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CTWI Written Comments on Homes P4P Program

Additional submitted attachment is included below.



August 28, 2025

Docket Number: 23-DECARB-01

Program: Inflation Reduction Act Residential Energy Rebate Programs

Subject: Construction Trades Workforce Initiative (CTWI) Written Comments on California HOMES P4P Program – Workforce Standards, Permit Compliance, and Quality Control Requirements

CTWI appreciates the opportunity to provide comments to the California Energy Commission regarding the Workforce Standards, Permit Compliance, and Quality Control Requirements of the California HOMES P4P Program. Note that these comments mirror many of the comments presented by the Sheet Metal Workers and IBEW.

For several years CTWI's Green Economy Program has focused considerable attention on how high road strategies can improve the climate and economic benefits of clean energy programs. We agree that the California Homes P4P program offers an opportunity to realize this ideal. These benefits should include healthy, safe buildings; good-paying jobs with healthcare for workers and their families; and the utilization of a skilled, trained workforce capable of meeting California's evolving energy and technology needs for decades to come.

1. Eligible Projects and Priorities

The staff proposal has posited that the Equitable Building Decarbonization Program, as a direct install program, is better designed to address the needs of deed restricted multi-family affordable housing projects. We agree, but would note the total funding allocated to the Equitable Building Decarbonization Program is likely far from sufficient to exhaust the demand. Accordingly, we would like to suggest that deed restricted affordable housing projects be eligible for this program too at the higher level rates allowed for low income households.

2. Workforce Standards Must Apply at the Technician Level



When it comes to HVAC Installation, current reliance solely on contractor licensing requirements are insufficient, as they only confirm that one person in the company has met the qualifications to be issued a license, not the individual technicians performing the work. The Statewide Implementer (SWI) must be required to adopt, enforce, and verify meaningful workforce standards that specifically apply to technicians in the field. Meaningful workforce standards should include:

- Comprehensive Training - Enrollment of technicians in state-approved apprenticeship programs to ensure comprehensive training in system design, installation, and adaptability to future technologies.
- Robust Compensation - Provision of healthcare for the technician and their family, a living wage, and a modest pension, ensuring that workers can live in and contribute to the same communities they serve.
- Vetted Employers - Exclusion of contractors with a history of labor or safety violations.
- Labor Standards - Enforcement and promotion of prevailing wage as a community benefit.

Contractors who meet these high-road workforce standards consistently deliver higher-quality installations, which in turn secure the expected energy savings over the life of the equipment.

3. Permit Compliance and Quality Installations Are Essential

Permit compliance is a minimum requirement for safety and code adherence. However, the CEC must move beyond a “permit pulled” checkbox and require proof of permit closure for all rebate projects. Projects with open or missing permits should be ineligible for payment, and any funds issued in error should be reclaimed.

To address California’s well-documented problem of improper HVAC installations, the program must incentivize contractors who invest in long-term technician training and quality work, not those who simply seek to maximize volume at the expense of



performance. All permits for electrical work must be pulled by licensed electrical contractors and performed by state certified electricians.

4. Measured Field Performance Data, Not Assumptions

The program must require physical field measurements to confirm that installed systems are operating as designed. Reliance on estimated savings or self-reported data creates opportunities for manipulation and is a disservice to the homeowners who pay for the equipment and installation on the promise of energy savings and peak performance. Quality assurance must include:

- Third-party acceptance testing, such as California Mechanical Acceptance Testing.
- Verification that energy savings of at least 15% are supported by both meter readings and on-site performance testing by qualified technicians to ensure that the equipment was installed correctly and operates as designed.
- Inspection protocols that ensure systems meet or exceed minimum safety and indoor air quality (IAQ) and ventilation code requirements.

