

# City of Pinole *Proposed* Reach Codes

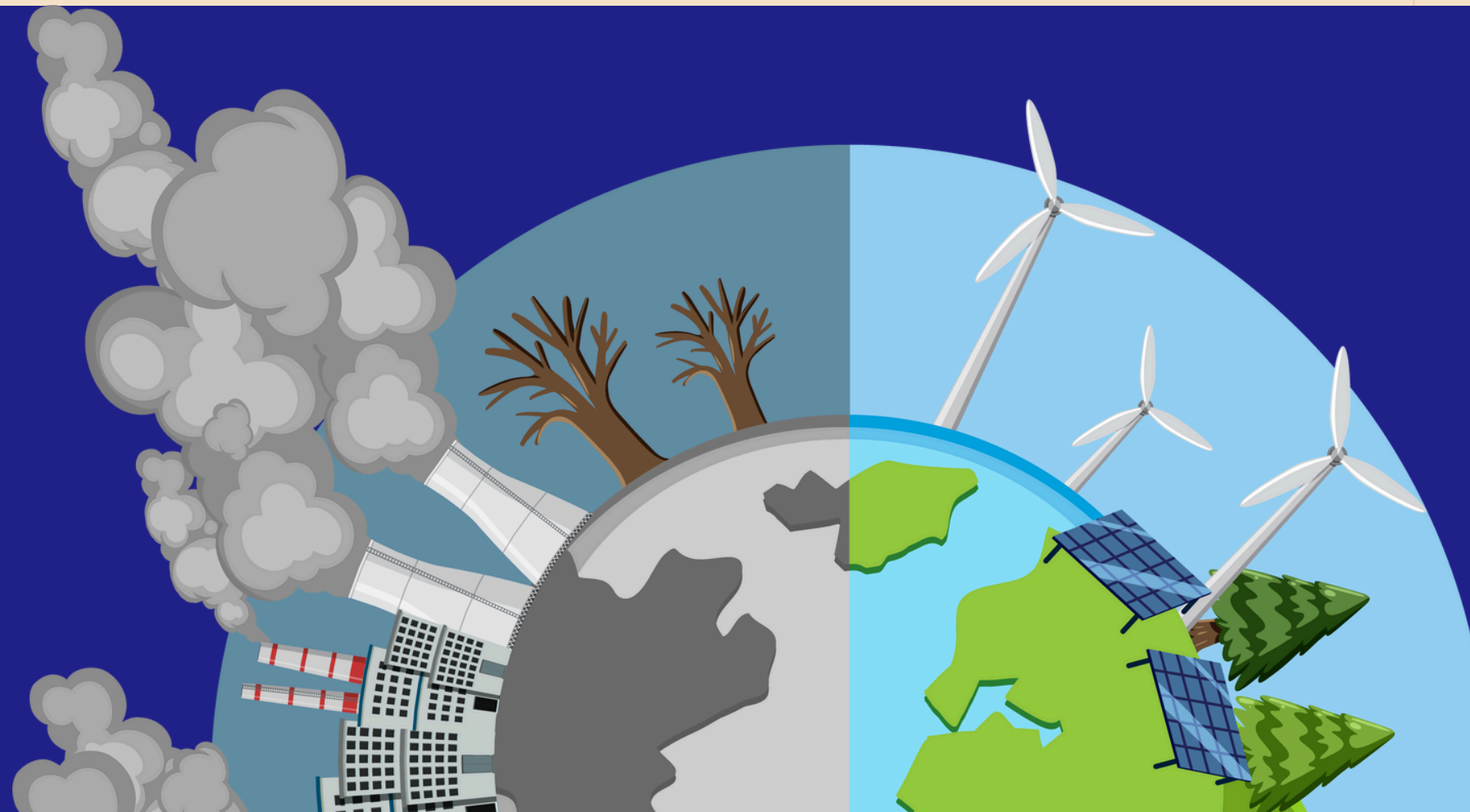


## Existing Homes



**Table 2 City of Pinole Community GHG Emissions (2017)**

| Sector and Subsector       | GHG Emissions (MT CO <sub>2</sub> e) | Percent of Emissions |
|----------------------------|--------------------------------------|----------------------|
| <b>Energy</b>              | <b>33,088</b>                        | <b>46%</b>           |
| Residential Electricity    | 3,738                                | 5%                   |
| Nonresidential Electricity | 5,918                                | 8%                   |
| Residential Natural Gas    | 18,140                               | 25%                  |
| Nonresidential Natural Gas | 5,291                                | 7%                   |





# Building Energy

BE-2

Electrify existing residential buildings to reduce natural gas consumption 26% by 2030 and 100% by 2045.



