# Single Family AC to Heat Pump

## Referenced Study

Title: [2025 Cost-Effectiveness Study: Single Family AC to Heat Pump Replacement](https://localenergycodes.com/download/2034/file_path/fieldList/2025%20Single%20Family%20AC%20to%20HP%20Cost-eff%20Study.pdf)

Backup Data: [Single Family AC to HP Study Data](https://localenergycodes.com/download/2037/file_path/fieldList/2025+SF+AC+to+HP+Study+Data.xlsx)

Prepared for: Kelly Cunningham, Codes and Standards Program, Pacific Gas and Electric Company

Prepared by: Frontier Energy Inc., Misti Bruceri & Associates, LLC

Last Modified: 2025/08/08

## Proposed Requirements

The ordinance requires that projects in existing single-family occupancies involving replacement or alteration of an existing air conditioning system or installation of a new air conditioning system either include a heat pump space conditioner as the primary heating system or install specific energy efficiency measures.

## Cost-Effectiveness Results

Cost effectiveness results are summarized for each heat pump option (Dual fuel existing furnace, Standard Efficiency, and High Efficiency) by building vintage (Pre-1978, 1978-1991, 1992-2010) and rate tariffs (standard and CARE). The tables are reported for all heat pump types for the 1992-2010 vintage with standard tariffs in Tables 12-14 on pages 23-25. Cost effectiveness tables for CARE tariffs for all heat pump types of the 1992-2010 vintage are shown in Tables 15-17 on pages 26-28. For the two older vintages, all cost effectiveness results are recorded in Appendix 6.2.

# Single Family FlexPath

## Referenced Studies

Title: [Single Family Residential Retrofits (FlexPath and Specific Measures)](https://localenergycodes.com/download/1222/file_path/fieldList/Single%20Family%20Retrofits%20CostEff%20Report.pdf)

Backup Data: [SF Retrofits Study Data](https://localenergycodes.com/download/1799/file_path/fieldList/2022%20Single%20Family%20Retrofits%20Study%20Data.xlsx)

Prepared for: Kelly Cunningham, Codes and Standards Program, Pacific Gas and Electric Company

Prepared by: Frontier Energy Inc., Misti Bruceri & Associates, LLC

Last Modified: 2024/04/25

Title: [2019 Residential Retrofits](https://localenergycodes.com/download/875/file_path/fieldList/2019%20V2-Residential%20Retrofit%20Cost-eff%20Report-2021-08-27.pdf)

Prepared for: Kelly Cunningham, Codes and Standards Program, Pacific Gas and Electric Company

Prepared by: Frontier Energy Inc., Misti Bruceri & Associates, LLC

Last Modified: 2021/08/27

Title: [Application of 2022 Studies to 2025 Energy Code: Existing Single Family Building Upgrades](https://localenergycodes.com/download/2081/file_path/fieldList/2022+to+2025+FlexPath+Memo.pdf)

Prepared for: Kelly Cunningham, Codes and Standards Program, Pacific Gas and Electric Company

Prepared by: Frontier Energy Inc., Misti Bruceri & Associates, LLC

Last Modified: 2025/08/15

## Proposed Requirements

The ordinance requires that major alterations or additions above a certain size select a subset of energy measures from a list to incorporate into their scope.

## Cost-Effectiveness Results

Please see attached output from the Cost-Effectiveness Explorer. The memo describes the application of the results of the previous two cost-effectiveness studies to the current ordinance.

# Nonresidential AC to Heat Pump

## Referenced Study

Title: [2025 Nonresidential Alterations: Reach Code Study](https://localenergycodes.com/download/2049/file_path/fieldList/2025%20NR%20Alterations%20CostEff%20Report.pdf)

Prepared for: Amy Discher, Southern California Edison

Backup Data: [Nonresidential AC to HP Study Data](https://localenergycodes.com/download/2052/file_path/fieldList/2025%20NR%20AC%20to%20HP%20Study%20Data.xlsx)

Prepared by: TRC Companies

Last Modified: 2025/07/07

## Proposed Requirements

The ordinance requires that projects in existing nonresidential occupancies involving replacement or alteration of an existing air conditioning system or installation of a new air conditioning system must either include a heat pump space conditioner as the primary heating system or install specific energy efficiency measures.

## Cost-Effectiveness Results

Cost effectiveness results are summarized for packaged roof replacements with both single-zone AC (SZAC) and single zone heat pump (SZHP) units are summarized by building type (small office and medium retail), and by building vintage (1980s, 1990s, 2000s) in sections 5.1.2 on page 27, 5.1.3 on page 28, section 5.2.2 on page 30, and section 5.2.3 on page 31. Each replacement option for SZAC and SZHP includes measure packages. Summaries across both building types are depicted in Tables 17 and 18 and show the cost-effective SZHP package as well as the energy equivalence SZAC pathway.