



# **Integrated Resource Plan 2019 IRP Conservation Potential Assessment (CPA) Webinar - July 23, 2018**





# CPA Measure List

# Measure List Spreadsheets



- The measure list spreadsheets contains the measures/ technologies/ options considered in CPA
- Measures are separated into three (3) categories:
  - Equipment Measures
  - Non-Equipment Measures
  - Emerging Technologies

# Measure Source Hierarchy



| Priority | Resource                           | Details  |
|----------|------------------------------------|--|
| 1        | Client program data                | Project Information and Evaluations              |
| 2        | Well-Vetted Sources Within Region  | RTF, NWPCC 7th Power Plan, CA DEER in California |
| 3        | National DOE Sources               | AEO 2017, EIA Reference Cases, ENERGY STAR, etc. |
| 4        | Well-Vetted Sources Outside Region | CA DEER for other states, etc.                   |
| 5        | AEG Technical Research             | Various Resources as Required                    |



# Measure List Tab

- Multiple equipment options may be considered – most efficient option is prioritized (under an LCOE threshold)

|    | B       | C          | D                       | E        | F   | G   |
|----|---------|------------|-------------------------|----------|---|---|
| 1  | End Use | Technology | Label                   | Emerging | Revisions from Previous Study (if Applicable) | Measure Description   |
| 8  | Cooling | Room AC    | CEER 11.2               |          | EER 11.2                                      | Room air conditioners are designed to cool a single room or space. They incorporate a complete air-cooled refrigeration and air-handling system in an individual package. Room air conditioners come in several forms, including window, through-the-wall, and mini-split systems. Packaged terminal units are also included in this category for the residential sector. As of June 1, 2014, energy efficiency is rated according to the size and product class of the unit using the Combined Energy Efficiency Ratio (CEER). |
| 9  | Cooling | Room AC    | CEER 12.0 (ENERGY STAR) |          | EER 12.1 (ENERGY STAR 2016)                   |   |
| 10 | Cooling | Room AC    | CEER 13.0               |          | EER 13.0                                      |   |
| 11 | Cooling | Room AC    | Evaporative Room AC     |          |   |   |



# Measure List Changes Tab

- Includes comparison with prior-study measure lists
- Emerging tech screen includes more details where new measures were excluded

| Residential - Equipment Removed / Evaluate Next Time |  |                 |  |
|--|--|-----------------|--|
| End Use  | Technology                                     | Still In Study? | Description  |
| Appliances   | Freezer - ENERGY STAR - Tier 3, Tier 4, Tier 5 | FALSE           | Removed various ENERGY STAR tiers for consistency with level in RTF workbook                                   |
| Electronics  | Personal Computers - ENERGY STAR v7.0          | FALSE           | Left out of study since 7.0 specifications are in draft mode; no data available. Will revisit.                 |
| Electronics  | Laptops - ENERGY STAR v7.0                     | FALSE           | Left out of study since 7.0 specifications are in draft mode; no data available. Will revisit.                 |
| Electronics  | Small Network Equipment - ENERGY STAR          | FALSE           | Left out of study since specifications are too new and no consumption or cost data is available. Will revisit. |
| Cooling  | Evaporative AC - Advanced Cooler Media         | FALSE           | Screened out as experimental emerging technology   |

# Emerging Technology Tab



| Residential - Emerging Technology Measure Screen   |                 |                         |                              |                |  |   |                |
|--|-----------------|-------------------------|------------------------------|----------------|--|---|----------------|
| Measure  | Added to Study? | Enough Data to Include? | Biggest Estimation Challenge | Recommendation | Measure Description  | Screen  | Current Source |
| Advanced New Construction Design - Zero Net Energy | FALSE           | TRUE                    | Cost                         | Include        | Zero net energy (ZNE) buildings are ultra-efficient new construction and deep energy retrofit projects that consume only as much energy as they produce from clean, renewable resources. | This measure could be added, and BPA has "Zero Energy Ready New Multifamily Construction" measure.  | BPA, PG&E      |
| Integrated Heat Pump - Combination HVAC and DHW    | FALSE           | TRUE                    | Cost                         | Include        | A heat pump system providing residential heating, cooling and domestic water heating. Heat pump can be central (ducted) or ductless air-source heat pump.                                | Incremental cost is significant, but possible to include measure. NEEA has studied DHP + DHW, showing that this measure is important to the region. These have been widely implemented in some foreign markets as well. | E3TNW, NEEA    |



