Short- and Long-term Solutions for Integrating Embedded Energy Savings into CEDARS

On December 20, 2020, the California Public Utilities Commission (CPUC) published the final version of the Water-Energy Calculator 2.0 (W-E Calculator 2.0). The W-E Calculator 2.0 replaces the first version of the Water-Energy Calculator, and Program Administrators (PAs) will use its values going forward to calculate the embedded energy savings of Water-Energy Nexus (WEN) measures. PAs can now use the embedded energy savings from these WEN measures to claim incentives and they will count towards PAs' energy efficiency goals.

The two solutions described below detail how PAs will calculate the embedded energy savings using the California electronic Technical Reference Manual (eTRM).

Short-term Solution

Until the CPUC implements the Long-term Solution, existing and new WEN-measure packages will use the following method to calculate the embedded energy savings produced by a water-efficiency measure and add it to the direct (site) energy savings generated by that measure.

The measure or measure update will add the energy-intensity values in Table 1 to eTRM. The embedded energy savings for the measure will be the result of dividing the number of gallons saved by the measure by 1000 and multiplying that result by the "Total IOU Embedded Water Energy Intensity" value in Table 1, based on whether the measure is an indoor or outdoor measure. For IOUs, the embedded-water-energy intensity is 5.44 kWh/kgal for indoor measures, and 3.28 kWh/kgal for outdoor measures. Once the embedded energy savings have been calculated, they will be automatically added in eTRM to the direct energy savings of the measure (per D.17-12-010). That combined value, along with other site-specific savings values, will then be input into the Cost-Effectiveness Tool (CET) through California Energy and Data Reporting System (CEDARS) to calculate the measure's cost effectiveness. Program Administrators (PAs) will also use the combined value if they submit a claim for this measure.

As the embedded energy savings are present regardless of whether the measure uses hot or cold water, the total annual water savings including both hot and cold water will be multiplied by the appropriate "Total IOU Embedded Water Energy Intensity" value in Table 1. The calculation of direct energy savings will be unchanged.

This approach is only suitable for measures that use the default marginal water supply—recycled water (non-potable). PAs may claim measures that use a different marginal supply only if they use the Long-term Solution, and thus must wait until that solution is implemented. Additionally, per D.15-09-023, where PAs depart from default values, they must show that the departure is reasonable in all documents submitted to CPUC.

Table 1: Embedded Water Energy Intensities

Climate Zone	Sector	Water Use Type	Marginal Supply	Total IOU Embedded Water Energy Intensity (kWh/kgal)	Total Non-IOU Embedded Water Energy Intensity (kWh/kgal)
Any	Urban	Indoor	Recycled Water (Non-Potable)	5.44	0.25
Any	Urban	Outdoor	Recycled Water (Non-Potable)	3.28	0.10

Long-term Solution

Once CPUC finalizes this solution, it will replace the Short-term Solution for the measure. When the CPUC informs the relevant PAs of this transition, the PAs will create a Measure Log Entry that includes a Measure Package Plan (MPP). The MPP will describe the administrative change to the measure package that will incorporate the long-term solution used to calculate the total energy savings as well as when the change will take effect. This administrative change will not trigger a new version of the measure package since impacts (including savings, cost, and measure life) have not changed. It is expected that total energy savings will be broken out in this long-term approach so that direct energy savings can be distinguished from IOU embedded-water-energy savings and stored separately in permutation data fields.

The measure or measure update will use the new CET functionality to accept the direct energy savings and IOU embedded energy savings separately into the CET. The direct energy savings will be calculated using the measure-package methodology. The IOU embedded-water-energy savings will be calculated following the same methodology described in the Short-term Solution but will be stored independently within the eTRM to facilitate reporting and cost-effectiveness calculations. The PA will still receive the same credit for both the direct and embedded energy savings as they received using the Short-term Solution, but for accounting purposes the two types of savings will be entered into the CET separately through CEDARS.