BE-2a

Adopt a reach code in 2024 requiring all central air conditioning unit installations and replacements be two-way, providing both heating and cooling with a single unit for residential buildings. The ordinance would apply to projects after calendar year 2024. The ordinance would be implemented through the building permit process.



# adopted 2024

# FLEX PATH



During remodels of a  
certain size and  
scope, install energy  
improvements from  
among a menu of  
options

# PRE-1978 HOMES

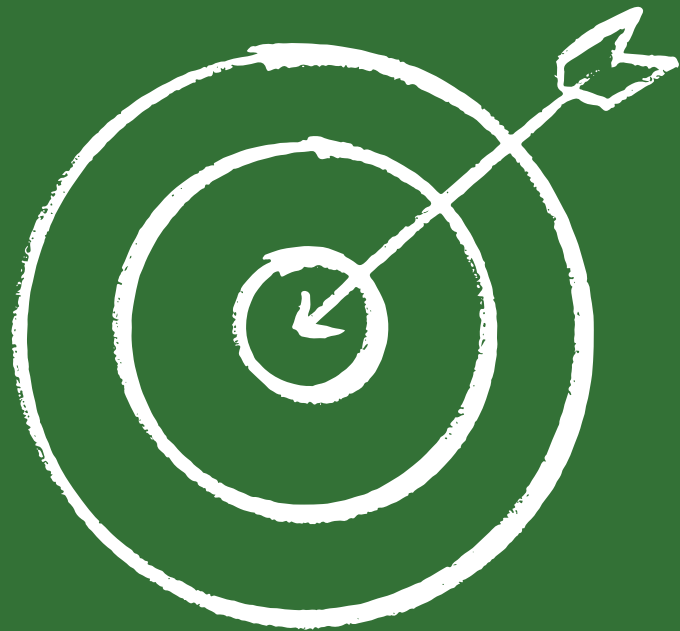
~3,000 homes



# FLEX PATH FOR PRE-1978

$\geq 300$  sq ft

target score



12

$< 300$  sq ft

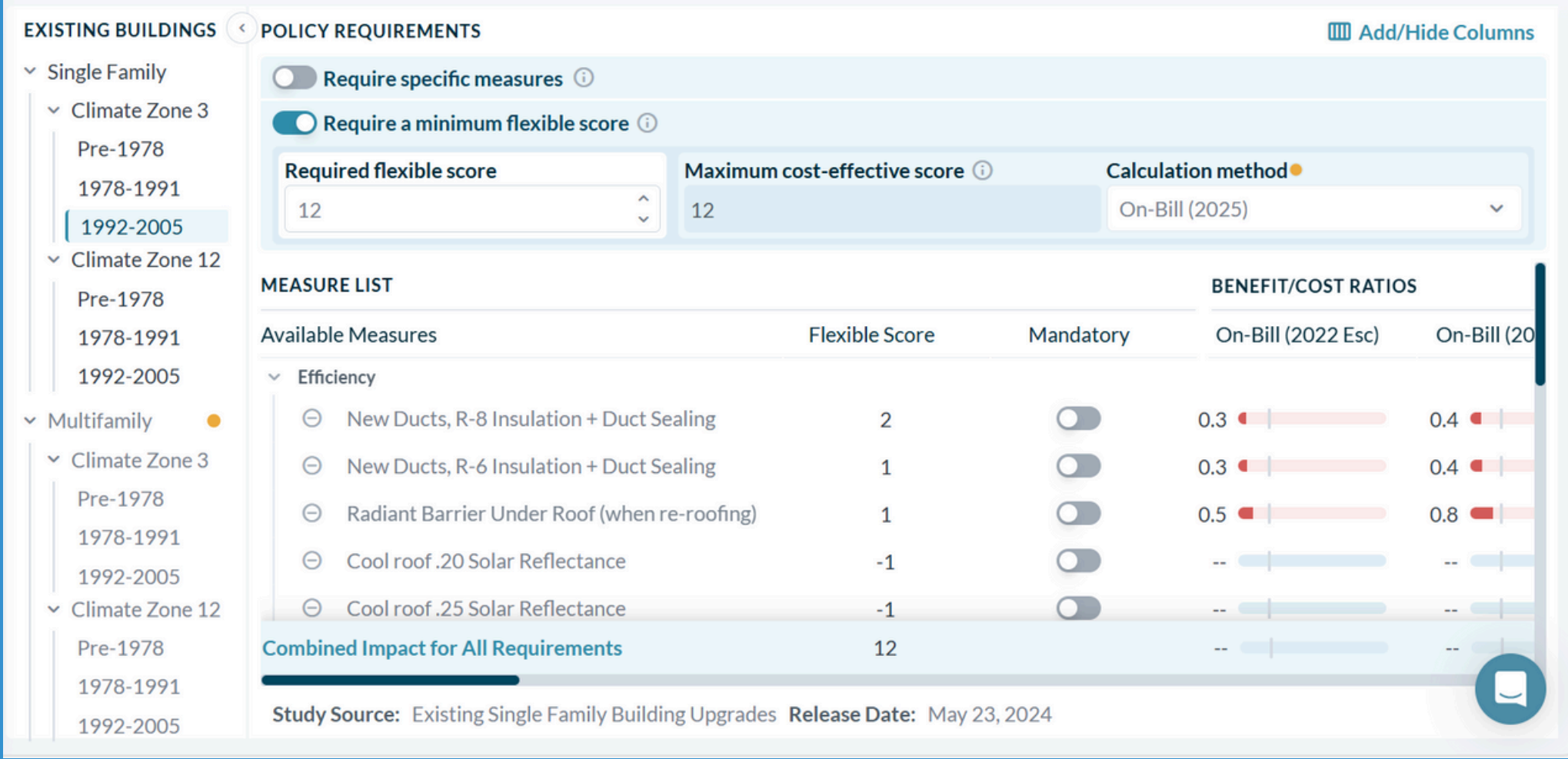
target score



3

| MENU OPTIONS                                 | Building Vintage | Air sealing                                     | 2  |
|--|------------------|---|----|
|  | Pre-1978 Points  | R-30 Raised Floor Insulation                    | 11 |
| New Ducts, R-8 Insulation + Duct Sealing     | 6                | Heat Pump Water Heater                          | 12 |
| New Ducts, R-6 Insulation + Duct Sealing     | 6                | Induction Cooktop                               | 1  |
| Radiant Barrier Under Roof (when re-roofing) | 2                | High Eff Heat Pump Water Heater (repl electric) | 6  |
| R-38 Attic insulation                        | 4                | Heat pump water heater with Elec Base           | 5  |
| R-19 Raised Floor Insulation                 | 9                | Heat Pump Space Conditioner                     | 18 |
| Water Heating Package                        | 1                | Dual fuel heat pump space conditioner           | 18 |
| Windows                                      | 4                | Heat Pump Clothes Dryer                         | 1  |
| R-13 Wall Insulation                         | 5                | High Eff Heat Pump Space Conditioner            | 19 |
| Duct sealing                                 | 3                | High Eff Heat Pump Water Heater                 | 13 |
| R-49 Attic insulation                        | 4                | Solar PV  | 13 |

