



Nonresidential

Two-Way Air Conditioning

Background, Policy Description, Resources, Discussion

Ordinance Overview

- When **replacing or adding single zone rooftop HVAC**, choose one to install:
 - A single zone **heat pump** (cooling + heating) and comply with State Code;
- OR
- A single zone **air-conditioner** (cooling only) and
 - Heat recovery ventilator



Source: [Trane Heat Pump Rooftop Units](#)

Policy Context

- **2025 Energy Code (Part 6) Nonresidential**
 - Prescriptively requires heat pumps for units up to 65 kBtu/h (5.4 tons)
- **2025 CALGreen (Part 11) Tier 1**
 - Part 11 offers Single Family Two-Way AC as voluntary model for local adoption
 - Requires cost-effectiveness determination
- **Air Quality Regulations**
 - Bay Area and Los Angeles are in “non-attainment” for ozone and particulate matter (PM)
 - Gas appliances generate NOx emissions, which create ozone and PM2.5
 - Beginning in 2029 furnace sales will be restricted by California Air Resources Board, Bay Area Air District, and (possibly) South Coast Air Quality Management District

Why Heat Pumps?

- Heat pumps result in major greenhouse gas emission reductions
- Two to four times more efficient than gas furnaces
- Powered by electricity, which in California, is mostly from renewable energy sources
- Can be both an air conditioner and a space heater
- No on-site combustion of gas
- No risk of carbon monoxide poisoning from the space conditioning system



Policy Impacts

- [Analyze building stock data to estimate]:
 - # of existing nonresidential buildings
 - # with central air conditioning and gas heating
- [Analyze mechanical permit data to estimate]:
 - # of annual permits for air conditioner installations or replacements
 - % of projects affected annually by proposed requirements





Proposed Policy Requirements

When does the reach code apply?

If replacing a furnace
only



Reach code does not
apply

State Code

New or replacement **single-zone space cooling** in:
Offices, retail, grocery, schools, libraries, and financial institutions

Path A

Path B



Install air conditioner

Option 1

Option 2

5 Ton Systems

5-20 Ton
Systems

Include variable
speed fan +
economizer

Include heat
recovery ventilator

State Code

Reach requirement



Install a heat
pump

No additional
requirements

State Code

Code Language Structure

When installing a **new or replacement** single zone rooftop HVAC unit, either:

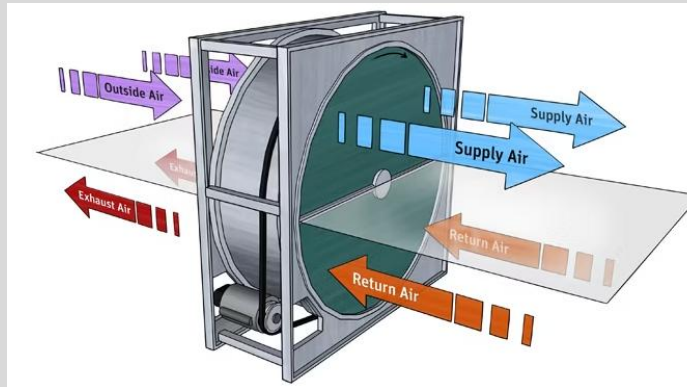
1. Install a heat pump **OR**;
2. Install an AC and a heat recovery ventilator.



Heat Recovery Ventilator (HRV):

A ventilation system that recovers energy by moving air between two air sources at different temperatures, helping to lower a building's heating and cooling needs.

