

State of California

Memorandum



Date: 8/15/2023

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From: Peter Biermayer P.E., Utilities Engineer, EE Planning & Forecasting Section, Energy Division, CPUC

Subject: Disposition Approving Heat Pump HVAC, Residential, Fuel Substitution – Measure Package SWHC045-02

1. Discussion and Direction

The California Public Utilities Commission (CPUC) approves the statewide measure package for Heat Pump HVAC, Residential, Fuel Substitution – SWHC045-02. This is a revision to an existing measure package SWHC045-01, updated mid-cycle because of a change in the federal minimum efficiency standard and a change in the efficiency metric used by the federal standard, which updated the base case and measure case efficiency value metrics. SWHC045-02 will become effective 90 days after approval. The effective date for this measure package is November 13, 2023.

2. Measure Package Summary

The measure updates were in response to Resolution E-5152 and to update the base case and measure case values to SEER2 rated equipment per the federal code. Additional key updates to SWHC045-02 are listed below.

Key updates include:

- Adopted DEER energy impacts and updated calculations to EnergyPlus v5 models and the incorporated CZ2022 weather data.
- Added data collection requirements in upstream delivery channels.
- Adopted a SEER-to-SEER2 crosswalk for SEER2-rated units to align with the updated federal code.
- Updated material and labor costs.
- Added three new high-efficiency tier measure offerings.

3. Critical Review Issues

In the migration to the EnergyPlus model for SWHC045-02, the model was calibrated with the most recent 2019 Residential Appliance Saturation Study (RASS) results¹. Additionally, the model for SWHC045-01 is run with CZ2010 weather data and the model for SWHC045-02 is run with CZ2022 weather data. Another contributing factor to the less negative electric savings is the additional measure offerings in SWHC045-02, which included three additional higher efficiency offerings than SWHC045-01.

¹ <https://www.energy.ca.gov/data-reports/surveys/2019-residential-appliance-saturation-study>