Short Form Work Paper WPSDGEREHC0032

**Revision 0.1**

**San Diego Gas & Electric**

**Energy Efficiency Engineering**

**Refrigerant Charge Adjustment**

**February 28, 2018**

# SDG&E Refrigerant Charge Adjustment

## Introduction

This short form workpaper documents the values from the READI v.2.4.7 energy impacts for Res-RefrigCharge-wtd and Res-RCA-wtd. SDG&E adopts the values in READI v2.4.7 with adjustment factors from Energy Division Workpaper Disposition for Residential HVAC Quality Maintenance dated May 2, 2013[[1]](#endnote-1). The costs are adopted from 2010-2012 WO17 Ex Ante Measure Cost Study[[2]](#endnote-2).

## Document Revision History

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| --- | --- | --- | --- |
| **Rev** | **Date** | **Author** | **Summary of Changes** |
| 0 | 12/22/17 | Keith Valenzuela/SDGE Contractor | Adopted READI v.2.4.7 energy impacts for DEER 2018 updates with adjustment factors from Energy Division Workpaper Disposition for Residential HVAC Quality Maintenance dated May 2, 2013. |
| **0.1** | **02/28/18** | Keith Valenzuela/SDGE Contractor | - Updated Delivery Type to include downstream |
|  |  |  |  |

## Measure Summary

Table : Measure Summary Table

| **Section** | **Value** |
| --- | --- |
| **Summary & Purpose** | This short form workpaper documents only an addition for Downstream Delivery Channel and the associated implementation ID. No other changes are taken from REV 0.0. |
| **1.1 Measure & Baseline Data** | |
| **1.2 Technical Description** | This measure involves refrigerant charge adjustment to residential AC units or refrigerant charge and airflow adjustment to residential AC units. When an AC unit’s refrigerant charge and airflow does not meet the manufacturer recommended levels it results in a decrease in the unit’s energy efficiency.  Some units may be undercharged, which can result in decreased power draw but potentially longer run times. Other units may be overcharged, which can result in increased power draw but potentially shorter run times. In either case, energy savings can be achieved by correcting refrigerant charge to optimum levels based on the manufacturers’ specifications. |
| Measures | Measure 1:  462344 – Adjust refrigerant charge in residential AC unit  420089 – Adjust refrigerant charge in residential AC unit - Downstream  Measure 2:  420090 – Residential refrigerant charge and airflow adjustment  464291 – Residential refrigerant charge and airflow adjustment - Downstream  Measure 3:  421026 – AC Diagnostic, Repair and Tune-up 1995-2005  464292 – AC Diagnostic, Repair and Tune-up 1995-2005 - Downstream  Measure 4:  420147 – Airflow Correction  464293 – Airflow Correction - Downstream |
| Code for All Measures | No Changes from REV 0.0 |
| Requirements | No Changes from REV 0.0 |
| **1.3 Installation Type and Delivery Mechanisms** | |
| Installation Type | Retrofit Add-on (REA) |
| Delivery Mechanisms | Direct Install  Downstream (new for REV 0.1) |
| **1.4.1 DEER Data** | |
| Net-to-Gross Ratio | No Changes from REV 0.0 |
| Effective and Remaining Useful Life | No Changes from REV 0.0 |
| GSIA | No Changes from REV 0.0 |
| **Section 2. Calculation Methodology** | |
| Energy Savings/Peak Demand Reduction – All Measures | No Changes from REV 0.0 |
| **Section 3. Load Shapes** | |
| Load Shape | No Changes from REV 0.0 |
| **Section 4. Cost** | |
| **Section 4.1 Base and Measure Costs** | |
| Base Cost | No Changes from REV 0.0 |
| Measure Cost | No Changes from REV 0.0 |

1. California Public Utilities Commission, Energy Division. Workpaper Disposition for

   Residential HVAC Quality Maintenance. Sacramento, CA (2013, May 2). Retrieved 12/1/17 at <http://deeresources.com/index.php/non-deer-workpapers>. [↑](#endnote-ref-1)
2. Itron. 2010-2012 WO017 Ex Ante Measure Cost Study Final Report. San Francisco, CA (2014, May 27). Retrieved 11/14/17 at <http://www.energydataweb.com/cpucFiles/pdaDocs/1100/2010-2012%20WO017%20Ex%20Ante%20Measure%20Cost%20Study%20-%20Final%20Report.pdf>. [↑](#endnote-ref-2)