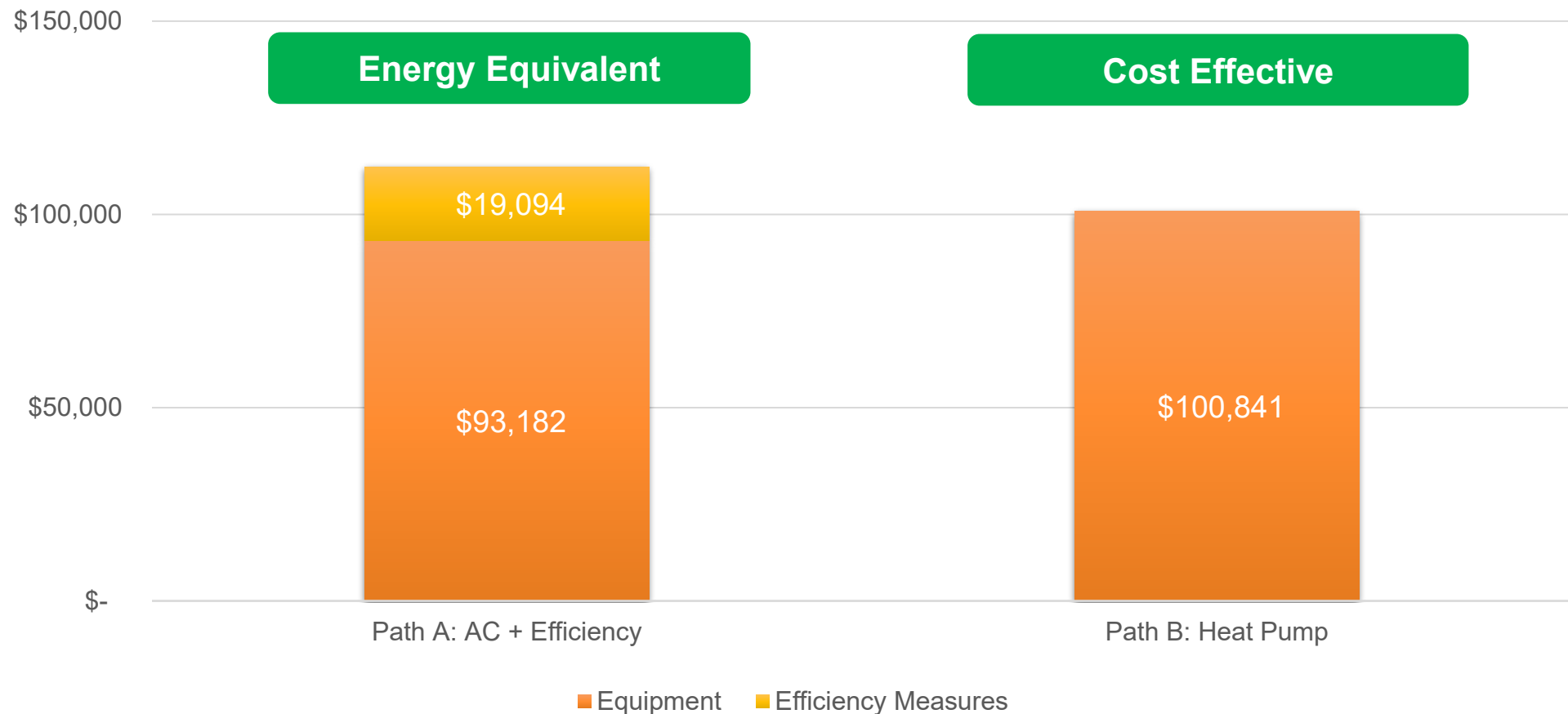
HRVs are readily available and easy to install.



[Image Source](#)

Exception for limited electrical panel capacity: If the existing main electrical panel does not have the capacity for a heat pump but can support a new or replacement air conditioner.

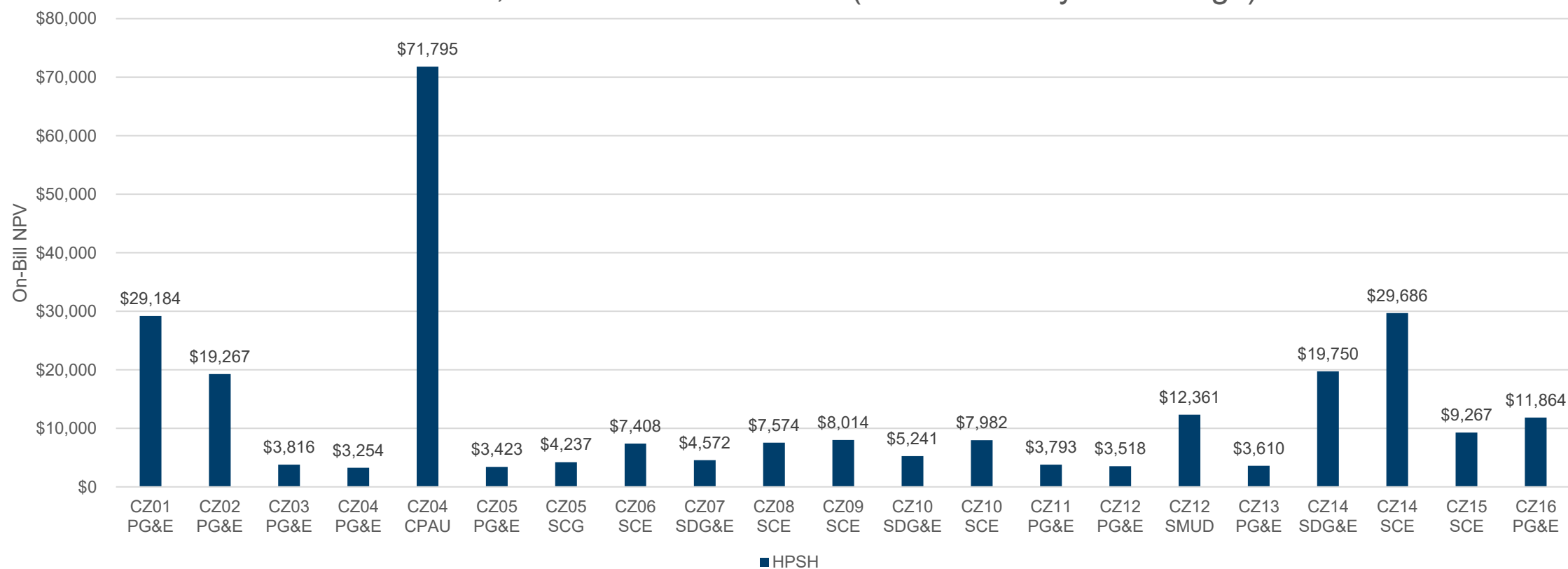
- 1-Way AC costs more for the same efficiency



