Work Paper SCE17CC006

**Revision 0**

**Short Form**

**Southern California Edison**

**Commercial Electric Combination Ovens**

**Introduction**

This short form workpaper documents the values adopted from PGE’s WP entitled “Commercial Combination Ovens/Steamer-Electric and Gas” (PGECOFST100 R6). SCE adopts all the values in PGECOFST100 R6 with no changes

# Document Revision History

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| **Rev** | **Date** | **Author** | **Summary of Changes** |
| 0 | 11/28/17 | Kara Vega (TRC) | * Transferred savings values to SCE Calculation template for the 2017 program year. * Mid-stream incentive method was added in this revision of the workpaper. * All 16 climate zones were used in this version. * Only electric measures from PGECOFST100 R6 are included in this version. |
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**Measure Summary**

Table : Measure Summary Table

| **Section** | **Value** |
| --- | --- |
| **Summary & Purpose** | This short form work paper documents the inputs for the energy efficient commercial electric combination oven measure. The savings values are from PG&E’s workpaper PGECOFST100 R6 – Commercial Combination Ovens/Steamer-Electric and Gas. The electric combination oven/steamer must have a tested steam mode cooking energy efficiency of ≥50% and convection mode cooking energy efficiency of ≥70% utilizing American Society for Testing and Materials (ASTM) Standard F2861 and meet the idle rate requirements. |
| **1.1 Measure & Baseline** | Please refer to Attachment #1 Calculation Templates for the list of measure solution codes and baseline condition. |
| **1.2 Technical Description** |  |
| **Measures** | FS-14121: Electric Combi Oven <15 pan capacity (PGE ID – HA16)  Energy Efficiency Commercial Electric Combination Oven (< 15 pan capacity) with steam mode idle energy rate ≤ 5.0 kW and convention mode idle energy rate ≤ 2.0 kW  FS-30956: Electric Combi Oven 15−28 pan capacity (PGE ID – F100)  Energy Efficiency Commercial Electric Combination Oven (15-28 pan capacity) with steam mode idle energy rate ≤ 6.0 kW and convention mode idle energy rate ≤ 2.5 kW  FS-30956: Electric Combi Oven >28 pan capacity (PGE ID – HA19)  Energy Efficiency Commercial Electric Combination Oven (> 28 pan capacity) with steam mode idle energy rate ≤ 9.0 kW and convention mode idle energy rate ≤ 4.0 kW |
| **Code for All Measures** | This measure is not governed by either state or federal codes and standards.  The Energy Star Test Method for Commercial Electric Combination Oven uses the ASTM F2861-10 Standard Test Method for Enhanced Performance of Combination Oven in Various Modes to estimate the energy consumption of both the base and measure case. |
| **Requirements** | * This measure includes new commercial electric combination ovens/steamers that meet the qualifications listed in Table 1 of PGECOFST100 Rev6. * Used or rebuilt equipment is not eligible. * Customers must provide proof that the appliance has the idle energy rate that meets the requirements. |
| **1.3 Installation Type and Delivery Mechanisms** |  |
| **Installation Type** | Replace on Burnout (ROB)  New Construction (NEW/NC) |
| **Delivery Mechanisms** | Down-Stream Incentive  Mid-Stream Incentive |
| **1.4.1 DEER Data** |  |
| **Net-Gross-Ratio** | Com-Default>2yrs  Ind-Default>2yrs |
| **Effective and Remaining Useful Life** | Cook-ElecCombOven, EUL=12 years, RUL =4 years |
| **Section 2. Calculation Methodology** |  |
| **Energy savings/Peak Demand Reduction – All Measures** | Energy savings were developed using actual test data based on the calculation methods in ASTM Standard Test Method for the Performance of Combination Ovens in Various Modes (F2861) which use measured data under preheat, idle, and heavy-load cooking conditions. The ASTM performance parameters for base case equipment were drawn from a sample of economy grade equipment tested by the Food Service Technology Center, on the Heavy-load potato test in ASTM F2861. The Base Case ASTM Test Results for Commercial Combination Ovens are provided within Section 2.1 of PGECOFST100 Rev6. The measure case data was drawn from data generated by The PG&E Food Service Technology Center in San Ramon, the Southern California Gas Company Foodservice Equipment Center in Downey, and the Southern California Edison Foodservice Technology Center in Irwindale. The lab-based test data was used to establish a measure case level that effectively differentiated between standard-efficiency models and energy-efficient models. The performance parameters used to determine the energy consumption for the measure case are summarized in the *Measure Case ASTM Test Results for Commercial Combination Ovens* table within Section 2.1 of PGECOFST100 Rev6.  The demand reduction estimation is based on measured data for standard efficiency electric combination ovens and for high-efficiency combination ovens. The measured data are derived from tests conducted under ASTM Standard Test Method for thePerformance of Combination ovens (F2861).  Please refer to Section 2 of PGECOFST100 Rev6 for additional details and examples. |
| **Section 3. Load Shapes** | DEER:Indoor\_Non-CFL\_Ltg  The load shape for commercial electric combination ovens differ among food service facilities depending on daily menu variations, hours of operation, serving periods, day-of-week, and facility location. |
| **Section 4. Costs** |  |
| **Section 4.1 Base and Measure Costs** | Please refer to Attachment #1 Calculation Templates for detailed baseline and measure costs. |

*No Changes were required for this short form. The savings were simply transferred to SCE’s 2017 Calculation Template.*

**Attachments:**

1. A1 SCE17CC006.0 Calculation Template