**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 |