Source: [2025 Nonresidential Alterations and AC to HP Cost-effectiveness Study](#), CZ 3 & 4, Medium Retail Example

Two-Way AC saves hundreds or thousands over its lifetime

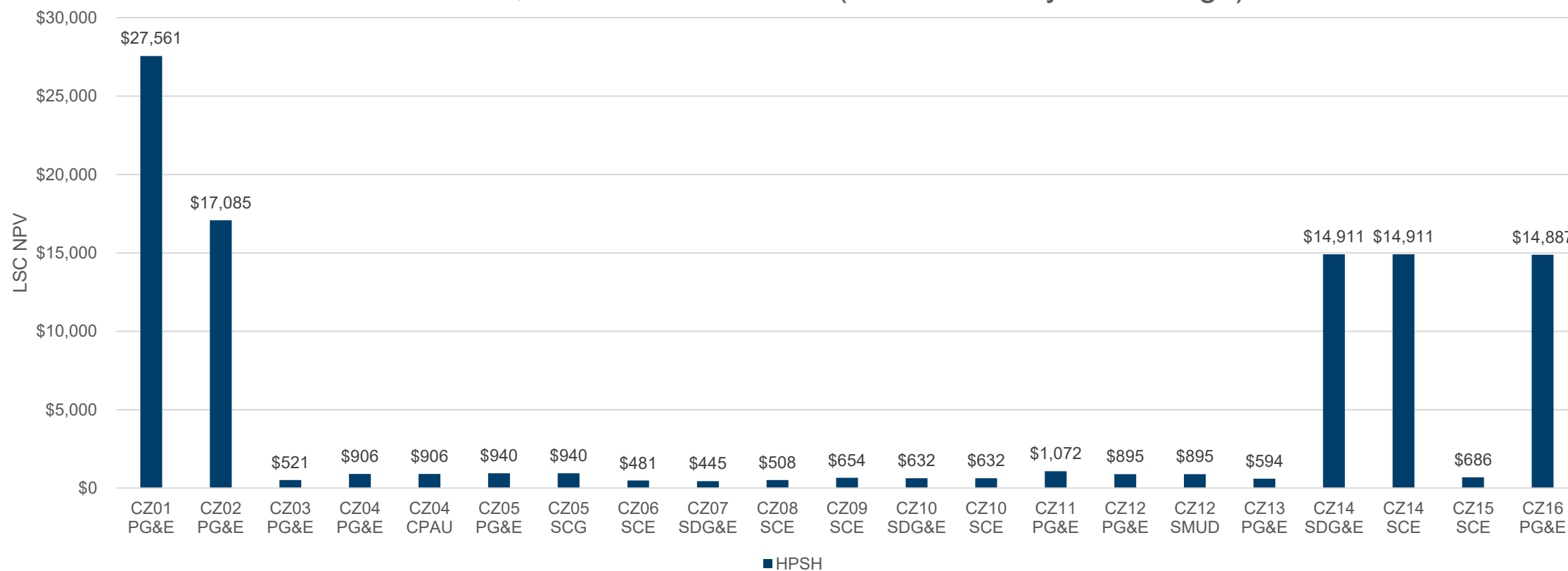
Small Office, Pre-1990 On-Bill NPV (30-Year Lifecycle Savings)



Source: [Statewide IOUs C&S: 2025 Nonresidential Alterations and AC to HP Cost-effectiveness Study](#)

Two-Way AC saves hundreds or thousands over its lifetime

Small Office, Pre-1990 LSC NPV (30-Year Lifecycle Savings)



Source: [Statewide IOUs C&S: 2025 Nonresidential Alterations and AC to HP Cost-effectiveness Study](#)

Resources

- Ready Today
 - [Model Code Language](#)
 - [Cost effectiveness study](#)
- Coming Soon
 - Model staff report

Cross-posted and customized

- [BayAreaReachCodes.org](#)
- [CentralCoastReachCodes.org](#)
- [CPAReachCodes.org](#)

