**Phase 2 Workpaper Review**

**Workpaper: PGECOLTG162 R0 Upstream Interior 3-Way Compact Fluorescent Lamps**

**Summary**

This work paper covers upstream rebates for Integral Screw-in 3-Way Compact Fluorescent Lamps. PG&E has utilized SCE’s workpaper references and wording as much as possible to make this workpaper consistent as much as possible.

UES calculations utilize DEER assumptions including:

* Incandescent to CFL wattage reduction ratio of 3.53
* DEER interactive effects and operating hours

Non-DEER assumptions include:

* Alternative weights for nonresidential building types
* Additional reductions for operation at lower wattages (20%) and operating hours (9%) were applied to the UES calculations for a total reduction of about 27%.

Additionally, UES values are reduced through the application of an “in-service rate” of 0.9 for residential and 0.92 for nonresidential.

**Disposition:** Not approved. ED requires the following revisions:

Update UES calculations to use the latest operating hours and interactive effects posted on the DEER website.

1. Remove “in-service rate” from the UES calculation. Gross savings adjustments based on the 0608 upstream lighting evaluation shall be applied as an adjustment to the number of installations for each claim period.
2. Update EFLH, CDF and interactive effects values based on the most recent interactive effects workbook published by ED (attached)
3. The workpaper uses building weights based on the 2004-2005 Express Efficiency evaluation. Weights of building types must meet requirements of the recent ex-ante decision. At this time, the DEER weights or weights based on the 0608 ULP evaluation are the only acceptable weighting approaches.
4. While not specifically addressed in the workpaper, residential to nonresidential “split” should be updated to reflect the ex-ante decision.
5. The table from the CBLET report used to develop the hours of use reduction includes a high hours of use increase of 1.25 and a low hours of use reduction of 0.57. The workpaper uses 0.91 which is the average of these two. The 0608 ULP Report shows about twice as many CFL installations in bedrooms, which is a low hours of use space according to the CBLET, than the living room, which is a high hours of use space (See Table 6 on page 3 of the ULP report appendices). Hours of use adjustment for residential should be reduced as follows:

*HOUfactor = 0.67\*0.57 + 0.33\*1.25 = 0.79*

It appears that very little information on commercial 3-way operations is available. The HOU factor of 0.91 is acceptable for commercial applications at this time.

1. ED is concerned about the validity of the wattage adjustment of 0.80. This value is included in a table in the CBLET report, but the report contains no supporting information on how it was developed. The table is provided below for reference:



If specialty CFLs are to become a significant portion of upstream programs, additional research must be performed in cooperation with ED and the ED evaluation contractors. The first step should be to review the raw data from the 0608 ULP report to determine if similar values, including wattage and hours of use adjustments, can be developed. Next, CFL research moving forward should examine specialty CFLs in sufficient quantities so that reasonable usage patterns and wattage reductions can be determined.

**Workpaper: PGECOMOT101 R0 Tier-2 Efficiency Motors**

**Summary**

This workpaper covers upstream incentives to customers to encourage the installation of Tier-2 efficiency motors instead of NEMA Premium™ efficiency motors in non-residential applications, i.e. commercial, industrial, and agricultural applications.

**Disposition:** Not approved.

**Discussion:**

ED believes the UES calculations overestimate the expected savings. See attached workpaper review template. In lieu of revising the workpaper according to that attached review, UES values may be adjusted using a multiplier of 0.25. One of the biggest concerns is the assumption that the baseline consists largely of inefficient rewound motors. This assumption was removed from DEER in 2005 and is therefore not appropriate for deemed savings estimates. Along with the attached review document, refer to the attached spreadsheet used to estimate the typical kW reduction due to Tier 2 efficiency motors.

**Workpaper: PGECOAGR110 Pipe Insulation**

**Summary**

The proposal is to provide downstream incentives to insulate previously un-insulated hot water and steam pipes on heating systems using natural gas as the energy source. Bare hot water and steam pipes lose large amounts of heat energy to the ambient air. Insulating these pipes significantly reduces their heat losses.

**Disposition:** Not approved. Specific revisions are listed below. See attached detailed review for more information.

**Discussion**

1. Revise ambient temperature from 70F to 85F.
2. Ensure that applications are only for process heating systems.
3. Revise operating hours for certain DEER building types to reflect likely systems operation.
4. Apply an installation rate of 0.35 to account for misapplications observed in the 2006-2008 EM&V.

**Workpaper: PGEDRHVC001 Enhanced Fan Time Delay - SmartAC Programmable**

**Controllable Thermostat**

**Summary**

The proposal is to provide downstream incentives to service providers for the installation of time delay relays to existing air conditioners and heat pumps. This relay delays the deactivation of the supply air fan for 90 seconds after the compressor is turned off by the thermostat.

**Disposition:** Not approved. See attached detailed review for more information. Alternatively, UES values may be modified as discussed below:

**Discussion**

ED will accept workpaper with the following revisions to applicability and UES values:

1. Eliminate demand savings.
2. Reduce energy consumption savings by 50%.
3. Clarify that measure is only applicable to residential systems.