# cost-effectiveness explorer



| MEASURE LIST                                   |                |                          | PER HOME RESULTS |
|--|----------------|--------------------------|------------------|
| Available Measures                             | Flexible Score | Mandatory                | Incremental Cost |
| ▼ Efficiency                                   |                |                          |                  |
| ⊖ New Ducts, R-8 Insulation + Duct Sealing     | 2              | <input type="checkbox"/> | \$6,311          |
| ⊖ New Ducts, R-6 Insulation + Duct Sealing     | 1              | <input type="checkbox"/> | \$4,808          |
| ⊖ Radiant Barrier Under Roof (when re-roofing) | 1              | <input type="checkbox"/> | \$893            |
| ⊖ Cool roof .20 Solar Reflectance              | -1             | <input type="checkbox"/> | \$893            |
| ⊖ Cool roof .25 Solar Reflectance              | -1             | <input type="checkbox"/> | \$1,786          |
| Combined Impact for All Requirements           | 12             |                          | \$8,742          |



$\geq 300$  sq ft



# PRE-1978 HOMES

R-19 raised floor insulation 9

duct sealing 3

project cost: ~\$6,000

annual bill savings: \$500

heat pump water heater 12

project cost: ~\$4,000

annual bill savings: \$212

R-30 raised floor insulation 11

induction cooktop\* 1

project cost: ~\$5,000

annual bill savings: \$400

\* close to replacement

# PRE-1978 HOMES



duct sealing 3  
project cost: ~\$2,600  
annual bill savings: \$150

heat pump water heater 12  
project cost: ~\$4,000  
annual bill savings: \$212

radiant barrier under roof 2  
induction cooktop\* 1  
project cost: ~\$1,700  
annual bill savings: \$71

\* close to replacement

# 1978-1991 HOMES

~2,500 homes



# FLEX PATH FOR 1978-1991

$\geq 300$  sq ft



$< 300$  sq ft





| MENU OPTIONS                                 | POINTS    | Air sealing                                     | 1  |
|--|-----------|---|----|
|  | 1978-1991 | R-30 Raised Floor Insulation                    | 10 |
| New Ducts, R-8 Insulation + Duct Sealing     | 4         | Heat Pump Water Heater                          | 12 |
| New Ducts, R-6 Insulation + Duct Sealing     | 4         | Induction Cooktop                               | 1  |
| Radiant Barrier Under Roof (when re-roofing) | 1         | High Eff Heat Pump Water Heater (repl electric) | 6  |
| R-38 Attic insulation                        | 1         | Heat pump water heater with Elec Base           | 5  |
| R-19 Raised Floor Insulation                 | 9         | Heat Pump Space Conditioner                     | 13 |
| Water Heating Package                        | 1         | Dual fuel heat pump space conditioner           | 13 |
| Windows                                      | 3         | Heat Pump Clothes Dryer                         | 1  |
| R-13 Wall Insulation                         | --        | High Eff Heat Pump Space Conditioner            | 14 |
| Duct sealing                                 | 2         | High Eff Heat Pump Water Heater                 | 13 |
| R-49 Attic insulation                        | 2         | Solar PV  | 13 |