# **Base-Year Characterization**



# Base-Year Data – Control Totals



|    | P | Q | R                     | S                 | T        | U                   | V | W | X                     | Y                 | Z         | AA                  | AB | AC |
|----|---|---|-----------------------|-------------------|----------|---------------------|---|---|-----------------------|-------------------|-----------|---------------------|----|----|
| 1  |   |   | Idaho                 |                   |          |                     |   |   | Utah                  |                   |           |                     |    |    |
| 2  |   |   |                       |                   |          |                     |   |   |                       |                   |           |                     |    |    |
| 3  |   |   | Residential           |                   |          |                     |   |   | Residential           |                   |           |                     |    |    |
| 4  |   |   | Segment               | Households        | 2016 MWh | Intensity (kWh/HH)  |   |   | Segment               | Households        | 2016 MWh  | Intensity (kWh/HH)  |    |    |
| 5  |   |   | Single Family         | 47,948            | 627,845  | 13,094              |   |   | Single Family         | 571,668           | 6,182,160 | 10,814              |    |    |
| 6  |   |   | Multifamily           | 9,249             | 62,199   | 6,725               |   |   | Multifamily           | 169,447           | 1,002,560 | 5,917               |    |    |
| 7  |   |   | Mobile Home           | 6,314             | 80,245   | 12,709              |   |   | Mobile Home           | 18,891            | 145,270   | 7,690               |    |    |
| 8  |   |   | Total                 | 63,511            | 770,289  | 12,128              |   |   | Total                 | 760,006           | 7,329,990 | 9,645               |    |    |
| 9  |   |   |                       |                   |          |                     |   |   |                       |                   |           |                     |    |    |
| 10 |   |   |                       |                   |          |                     |   |   |                       |                   |           |                     |    |    |
| 11 |   |   |                       |                   |          |                     |   |   |                       |                   |           |                     |    |    |
| 12 |   |   | Commercial            |                   |          |                     |   |   | Commercial            |                   |           |                     |    |    |
| 13 |   |   | Segment               | Floor Area (kft²) | 2016 MWh | Intensity (kWh/ft²) |   |   | Segment               | Floor Area (kft²) | 2016 MWh  | Intensity (kWh/ft²) |    |    |
| 14 |   |   | Large Office          | 1,156             | 26,663   | 23.1                |   |   | Large Office          | 82,501            | 1,868,204 | 22.6                |    |    |
| 15 |   |   | Small Office          | 6,205             | 121,902  | 19.6                |   |   | Small Office          | 71,092            | 1,370,843 | 19.3                |    |    |
| 16 |   |   | Large Retail          | 749               | 16,709   | 22.3                |   |   | Large Retail          | 21,616            | 473,429   | 21.9                |    |    |
| 17 |   |   | Small Retail          | 3,606             | 59,646   | 16.5                |   |   | Small Retail          | 46,371            | 752,943   | 16.2                |    |    |
| 18 |   |   | Restaurant            | 496               | 24,956   | 50.3                |   |   | Restaurant            | 9,225             | 455,376   | 49.4                |    |    |
| 19 |   |   | Grocery               | 611               | 31,925   | 52.2                |   |   | Grocery               | 6,930             | 355,251   | 51.3                |    |    |
| 20 |   |   | Health                | 657               | 21,198   | 32.3                |   |   | Health                | 12,368            | 391,850   | 31.7                |    |    |
| 21 |   |   | College               | 3,969             | 71,247   | 17.9                |   |   | College               | 18,862            | 332,318   | 17.6                |    |    |
| 22 |   |   | School                | 2,818             | 27,097   | 9.6                 |   |   | School                | 37,763            | 356,458   | 9.4                 |    |    |
| 23 |   |   | Lodging               | 548               | 7,964    | 14.5                |   |   | Lodging               | 32,568            | 464,476   | 14.3                |    |    |
| 24 |   |   | Warehouse             | 6,545             | 32,989   | 5.0                 |   |   | Warehouse             | 174,662           | 864,130   | 4.9                 |    |    |
| 25 |   |   | Warehouse, Controlled | 1,383             | 31,999   | 23.1                |   |   | Warehouse, Controlled | 3,384             | 76,836    | 22.7                |    |    |
| 26 |   |   | Data Center           | 2                 | 381      | 184.0               |   |   | Data Center           | 1,898             | 342,753   | 180.6               |    |    |
| 27 |   |   | Miscellaneous         | 4,659             | 57,213   | 12.3                |   |   | Miscellaneous         | 110,188           | 1,328,339 | 12.1                |    |    |
| 28 |   |   | Total                 | 33,404            | 531,889  | 15.9                |   |   | Total                 | 629,426           | 9,433,205 | 15.0                |    |    |

