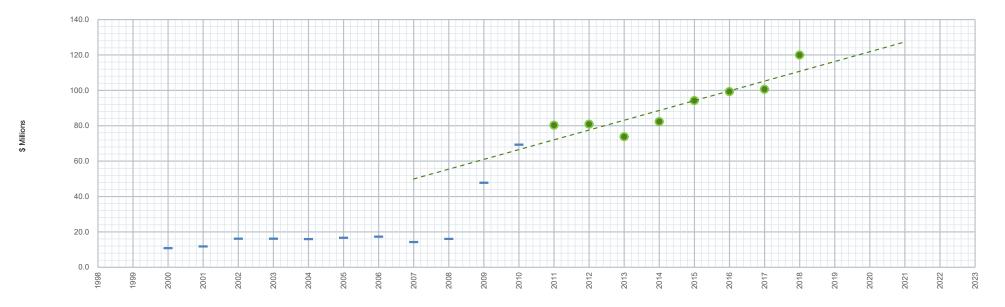
Selected trend period highlighted green and displayed as green dots in figure

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Gross Plant Depreciation Reserve	15,127 (4,279)	16,340 (4.501)	20,910 (4.721)	21,299 (5,095)	21,374 (5.397)	22,459 (5.729)	23,458	20,632	23,321 (7.252)	57,116 (9.302)	81,955 (12,606)	84,081 (3,744)	85,247 (4.369)	91,466 (17.667)	102,620 (20,242)	144,970 (24,943)	156,057 (30,914)	163,474 (37,059)	189,271 (43,469)
Less: Project Compass (ICNU DR 175)	(4,270)	(, ,	, ,		(-, ,	(-, -,	(-, ,	(=,= :=)	(, - ,	(-,,		(-, ,	(,,	(17,007)	(20,242)	(25,812)	(25,812)	(25,812)	(25,812)
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	94,215	99,331	100,603	119,990

Statistics (Over Highlighted Period)	
Slope of Best-Fit Line	5,531
R -Squared of Best-Fit	0.80454
Annual Growth Rate (% of 2018)	4.61%
1-year Growth Rate	4.61%

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. Accordingly, my model uses the most recent flat trend that has occured over the period 2011 through 2016. I also make an adjustment for project compas, which was an extraordinary investment.



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	2016	2017	2018
Gross Plant Depreciation Reserve	455,498 (155,496)	460,292 (163,566)	545,002 (171,572)	556,067 (185,180)		615,624 (208,203)	649,965 (222,098)	645,576 (230,738)	657,099 (243,189)	677,646 (255,390)	692,689 (272,340)	706,894 (286,300)	717,448 (300,170)	738,315 (314,599)	746,101 (325,531)	779,441 (342,899)	832,833 (351,625)	879,704 (352,091)	905,266 (365,167)
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	481,208	527,613	540,099

Statistics (Over Highlighted Period)

Slope of Best-Fit Line

7,483 0.68573

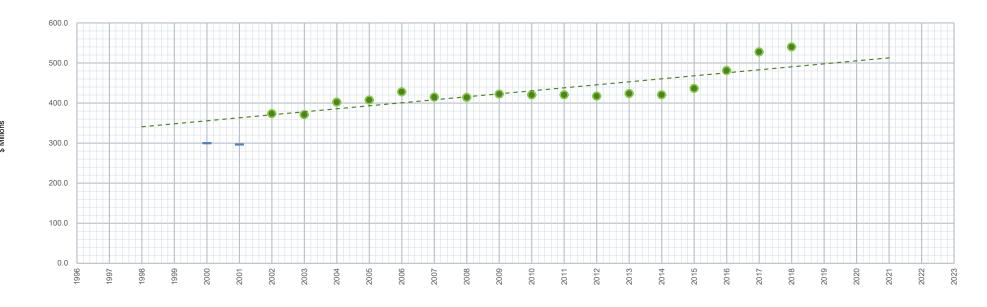
 R -Squared of Best-Fit
 0.68573

 Annual Growth Rate (% of 2018)
 1.39%

 1-year Growth Rate
 1.39%

Narrative

Net production plant has remained relatively flat over the past ten years, with a slight increase in 2015. Accordingly, my model uses the period of 2002 to 2018 for this category of cost.



Cost / Rate Base Category: <u>Transmission Net Plant</u>

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	2016	2017	2018
Gross Plant Depreciation Reserve	181,627 (60,746)	191,517 (63,899)	186,550 (67,026)	196,937 (72,342)	213,539 (76,619)	224,696 (81,337)	244,435 (86,765)	259,532 (90,140)	289,302 (95,026)	301,090 (100,649)	312,505 (106,041)	328,012 (111,144)	342,382 (116,316)	359,941 (122,308)	371,971 (123,869)	401,700 (129,936)	430,613 (135,624)	451,003 (136,838)	477,024 (140,271)
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	294,989	314,165	336,753

Statistics (Over Highlighted Period)