# 1992-2005 HOMES

~600 homes



# FLEX PATH FOR 1992-2010

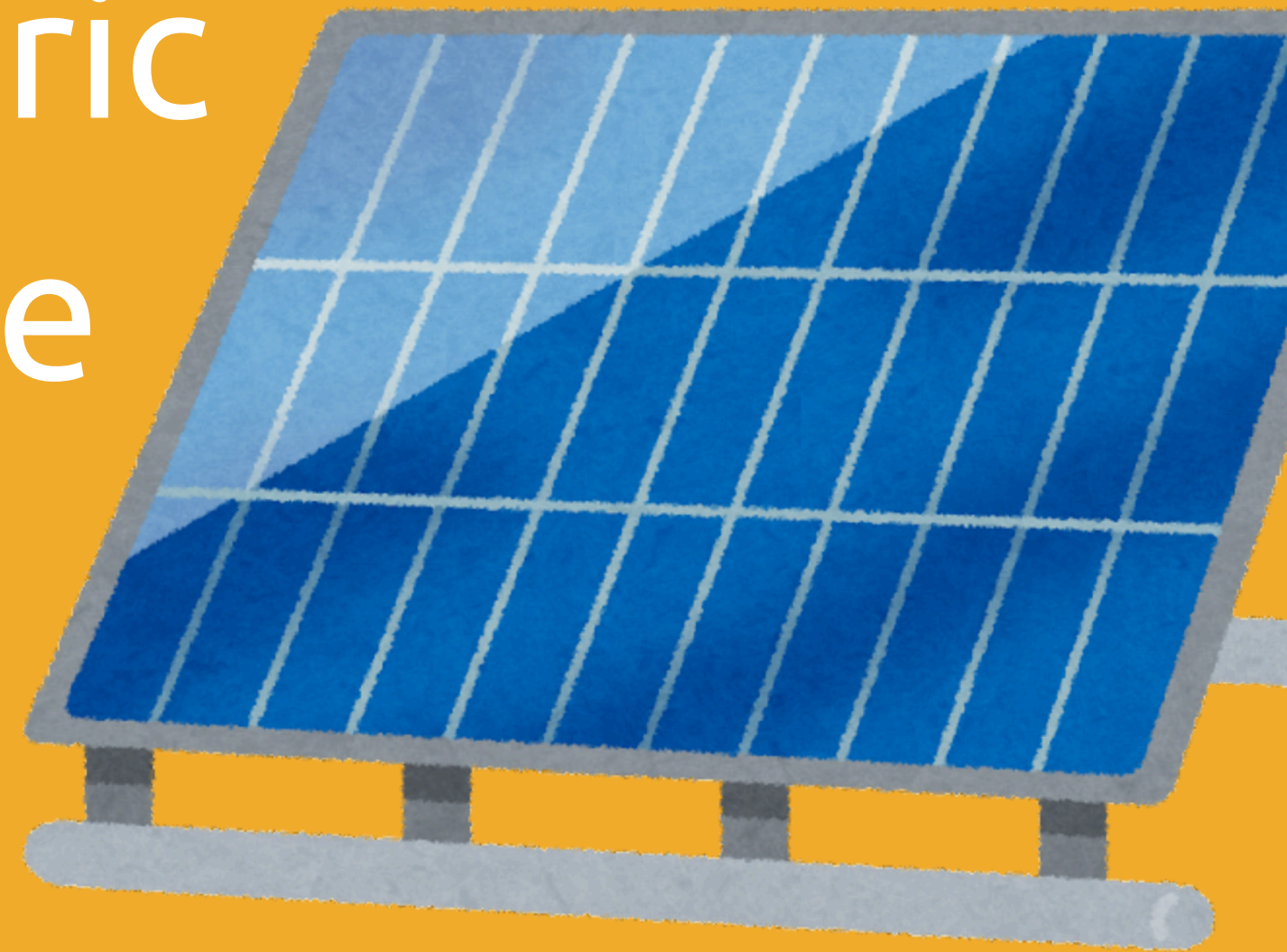
remodels/alteration  $\geq$  150 sq ft

1. Homes with existing Solar PV must complete electrification readiness measures
2. All other homes may be exempt

| MENU OPTIONS                                 | POINTS    | Air sealing                                     | 1  |
|--|-----------|---|----|
|  | 1992-2010 | R-30 Raised Floor Insulation                    | -- |
| New Ducts, R-8 Insulation + Duct Sealing     | 2         | Heat Pump Water Heater                          | 12 |
| New Ducts, R-6 Insulation + Duct Sealing     | 1         | Induction Cooktop                               | 1  |
| Radiant Barrier Under Roof (when re-roofing) | 1         | High Eff Heat Pump Water Heater (repl electric) | 6  |
| R-38 Attic insulation                        | --        | Heat pump water heater with Elec Base           | 5  |
| R-19 Raised Floor Insulation                 | --        | Heat Pump Space Conditioner                     | 12 |
| Water Heating Package                        | 1         | Dual fuel heat pump space conditioner           | 12 |
| Windows                                      | 4         | Heat Pump Clothes Dryer                         | 1  |
| R-13 Wall Insulation                         | --        | High Eff Heat Pump Space Conditioner            | 12 |
| Duct sealing                                 | 1         | High Eff Heat Pump Water Heater                 | 13 |
| R-49 Attic insulation                        | 1         | Solar PV  | 12 |