# Market Profile/Saturation - Residential



| Single Family        |         |
|----------------------|---------|
| Total Households:    | 571,668 |
| Control Total (GWh): | 6,182   |
| Intensity (kWh/HH):  | 10,814  |

- Residential profile represents consumption for typical home in 2016
- Saturation - % of homes the electrically-powered technology is present
- UEC – annual energy consumed per unit when installed
- Intensity – Saturation\*UEC
  - Model is calibrated to total household intensity
- Usage – Intensity\*Households
  - Total GWh @generator

Electric Market Profiles

| End Use           | Technology               | Saturation | EUI (kWh) | Intensity (kWh/Sqft) | Usage (GWh) |
|-------------------|--------------------------|------------|-----------|----------------------|-------------|
| Cooling           | Central AC               | 76.2%      | 3,137     | 2,390                | 1,366.1     |
| Cooling           | Room AC                  | 3.9%       | 1,405     | 55                   | 31.3        |
| Cooling           | Air-Source Heat Pump     | 1.6%       | 3,299     | 52                   | 29.6        |
| Cooling           | Geothermal Heat Pump     | 0.4%       | 2,904     | 12                   | 7.0         |
| Cooling           | Evaporative AC           | 12.6%      | 707       | 89                   | 50.9        |
| Space Heating     | Electric Room Heat       | 1.5%       | 14,673    | 219                  | 125.4       |
| Space Heating     | Electric Furnace         | 6.2%       | 16,537    | 1,032                | 590.2       |
| Space Heating     | Air-Source Heat Pump     | 1.6%       | 9,105     | 143                  | 81.6        |
| Space Heating     | Geothermal Heat Pump     | 0.4%       | 4,766     | 20                   | 11.4        |
| Space Heating     | Secondary Heating        | 31.0%      | 429       | 133                  | 75.9        |
| Water Heating     | Water Heater (<= 55 Gal) | 8.8%       | 3,334     | 295                  | 168.6       |
| Water Heating     | Water Heater (> 55 Gal)  | 0.7%       | 3,525     | 25                   | 14.5        |
| Interior Lighting | General Service Screw-in | 100.0%     | 593       | 593                  | 339.2       |
| Interior Lighting | Linear Lighting          | 100.0%     | 86        | 86                   | 49.1        |
| Interior Lighting | Exempted Lighting        | 100.0%     | 227       | 227                  | 130.0       |
| Exterior Lighting | Screw-in                 | 100.0%     | 329       | 329                  | 188.1       |
| Appliances        | Clothes Washer           | 98.3%      | 84        | 83                   | 47.4        |
| Appliances        | Clothes Dryer            | 76.0%      | 810       | 616                  | 352.2       |
| Appliances        | Dishwasher               | 91.7%      | 131       | 120                  | 68.9        |
| Appliances        | Refrigerator             | 99.9%      | 658       | 657                  | 375.6       |
| Appliances        | Freezer                  | 61.2%      | 563       | 344                  | 196.9       |
| Appliances        | Second Refrigerator      | 42.8%      | 906       | 388                  | 221.6       |
| Appliances        | Stove/Oven               | 68.6%      | 484       | 332                  | 189.7       |
| Appliances        | Microwave                | 98.5%      | 136       | 134                  | 76.6        |
| Electronics       | Personal Computers       | 80.9%      | 176       | 142                  | 81.4        |
| Electronics       | Monitor                  | 97.3%      | 67        | 65                   | 37.4        |
| Electronics       | Laptops                  | 267.4%     | 46        | 123                  | 70.4        |
| Electronics       | TVs                      | 230.3%     | 124       | 286                  | 163.4       |
| Electronics       | Printer/Fax/Copier       | 80.9%      | 46        | 37                   | 21.3        |
| Electronics       | Set-top Boxes/DVRs       | 267.2%     | 108       | 288                  | 164.7       |
| Electronics       | Devices and Gadgets      | 100.0%     | 92        | 92                   | 52.6        |
| Miscellaneous     | Electric Vehicles        | 0.4%       | 4,727     | 20                   | 11.3        |
| Miscellaneous     | Pool Pump                | 2.5%       | 3,826     | 97                   | 55.5        |
| Miscellaneous     | Pool Heater              | 1.0%       | 3,845     | 38                   | 21.7        |
| Miscellaneous     | Hot Tub/Spa              | 6.0%       | 2,221     | 133                  | 75.9        |
| Miscellaneous     | Furnace Fan              | 89.7%      | 225       | 201                  | 115.1       |
| Miscellaneous     | Well pump                | 4.8%       | 613       | 29                   | 16.9        |
| Miscellaneous     | Miscellaneous            | 100.0%     | 887       | 887                  | 506.9       |
| Total             |                          |            |           | 10,814               | 6,182       |

