CPUC Comments on SWFS002-02 Door Type Dishwasher, Commercial

Lead PA: SCG

Workpaper Calculation Submittal Date: 6/21/2021

CPUC Review Date: 7/01/2021

SCG Response Date: 7/28/2021

Please note responses to comments in the table below and consider any calculation revisions prior to preparing a workpaper submittal.

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| CPUC Comment | PA Response |
| CPUC reviewers have noted that in the Energy Calcs tab for water heater electric energy usage calculations exclude the specific heat of water in cell B9. While excluding this parameter has no effect on the results, within-spreadsheet documentation of results would be more complete if this term were included. | Agree. Specific heat was included in some but was mistakenly not included in all calculations. This has been resolved in the calculations |
| What is the source of the coincident demand factor in cell B17 of the Energy Calcs tab? | This is a standard CDF. It is used widely across workpapers. See eTRM Support table “Coincident Demand Factor” Source:  Itron, Inc. 2005. *2004-2005 Database for Energy Efficiency Resources (DEER) Update Study - Final Report*. Prepared for Southern California Edison. |
| Regarding the application of coincident demand factor to saving estimates in columns U and X, it is not clear that this term is needed. In columns K, N and Q the fraction of on-peak daily energy use is divided by the 5 peak hours, resulting in a coincident peak estimate representing 7.9% of daily savings. | Agree. Since the peak demand probability during the peak demand window is already taken into account for the base and measure case, the CDF may not need to be applied to the savings. It has been removed from the calculation but shouldn’t have a huge impact on the results |
| However, the derivation of usage during the peak period found in cell B15 of the Energy Calcs tab should be revisited. In the Op Hrs & Demand Profile tab this is calculated as 24.21% divided by 61.53%. We think that instead usage during the peak period should be a function of all hours of the day, not just the assumed operation period representing 61.53% of all usage. And thus usage during peak should be set equal to 24.21%, and used instead in cell B15 of the Energy Calcs tab. | The dishwasher is assumed to be in operation only 12 hours a day in the calculations. It should be noted that increasing the hours of use has implications on the energy savings data in addition to the demand calculations. Increasing the hours of usage in the demand calculation would also increase the time idle in the electric consumption calculations and increase the idle energy usage of the base and measure case, increasing the electric energy savings.  The data presented in the cells is water usage as a proxy to determine on peak dishwasher usage. Water usage only during the dishwasher’s operation from 10 am to 10 pm is included in the demand calculation based on the assumption that the dishwasher operates 12 hours a day. This will not be changed due to the implications on the idle energy calculation described above. |
| Please explain why washing energy consumption, expressed as kWh/rack in Energy Star version 3.0, is not included in the savings calculations in some way. Values for this term are represented in the Energy Calcs tab of the spreadsheet in cells E31:E36. Please also note that the label for this data in cell E30 shows as kW instead of kWh/rack. Also, what is the meaning of having the baseline parameter set equal to missing in cells E31 and E34? | Wash energy per rack is a new metric as part of ENERGYSTAR version 3 specifications. While it is useful and more straightforward than other metrics, new dishwasher units have not yet been tested to the new EnergyStar v3.0 specifications and baseline data isn’t available through prior EnergyStar specifications. It was excluded from the calculations but should be revisited as more data becomes available and in next ENERGYSTAR specifications. |