All homes can claim PV  
credit for previous  
installation to meet the  
target score given electric  
readiness measures are  
completed



Additional dwelling units 150 sq ft or less are preempt by State law

- The City may consider some requirements for ADUs >



# Reach codes for A/C replacement



## Requirements for Air Conditioners with Heat Pump Space Conditioning

| Heat Pumps |  |  |
|------------|--|--|
| Ducts      | State Code Requirements  | Additional Local Code Requirements                     |
| Existing   | <ul style="list-style-type: none"><li>• Duct sealing (10% leakage)</li><li>• Airflow efficiency (300 CFM/ton)</li><li>• Refrigerant charge verification</li></ul>  | <ul style="list-style-type: none"><li>• None</li></ul> |
| New        | <ul style="list-style-type: none"><li>• Duct sealing (5% leakage)</li><li>• Airflow efficiency (350 CFM/ton)</li><li>• Refrigerant charge verification</li><li>• Attic insulation (R-49)</li><li>• Air sealing</li></ul> | <ul style="list-style-type: none"><li>• None</li></ul> |



## Requirements for Air Conditioners without Heat Pump Space Conditioning

| Air Conditioners |  |   |
|------------------|--|---|
| Ducts            | State Code Requirements  | Additional Local Code Requirements  |
| Existing         | <ul style="list-style-type: none"><li>• Duct sealing (10% leakage)</li><li>• Airflow efficiency (300 CFM/ton)</li></ul>  | <ul style="list-style-type: none"><li>• Fan efficacy (0.45 watts/CFM)</li><li>• Attic insulation (R-49)</li><li>• Air sealing</li><li>• Refrigerant charge verification</li></ul> |
| New              | <ul style="list-style-type: none"><li>• Duct sealing (5% leakage)</li><li>• Airflow efficiency (350 CFM/ton)</li><li>• Refrigerant charge verification (Climate Zone 12)</li><li>• R-6 Duct insulation</li><li>• Attic Insulation (R-49)</li><li>• Air sealing</li></ul> | <ul style="list-style-type: none"><li>• Refrigerant charge verification (Climate Zone 3)</li><li>• Fan efficacy (0.35 watts/CFM)</li></ul>  |

OR



# Rebates and Incentives

## Pinole Energy Enhancement Rebate Program- PHASE 3 coming soon

The Switch is On rebate finder

|                                     |  |                 |
|-------------------------------------|--|-----------------|
| Duct sealing or replacement         | ≤ 5% total leakage   | Up to \$2,000** |
| Attic insulation                    | ≥ R-44   | Up to \$1,000   |
| Wall insulation                     | ≥ R-13 (2x4 framing) or ≥ R-19 (2x6 framing)                                   | Up to \$900     |
| High efficiency heat pump (HVAC)    |  | Up to \$3,000   |
| Heat pump water heater              | Unified energy factor (UEF) ≥ 3.30 (All tank sizes)                            | Up to \$3,000   |
| Induction electric range or cooktop | Must replace existing natural gas range or cooktop.                            | Up to \$500     |
| Heat pump clothes dryer             | ≥ 4.50 Combined Energy Factor (CEF). Must replace existing natural gas clothes | Up to \$400     |