# Market Profile/Saturation - Commercial



|                                       |              |
|---------------------------------------|--------------|
|                                       | Small Office |
| Total Floor Area (kft <sup>2</sup> ): | 71,092       |
| Control Total (GWh):                  | 1,371        |
| Intensity (kWh/ft <sup>2</sup> ):     | 19           |

- Commercial profile represents consumption for typical building square foot in 2016
- EUI – energy utilization index
  - Different from UEC, kWh consumed per square foot when technology is present (not consumption per technology unit)
- Intensity from 2014 CBSA, varied by state due to weather and other building characteristics

| Electric Market Profiles |                               |            |           |                                  |              |
|--------------------------|-------------------------------|------------|-----------|----------------------------------|--------------|
| End Use                  | Technology                    | Saturation | EUI (kWh) | Intensity (kWh/ft <sup>2</sup> ) | Usage (GWh)  |
| Cooling                  | Air-Cooled Chiller            | 0.0%       | 0.0       | 0.0                              | 0.0          |
| Cooling                  | Water-Cooled Chiller          | 0.0%       | 0.0       | 0.0                              | 0.0          |
| Cooling                  | RTU                           | 65.9%      | 6.7       | 4.5                              | 316.4        |
| Cooling                  | PTAC                          | 2.3%       | 7.6       | 0.2                              | 12.5         |
| Cooling                  | PTHP                          | 0.7%       | 7.6       | 0.1                              | 4.0          |
| Cooling                  | Evaporative Central AC        | 0.0%       | 2.7       | 0.0                              | 0.1          |
| Cooling                  | Air-Source Heat Pump          | 14.1%      | 6.7       | 0.9                              | 67.5         |
| Cooling                  | Geothermal Heat Pump          | 7.5%       | 4.1       | 0.3                              | 22.1         |
| Heating                  | Electric Furnace              | 0.9%       | 6.3       | 0.1                              | 3.8          |
| Heating                  | Electric Room Heat            | 16.4%      | 6.0       | 1.0                              | 69.9         |
| Heating                  | PTHP                          | 0.7%       | 4.9       | 0.0                              | 2.6          |
| Heating                  | Air-Source Heat Pump          | 14.1%      | 5.4       | 0.8                              | 54.1         |
| Heating                  | Geothermal Heat Pump          | 7.5%       | 4.4       | 0.3                              | 23.4         |
| Ventilation              | Ventilation                   | 100.0%     | 1.3       | 1.3                              | 90.8         |
| Water Heating            | Water Heater                  | 60.0%      | 0.9       | 0.6                              | 40.4         |
| Interior Lighting        | General Service Lighting      | 100.0%     | 0.3       | 0.3                              | 19.1         |
| Interior Lighting        | Exempted Lighting             | 100.0%     | 0.1       | 0.1                              | 10.3         |
| Interior Lighting        | Linear Lighting               | 100.0%     | 1.7       | 1.7                              | 119.1        |
| Interior Lighting        | High-Bay Lighting             | 100.0%     | 1.6       | 1.6                              | 116.7        |
