Avista BCP Adjustments Analysis:

This analysis updates the assumptions used for the CPA analysis for the 2016-2017 Biennium with figures from the RTF and Draft 7th Power Plan. All adjusted and CPA savings amounts are 20% of the 10 year cumulative CPA savings.

Residential Light Bulb UES Comparison

To adjust the CPA the Ratio of Updated UES/CPA UES was applied to the annual savings for that specific measure. The install is assumed to be 50/50 CFL/LED since there is only a single measure type in the CPA.

Table 1: Residential Lighting UES Updates

CPA				**RTF (ResLighting_Bulbs_v4_0.xlsm)**		**Adjusted Ratio**
Location	**Technology**	**Lamp Type**	**UES (kWh)**	**Updated UES (kWh)**	**Measure Name**	
Interior	CFL	General Purpose	23	9	Retail_CFL_General Purpose, Dimmable, and Three-Way_250 to 1049 lumens	.39
Interior	LED	General Purpose	21	15	Retail_LED_General Purpose, Dimmable, and Three-Way_250 to 1049 lumens	.71
Interior	CFL	Specialty	16	28	Retail_CFL_Reflectors and Outdoor_250 to 1049 lumens	1.75
Interior	LED	Specialty	13	13	Retail_LED_Globe_250 to 1049 lumens	1
Exterior	CFL	General Purpose	55	9	Retail_CFL_General Purpose, Dimmable, and Three-Way_250 to 1049 lumens	.16
Exterior	LED	General Purpose	50	15	Retail_LED_General Purpose, Dimmable, and Three-Way_250 to 1049 lumens	.3

Table 2: Residential Lighting Potential Adjustments

Measure	Current Pro Rata (MWh)	Adjusted Pro Rat (MWh)	Delta (MWh)
Interior Specialty Lighting	916.2	1259.74	343.56
Interior General Purpose	7685.8	4227.2	-3458.6
Exterior General Purpose	2370.1	545.1	-1825.0

Residential Heat Pump Water Heaters

To adjust the CPA the Ratio of Updated UES/CPA UES was applied to the annual savings for that specific measure.

Table 3: Water Heater UES Updates

CPA		RTF Copy of Res_HPWH_v3_0.xlsm		
Measure Name	**UES (kWh)**	**Measure Name**	**UES (kWh)**	**Average UES**
Heat Pump Water Heater <= 55 Gallons	1,800	Tier1_garage_HZ1_0-55gallons	1,069	1,335
		Tier1_basmnt_HZ1_0-55gallons	1,191	
		Tier1_indor2_HZ1_gas_0-55gallons	1,326	
		Tier1_indor2_HZ1_resistheat_0-55gallons	980	
		Tier1_indor2_HZ1_hp85_0-55gallons	1,174	
		Tier2_garage_HZ1_0-55gallons	1,592	
		Tier2_basmnt_HZ1_0-55gallons	1,614	
		Tier2_indor2_HZ1_gas_0-55gallons	1,690	
		Tier2_indor2_HZ1_resistheat_0-55gallons	1,230	
		Tier2_indor2_HZ1_hp85_0-55gallons	1,484	

Table 4: Water Heating Potential Adjustments

Measure	Current Pro Rata (MWh)	Adjusted Pro Rat (MWh)	Delta (MWh)
Water Heating	357.7	265.4	-92.3

Residential Behavior Program

Remove the ProRata Share from the CPA and add in estimated savings for next Biennium.

Table 5: Residential Behavior Program Potential Adjustments

Measure	Current Pro Rata (MWh)	Adjusted Pro Rat (MWh)	Delta (MWh)
Residential Behavior Program	185	13,110	12,925

Clothes Washers

When clothes washers were updated at the RTF and NEBs were proper included it would adjust the BCP target higher.

Table 6: Residential Clothes Washers Potential Adjustments

Measure	Current Pro Rata (MWh)	Adjusted Pro Rat (MWh)	Delta (MWh)
Clothes Washers	0	157	157

Residential Ductless Heat Pumps

Like Pacific Corp the CPA initially had 0 due to cost effectiveness, but this was not adjusted up by Avista, because they were not cost effective (TRC =0.77).

Appliance Recycling

As older models have been replaced and only newer models left the RTF revised the savings estimates downward which made this measure not cost-effective and discontinued mid 2015.

Table 7: Residential Appliance Recycling Potential Adjustments

Measure	Current Pro Rata (MWh)	Adjusted Pro Rat (MWh)	Delta (MWh)
Appliance Recycling	464.7	0	-464.7

Non-Residential Solid State Lighting

When the CPA was performed it was based off of an EIA study from December 2012, that forecasted an increase in efficacy and decrease in cost of LED fixtures. These figures were updated with information from the upcoming 7th Power Plan. The savings we adjusted by the ratio of the 7th Power Plan/CPA.

Table 8: Non-Residential Efficacy Adjustment based off of the 7th Power Plan

Application	Source	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Linear Fluorescent	CPA	58	58	58	58	170	170	170	170	170	170
	7th Plan	89	89	89	89	89	89	89	89	89	89
	Ratio	1.53	1.53	1.53	1.53	.52	.52	.52	.52	.52	.52
High Bay	CPA	85	85	85	85	170	170	170	170	170	170
	7th Plan	139	139	139	139	139	139	139	139	139	139
	Ratio	1.63	1.63	1.63	1.63	.82	.82	.82	.82	.82	.82
Screw-in	CPA	73	73	73	73	170	170	170	170	170	170
	7th Plan	73	73	73	73	73	73	73	73	73	73
	Ratio	1	1	1	1	.43	.43	.43	.43	.43	.43

Table 9: Non-Residential Lighting Potential Adjustments

Measure	Current Pro Rata (MWh)	Adjusted Pro Rat (MWh)	Delta (MWh)
Com Int LF	14036	9573	-4464
Com Int HB	3123	2874	-249
Com Int SI	4488	2607	-1881
Com Ext LF	2142	1461	-681
Com Ext HID	2143	1961	-181
Com Ext SI	120	176	56
Ind Int LF	883	526	-357
Ind Int HB	719	698	-21
Ind Int SI	169.2	126	-43.2
Ind Ext LF	119	71	-48
Ind Ext HID	104.1	101	-3
Ind Ext SI	23.6	43.3	19.8

Table 10: Summary of adjustments to the Potential Savings

	10 Year Pro Rata	10 Year Pro Rata	
Measure	CPA (MWh)	Adjusted (MWh)	Net
Res Water Heating	358	265	-93
Res Int Specialty Ltg	916	1260	344
Res Int General Purpose Ltg	7686	4227	-3459
Res Ext General Purpose Ltg	2370	545	-1825
Res Clothes Washers	0	157	157
Res Second Refrigerator	465	0	-465
CPA Behavioral	185	0	-185
Behavioral Estimate	0	13110	13110
Com Int Linear Fluorescent	14036	9572	-4464
Com Int High-Bay Fixtures	3123	2874	-249
Com Int Screw-in	4488	2607	-1881
Com Ext Linear Fluorescent	2142	1461	-681
Com Ext HID	2143	1961	-182
Com Ext Screw-in	120	176	56
Ind Int Linear Fluorescent	169	126	-43
Ind Int High-Bay Fixtures	719	698	-21
Ind Int Screw-in	883	526	-357
Ind Ext Linear Fluorescent	24	43	19
Ind Ext HID	104	101	-3
Ind Ext Screw-in	119	71	-48
Total Net			-270