Marin Clean Energy incentive finder

TECH Clean CA

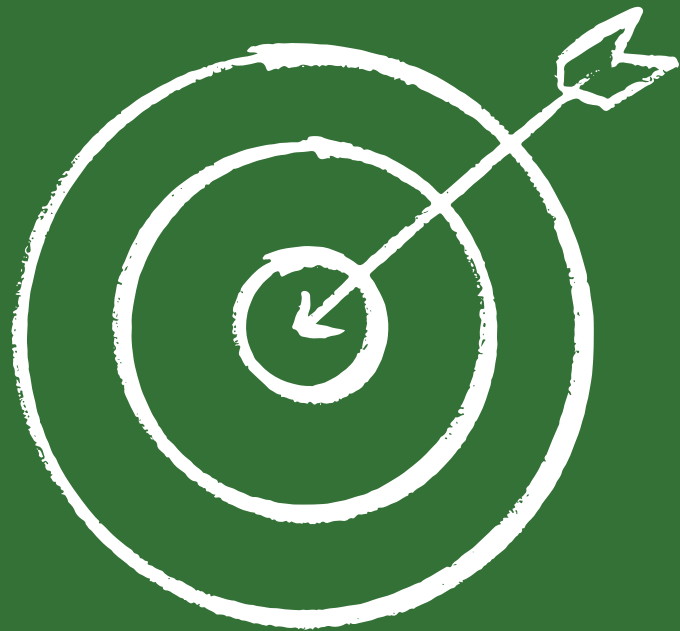
# FLEX PATH FOR PRE-1978

$\geq 300$  sq ft



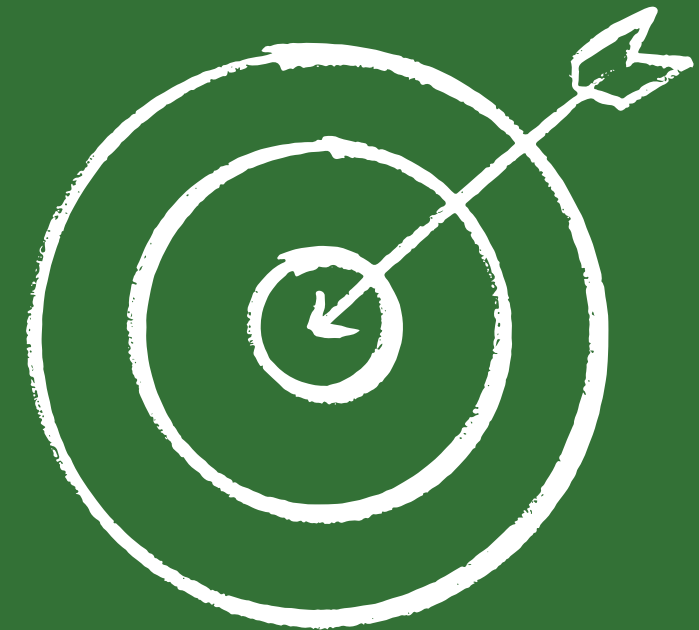
$< 300$  sq ft

target score



12

target score



3



# FLEX PATH FOR 1978-1991

$\geq 300$  sq ft



$< 300$  sq ft



slab on grade

# FLEX PATH FOR 1992-2010

remodels/alteration  $\geq$  150 sq ft

1. Homes with existing Solar PV must complete electrification readiness measures
2. All other homes may be exempt



## Requirements for Air Conditioners without Heat Pump Space Conditioning

| Air Conditioners |  |   |
|------------------|--|---|
| Ducts            | State Code Requirements  | Additional Local Code Requirements  |
| Existing         | <ul style="list-style-type: none"><li>• Duct sealing (10% leakage)</li><li>• Airflow efficiency (300 CFM/ton)</li></ul>  | <ul style="list-style-type: none"><li>• Fan efficacy (0.45 watts/CFM)</li><li>• Attic insulation (R-49)</li><li>• Air sealing</li><li>• Refrigerant charge verification</li></ul> |
| New              | <ul style="list-style-type: none"><li>• Duct sealing (5% leakage)</li><li>• Airflow efficiency (350 CFM/ton)</li><li>• Refrigerant charge verification (Climate Zone 12)</li><li>• R-6 Duct insulation</li><li>• Attic Insulation (R-49)</li><li>• Air sealing</li></ul> | <ul style="list-style-type: none"><li>• Refrigerant charge verification (Climate Zone 3)</li><li>• Fan efficacy (0.35 watts/CFM)</li></ul>  |



# Questions, comments, concerns?

Subscribe to the project page: <https://publicinput.com/t47742>

Email your thoughts: [98732@publicinput.com](mailto:98732@publicinput.com)

Leave your thoughts by phone: 855-925-2801 project code: 11743

Take the community survey: <https://publicinput.com/t47742>

Review and comment on the draft ordinance

Kapil Amin

Sustainability Project Manager

[kamin@pinole.gov](mailto:kamin@pinole.gov)

510-372-0989