| Exterior Lighting        | General Service Lighting      | 100.0%     | 0.2       | 0.2                              | 12.6         |
| Exterior Lighting        | Linear Lighting               | 100.0%     | 0.1       | 0.1                              | 5.6          |
| Exterior Lighting        | Area Lighting                 | 100.0%     | 1.7       | 1.7                              | 121.9        |
| Refrigeration            | Walk-in Refrigerator/Freezer  | 0.0%       | 0.0       | 0.0                              | 0.0          |
| Refrigeration            | Reach-in Refrigerator/Freezer | 8.8%       | 0.2       | 0.0                              | 1.0          |
| Refrigeration            | Glass Door Display            | 0.0%       | 0.0       | 0.0                              | 0.0          |
| Refrigeration            | Open Display Case             | 0.0%       | 0.0       | 0.0                              | 0.0          |
| Refrigeration            | Icemaker                      | 5.1%       | 0.3       | 0.0                              | 1.0          |
| Refrigeration            | Vending Machine               | 5.1%       | 0.1       | 0.0                              | 0.4          |
| Food Preparation         | Oven                          | 3.6%       | 0.2       | 0.0                              | 0.5          |
| Food Preparation         | Fryer                         | 3.6%       | 0.3       | 0.0                              | 0.7          |
| Food Preparation         | Dishwasher                    | 3.6%       | 0.4       | 0.0                              | 1.0          |
| Food Preparation         | Hot Food Container            | 3.6%       | 0.1       | 0.0                              | 0.1          |
| Food Preparation         | Steamer                       | 3.6%       | 0.3       | 0.0                              | 0.7          |
| Office Equipment         | Desktop Computer              | 100.0%     | 1.3       | 1.3                              | 95.9         |
| Office Equipment         | Laptop                        | 100.0%     | 0.2       | 0.2                              | 14.8         |
| Office Equipment         | Monitor                       | 100.0%     | 0.2       | 0.2                              | 16.9         |
| Office Equipment         | Server                        | 100.0%     | 0.4       | 0.4                              | 28.2         |
| Office Equipment         | Printer/Copier/Fax            | 100.0%     | 0.2       | 0.2                              | 13.1         |
| Office Equipment         | POS Terminal                  | 20.0%      | 0.1       | 0.0                              | 1.5          |
| Miscellaneous            | Non-HVAC Motors               | 22.0%      | 0.3       | 0.1                              | 4.0          |
| Miscellaneous            | Pool Pump                     | 0.0%       | 0.0       | 0.0                              | 0.0          |
| Miscellaneous            | Pool Heater                   | 0.0%       | 0.0       | 0.0                              | 0.0          |
| Miscellaneous            | Clothes Washer                | 0.0%       | 0.0       | 0.0                              | 0.0          |
| Miscellaneous            | Clothes Dryer                 | 0.0%       | 0.0       | 0.0                              | 0.0          |
| Miscellaneous            | Miscellaneous                 | 100.0%     | 1.1       | 1.1                              | 78.3         |
| <b>Total</b>             |                               |            |           | <b>19.3</b>                      | <b>1,371</b> |