4. Research Supporting the Urgent Need for Standards

The CEC's own 2008 Strategic Plan to Reduce the Energy Impact of Air Conditioners (CEC-400-2008- 010, p. 5) found that over 50% of new HVAC systems and 85% of replacements were not performing correctly due to poor installation. Additional studies confirm:

- Poor quality installations increase energy use by 20-30% (DOE, Residential HVAC Installation Practices: A Review of Research Findings).
- Duct leakage affects 90–100% of tested systems, with 20-30% of air lost through leaks (EPA, Improve your Home's Duct System for Comfort and Savings).
- Improper refrigerant charge and airflow issues are pervasive, with actual SEER performance at only 59–84% of rated capacity.
- A one-day contractor training program has been shown to have no measurable improvement on installation quality (Sullivan et al., 2015).
- Only 10% of residential HVAC installations in California have permits; unpermitted work undermines efficiency, safety, and accountability (NRDC, Poor-quality HVAC installs are costing us).



5. Program Design Recommendations by Subtask

- 3.2 Aggregator and Contractor Outreach: Focus on recruiting high-road contractors committed to apprenticeship training and community investment.
- 3.3 Contractor Oversight: Strict enforcement of workforce standards; exclusion of contractors with labor or safety violations.
- 4.1 Household Outreach: Educate homeowners on the benefits of choosing high-road contractors who take part in state-approved apprenticeship training programs using skilled and trained technicians.
- 4.3 Quality Assurance/Control: Require workforce standard verification, permit closure checks, and field performance testing before payment.
- 4.4 Consumer Satisfaction: Include long-term performance monitoring; remove poor performing contractors from program eligibility.
- 5.4 Data Management: Track closed permits, technician qualifications, and workforce compliance.
- 6.4 DAC Incentives: Add additional incentives for high-road contractors serving disadvantaged communities and employing workers from disadvantaged communities to create lasting economic and workforce benefits.

6. Two-Tiered Rebate System to Reward High-Road Contractors

The HOMES P4P program needs to acknowledge the limitations of performance verification. Measuring energy savings based solely on one year of whole-building energy use is problematic, as results can be influenced by occupant behavior, weather variations, or other external factors rather than the actual quality of the installation. In practice, this approach often functions as a broad energy-use guarantee rather than a true validation that the work was performed correctly.

To ensure meaningful outcomes, performance verification must go beyond total building energy use and account for equipment-specific factors such as indoor air quality, system performance, and fire safety. Incorporating workforce standards into the program is critical. By requiring trained and certified technicians, the program can help ensure that equipment is installed safely, functions as designed and delivers reliable performance for years to come.



To drive market transformation, the program should adopt a two-tiered rebate structure that rewards contractors who meet high-road workforce standards. This system ensures that ratepayer and state funds maximize energy savings and greenhouse gas emission reductions while supporting workforce development and amplified community benefits.

- Tier 1 – Base Rebate Available to all contractors who meet the minimum program requirements (closed permits, verified field performance, and compliance with safety codes). This establishes a baseline level of accountability for all rebate recipients.
- Tier 2 – High-Road Rebate Provides enhanced rebate amounts for contractors who demonstrate compliance with meaningful workforce standards, including:
 - Enrolling technicians in state-approved apprenticeship programs for comprehensive training.
 - Providing family healthcare, a living wage, and retirement benefits.
 - Maintaining a clean record free of labor and safety violations.
 - Paying prevailing wage

This higher rebate level will not only incentivize more contractors to become high-road contractors but will also secure better installation quality and long-term performance across the market. By differentiating rebate levels, the program can:

- Reward contractors who invest in skilled and trained, community-rooted workforces.
- Encourage consumers to embrace this technology without the risk of poor performance of equipment by signaling to prospective customers that a higher-tiered contractor supports high road contracting.
- Protect consumers by ensuring installations deliver promised energy savings well before the energy measurement savings are calculated.
- Strengthen the pipeline of skilled workers by aligning with state-approved apprenticeship pathways.
- Reduce costs over time by lowering warranty claims, callbacks, and efficiency losses from poor installations.

Conclusion



The HOMES P4P program has the potential to be a model for the nation, but only if it is built on rigorous enforcement of technician-level workforce standards, verified permit compliance, and field-measured performance data. The CEC must not allow a race to the bottom in quality and performance in the name of rapid deployment. Instead, it should seize this opportunity to change the trajectory of California's residential installations toward excellence, accountability, and community benefit.

Respectfully,

A handwritten signature in black ink, appearing to read 'Tim Frank'.

Tim Frank

CTWI Board Member and Policy Advisor