Short Form Work Paper WPSDGEREWH0022

**Revision 3**

**San Diego Gas & Electric**

**Energy Efficiency Engineering**

**Residential Heat Pump Water Heater**

**December 27, 2018**

# SDG&E Residential Heat Pump Water Heater

## Introduction

This short form workpaper documents the values adopted from SCE’s workpaper entitled “Heat Pump Water Heater” (SCE17WH001.2). SDG&E adopts all of the values in SCE17WP001 Rev 1 with the exception of:

1. SDG&E elects to use NTGR: Res-Default>2 since the measure has been in the program for more than two years.

## Document Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| **Rev** | **Date** | **Author** | **Summary of Changes** |
| 0 | 02/28/13 | Charles Harmstead | - Initial Workpaper |
| **1** | **09/23/14** | **Phillip Hasley (Hasley Consulting)** | - Adopted SCE Work Paper SCE13WH001.1  - Removed calculation template  - Updated savings calculations to use DEER 2008 2.05 and 4 water heater sizes  - Updated delivery mechanism to include direct install  - Updated EUL\_ID  - Updated NTG  - Added GSIA  - Updated load shapes  - Updated building types  - Updated costs to be based on DEER |
| 1.1 | 05/21/2015 | Phillip Hasley (Hasley Consulting) | - Updated NTG  - Added Lookup ID Summary Table  - Added PreRebUp as a delivery method |
| 2 | 11/15/17 | Kelvin Valenzuela (SDG&E) | - Updated kWh, kW impacts to E-4867  - Remove offerings other than 50 gallons  - Measure 1 changed from 40 gallons to 50 gallons @ EF = 3.24  - Measure 2 changed from 50 gallon to 50 gallons @ EF = 3.50  - Electric Profile changed for single family implementations |
| 3 | 12/27/2018 | Kelvin Valenzuela  (SDG&E) | -Adopted SCE Work Paper SCE17WH001.2 which includes the conversion of EF to UEF values  -Created new implementation IDs with new UEF measure descriptions  - Update also includes 2018 and 2019 Measure Application Types and Delivery Types |

## Measure Summary

Table : Measure Summary Table

| **Section** | **Value** |
| --- | --- |
| **Summary & Purpose** | This short form workpaper documents the values adopted from SCE’s workpaper entitled “Heat Pump Water Heater” (SCE17WH001.2). |
| **1.1 Measure & Baseline Data** | |  |  |  | | --- | --- | --- | | SDG&E | SCE |  | | 465951/465959 | WH-19955 | Efficient water heater: 50 to 55 gallon HP Elec (UEF=3.09) replaces ≤35 gallon Electric water heater (UEF = 0.92) | | 465952/465960 | WH-19956 | Efficient water heater: 50 to 55 gallon HP Elec (UEF=3.31) replaces ≤35 gallon Electric water heater (UEF = 0.92) | | 465953/465961 | WH-19957 | Efficient water heater: 50 to 55 gallon HP Elec (UEF=3.09) replaces >35 to 45 gallon Electric water heater (UEF = 0.92) | | 465954/465962 | WH-19958 | Efficient water heater: 50 to 55 gallon HP Elec (UEF=3.31) replaces >35 to 45  gallon Electric water heater (UEF = 0.92) | | 465955/465963 | WH-19959 | Efficient water heater: 50 to 55 gallon HP Elec (UEF=3.09) replaces >45 to 55 gallon Electric water heater (UEF = 0.92) | | 465956/465964 | WH-19960 | Efficient water heater: 50 to 55 gallon HP Elec (UEF=3.31) replaces >45 to 55  gallon Electric water heater (UEF = 0.92) | | 465957/465965 | WH-19961 | Efficient water heater: >55 to 75 gallon HP Elec (UEF=3.33) replaces >55 to 75 gallon Electric water heater (UEF=2.91) | | 465958/465966 | WH-19962 | Efficient water heater: >75 gallon HP Elec (UEF=3.42) replaces >75 gallon Electric water heater (UEF=3.00) | |
| **1.2 Technical Description** | Please reference SCE17WH001.2 under 1.2 Technical Description |
| Code for All Measures | Please reference SCE17WH001.2 under 1.4.2 Codes and Standards Analysis |
| Requirements | * “Instantaneous” and “tank less” water heaters do not qualify. * The installed water heater storage capacity must be 50 gallons or greater. * Only residential-style electric storage water heaters qualify for this rebate. A list of qualifying residential water heaters is at: <https://www.sdge.com/residential/savings-center> |
| **1.3 Installation Type and Delivery Mechanisms** |  |
| Installation Type | Replace on Burn-out (ROB) / Normal Replacement (NR) |
| Delivery Mechanisms | PreRebDown: 1/1/18 – 12/31/18  DnDeemed: 1/1/19 – no expiry yet  PreRebUp: 1/1/18 – 12/31/18  UpDeemed: 1/1/19 – no expiry yet |
| **1.4.1 DEER Data** | Please reference SCE17WH001.2 under 1.4.1 DEER Data |
| Net-to-Gross Ratio | Res-Default>2yrs (0.55) |
| Effective and Remaining Useful Life | WtrHt-HtPmp (EUL = 10 Years) |
| **Section 2. Calculation Methodology** | Please reference SCE17WH001.2 under 2. Calculation Methodology |
| Energy Savings/Peak Demand Reduction – All Measures | Please reference SCE17WH001.2 under 2. Calculation Methodology |
| **Section 3. Load Shapes** | SDGE:DEER:Res:ClothesDishWasher  Annual |
| **Section 4. Costs** | Please reference SCE17WH001.2 under 4. Costs |
| **Section 4.1 Base and Measure Costs** | Please reference SCE17WH001.2 under 4. Costs |
| Base Cost | Please reference SCE17WH001.2 under 4.1 Base Case Costs for details on how baseline cost estimates were determined.  SDG&E adopts all cost and created SDG&E measure cost IDs for reporting purposes. SDG&E measure cost IDs are included in Ex-Ante tables submission |
| Measure Cost | Please reference SCE17WH001.2 under 4.2 Measure Case Costs for details on how baseline cost estimates were determined.  SDG&E adopts all cost and created SDG&E measure cost IDs for reporting purposes. SDG&E measure cost IDs are included in Ex-Ante tables submission |