# Market Profile/Saturation - Industrial



|                           |         |
|---------------------------|---------|
|                           | Mining  |
| Total Employment:         | 6,670   |
| Control Total (GWh):      | 1,253   |
| Intensity (kWh/Employee): | 187,802 |

- Industrial profile represents consumption for typical industry per employee in 2016
  - Employment is used as a proxy for energy consumption since floor area is less reliable
  - E.g. 10% of space may use 90% of energy, rest of space could be warehouse
- Began with commercial warehouse market profile by state, added industrial end uses
- Intensity from Bureau of Labor Statistics, cross-referenced with 2014 IFSA

**Electric Market Profiles**

| End Use           | Technology                    | Saturation | EUI (kWh) | Intensity (kWh/Empl.) | Usage (GWh)  |
|-------------------|-------------------------------|------------|-----------|-----------------------|--------------|
| Cooling           | Air-Cooled Chiller            | 2.5%       | 13,736    | 343                   | 2.3          |
| Cooling           | Water-Cooled Chiller          | 2.5%       | 12,950    | 324                   | 2.2          |
| Cooling           | RTU                           | 11.6%      | 15,282    | 1,779                 | 11.9         |
| Cooling           | PTAC                          | 1.7%       | 15,278    | 258                   | 1.7          |
| Cooling           | PTHP                          | 0.0%       | 0         | 0                     | 0.0          |
| Cooling           | Evaporative Central AC        | 0.7%       | 33,738    | 239                   | 1.6          |
| Cooling           | Air-Source Heat Pump          | 3.8%       | 32,132    | 1,229                 | 8.2          |
| Cooling           | Geothermal Heat Pump          | 1.7%       | 30,276    | 512                   | 3.4          |
| Heating           | Electric Furnace              | 0.0%       | 0         | 0                     | 0.0          |
| Heating           | Electric Room Heat            | 100.0%     | 1,211     | 1,211                 | 8.1          |
| Heating           | PTHP                          | 100.0%     | 321       | 321                   | 2.1          |
| Heating           | Air-Source Heat Pump          | 100.0%     | 5,018     | 5,018                 | 33.5         |
| Heating           | Geothermal Heat Pump          | 100.0%     | 834       | 834                   | 5.6          |
| Ventilation       | Ventilation                   | 100.0%     | 59        | 59                    | 0.4          |
| Water Heating     | Water Heater                  | 100.0%     | 1,119     | 1,119                 | 7.5          |
| Interior Lighting | General Service Lighting      | 100.0%     | 229       | 229                   | 1.5          |
| Interior Lighting | Exempted Lighting             | 100.0%     | 57,604    | 57,604                | 384.2        |
| Interior Lighting | Linear Lighting               | 100.0%     | 16,001    | 16,001                | 106.7        |
| Interior Lighting | High-Bay Lighting             | 100.0%     | 24,002    | 24,002                | 160.1        |
| Exterior Lighting | General Service Lighting      | 100.0%     | 16,801    | 16,801                | 112.1        |
| Exterior Lighting | Linear Lighting               | 100.0%     | 45,603    | 45,603                | 304.2        |
| Exterior Lighting | Area Lighting                 | 100.0%     | 1,684     | 1,684                 | 11.2         |
| Refrigeration     | Walk-in Refrigerator/Freezer  | 0.0%       | 0         | 0                     | 0.0          |
| Refrigeration     | Reach-in Refrigerator/Freezer | 0.0%       | 0         | 0                     | 0.0          |
| Refrigeration     | Glass Door Display            | 100.0%     | 1,684     | 1,684                 | 11.2         |
| Refrigeration     | Open Display Case             | 100.0%     | 9,264     | 9,264                 | 61.8         |
| Refrigeration     | Icemaker                      | 100.0%     | 1,684     | 1,684                 | 11.2         |
| <b>Total</b>      |                               |            |           | <b>187,802</b>        | <b>1,253</b> |

# Market Profile/Saturation – Irrigation and Street Lighting



- One end-use, presented on “Base-Year Data”

## Irrigation

| Pump Size        | Service Points | 2016 MWh       | Intensity (kWh/SP) |
|------------------|----------------|----------------|--------------------|
| Pumps (< 100 HP) | 1,932          | 39,953         | 20,677             |
| Pumps (100 HP+)  | 1,116          | 210,250        | 188,393            |
| Other Motors     | 358            | 3,721          | 10,403             |
| <b>Total</b>     | <b>3,406</b>   | <b>253,924</b> | <b>74,552</b>      |

## Street Lighting

| Equivalent Wattage | Fixtures       | 2016 MWh      | Intensity (kWh/Fixt.) |
|--------------------|----------------|---------------|-----------------------|
| Company - 100W     | 21,463         | 11,244        | 524                   |
| Company - 150W     | 2,423          | 1,922         | 794                   |
| Company - 250W     | 2,184          | 2,877         | 1,317                 |
| Company - 400W     | 850            | 1,740         | 2,047                 |
| Customer - 100W    | 27,816         | 14,990        | 539                   |
| Customer - 150W    | 19,190         | 16,467        | 858                   |
| Customer - 250W    | 9,479          | 10,516        | 1,109                 |
| Customer - 400W    | 7,386          | 14,720        | 1,993                 |
| Customer - 1000W   | 571            | 311           | 545                   |
| Other              | 10,242         | 8,724         | 852                   |
| <b>Total</b>       | <b>101,605</b> | <b>83,511</b> | <b>822</b>            |

# Stakeholder Feedback Requested



- PacifiCorp will consider stakeholder feedback working with its CPA technical consultant, AEG in finalizing its CPA
  - Where possible PacifiCorp will incorporate any requested modifications/additions in the current study. All other requests will be considered for the next study.
- Feedback to be submitted using the 2019 IRP stakeholder feedback form at the following location:  
<http://www.pacifiCorp.com/es/irp/irpcomments.html>
- Please be as specific as possible when providing feedback and reference specific measure codes, etc.
- Please provide feedback no later than July 27, 2018.