Narrative

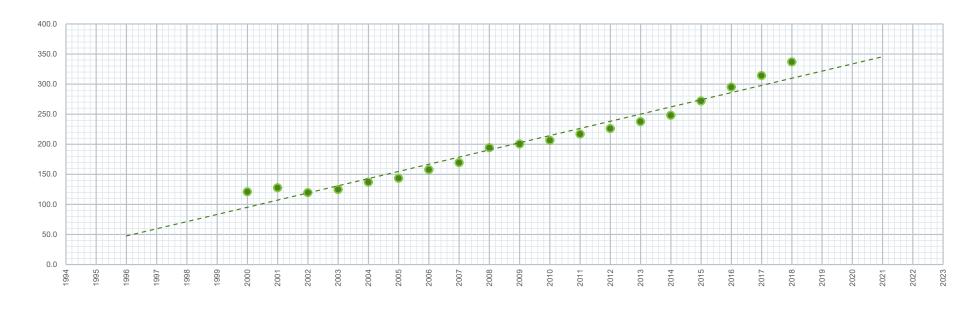
 Slope of Best-Fit Line
 11,915

 R -Squared of Best-Fit
 0.96188

 Annual Growth Rate (% of 2018)
 3.54%

 1-year Growth Rate
 3.54%

Net transmission plant has grown relatively steadily over the past ten years. Accordingly, my model uses the escalation period of 2000 to 2018 for this category of cost.



Cost / Rate Base Category: <u>Distribution Net Plant</u>

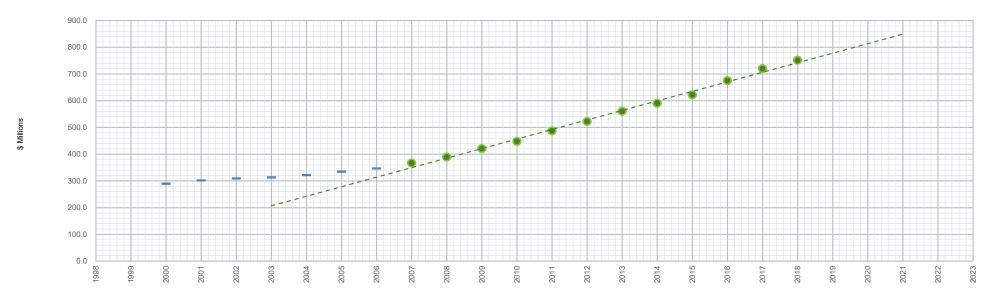
Selected trend period highlighted green and displayed as green dots in figure

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Gross Plant Depreciation Reserve	398,952 (109,404)	416,914 (115,082)	429,987 (120,715)	443,649 (130,289)	459,739 (137,991)	480,886 (146,488)	502,838 (156,264)		561,248 (172,026)	,	642,143 (194,593)	696,082 (209,101)	743,732 (221,408)	796,640 (236,201)	842,795 (252,722)	895,055 (273,578)	970,455 (295,383)	1,033,739 (314,013)	1,086,668 (335,270)
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	675,072	719,726	751,398

Statistics (Over Highlighted Period)	
Slope of Best-Fit Line	35,673
R -Squared of Best-Fit	0.99445
Annual Growth Rate (% of 2018)	4.75%
1-year Growth Rate	4.75%

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 2018. During the second trend period, distribution plant has increased at a greater rate. My model uses the escalation period of 2007 to 2018 for this category of cost.



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	2016	2017	2018
Gross Plant Depreciation Reserve	58,402 (24,757)	59,846 (26,042)	59,771 (27,317)	60,444 (29,483)	63,155 (31,226)	65,299 (33,149)	80,110 (35,361)	81,368 (36,737)	91,205 (39,933)	98,727 (39,153)	120,996 (43,819)	140,218 (56,694)	155,104 (61,871)	179,134 (58,357)	196,867 (65,720)	212,726 (73,050)	233,266 (80,093)	242,339 (85,360)	260,548 (93,140)
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	153,173	156,979	167,408

 Slope of Best-Fit Line
 11,180

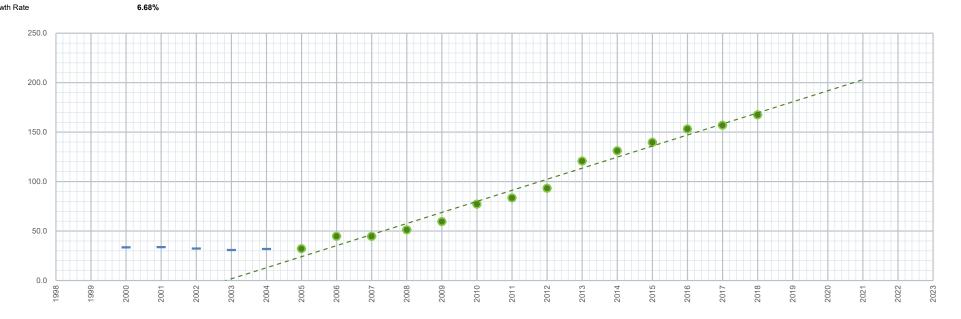
 R -Squared of Best-Fit
 0.97986

 Annual Growth Rate (% of 2018)
 6.68%

 1-year Growth Rate
 6.68%

Statistics (Over Highlighted Period)

Narrative



Statistics (Over Highlighted Period)

Cost / Rate Base Category: Accumulated Deferred Income Taxes

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

Narrative

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
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	353,900	396,851	411,008
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	353,900	396,851	411,008

 Slope of Best-Fit Line
 40,045

 R -Squared of Best-Fit
 0.97792

 Annual Growth Rate (% of 2018)
 9.74%

 1-year Growth Rate
 9.74%

