

# Residential HVAC Alts. Permit Compliance

## Best Practices & Financing Pilots

Marissa Spata, Project Manager  
BayREN Codes & Standards Forum, April 21, 2015



Center for  
Sustainable Energy™

# Our Mission:

Accelerate the transition  
to a sustainable world  
powered by clean energy



Energy Programs



Public Sector Services



Workforce Training

# Today's Discussion

- *HVAC Permit Compliance & Financing Pilots*
  - *Residential HVAC Permit Compliance: A Policy Overview & Best Practices Guide*
    - Study methodology and best practices for building departments
  - *Cool Comfort Financing Program*
    - Residential HVAC change-out financing
    - Innovative program QC: final permit verification & compliance form review





A photograph of an HVAC technician wearing a yellow hard hat and a light blue shirt, kneeling and working on the electrical wiring of a large, tan-colored outdoor HVAC unit. The technician is focused on the task, with his hands near a bundle of colorful wires. The background shows several other similar HVAC units installed outdoors. A yellow banner is overlaid on the top part of the image, and a semi-transparent white banner is in the middle.

*California is expected to reach 50%  
HVAC compliance by 2015*

*The CEC estimates that up to 90% of  
residential HVAC change-outs go unpermitted.*

# Why do we care about permit compliance?

- To ensure HVAC installations meet Title 24, Part 6 standards
- To ensure safe installations
- To track energy savings tied to HVAC change-outs to support climate action plans and state greenhouse gas reduction goals
- To ensure a level playing field for contractors who follow the rules

# Project Background

- CSE led a 14-month study on residential HVAC alts. permit compliance
  - Assess Title 24, Part 6 (California's Building Energy Efficiency Standards) compliance barriers
  - Identify and promote effective permit streamlining strategies
- Research methods
  - Online survey
  - Conduct energy policy analysis (state and local levels)
  - Convene local governments (building departments)
  - Engage industry stakeholders that have the greatest ability cultivate change within the HVAC compliance market (CSLB, contractors, HERS providers, permit software providers, etc.)
- Area of study: Southern California
  - Counties of Los Angeles, Orange, Riverside, San Bernardino, San Diego & Ventura

# Project Design

## Target Audience

- Building departments, plan reviewers, permit processors, planners and any other depts. invested in tracking energy reduction data.

## Major Milestones

1. HVAC Permit Compliance Survey – **March/April 2014**
2. Local Gov. Working Groups (regional); presented survey results – **Sept/Oct 2014**
3. Local Gov. Working Groups (one-on-one); explored best practices – **Nov 2014**
4. HVAC Permit Compliance Best Practice Guide – **April 2015**
5. Local Gov. Outreach & Best Practice Implementation– **Now through June 2015**

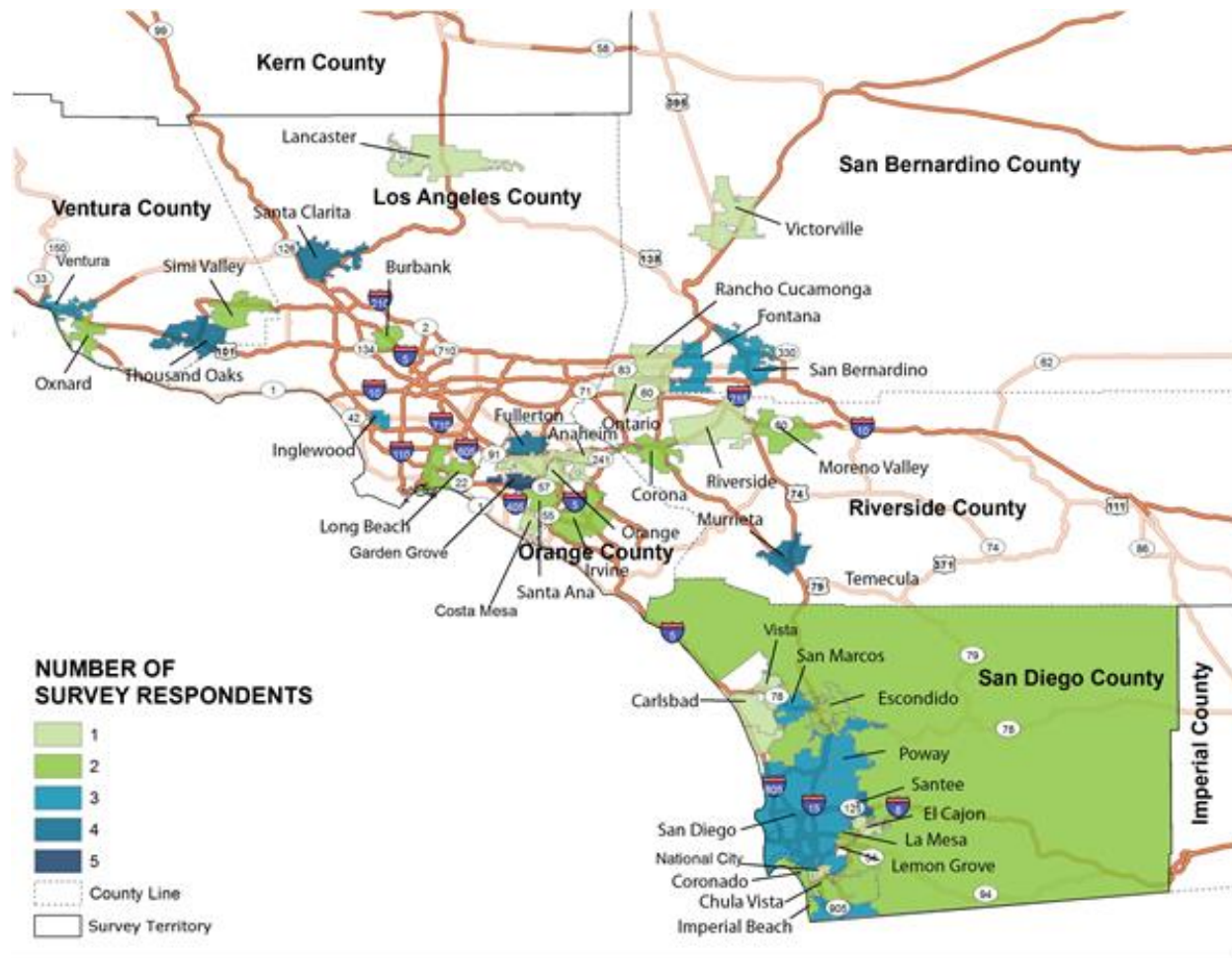


# Survey Design

- Focus: residential HVAC alterations compliance
- Distributed March-April 2014
  - 54 Southern CA Bldg. Depts.
    - Surveyed jurisdictions with varying populations
      - Small ~25,000 – 90,000
      - Medium ~100,000 – 250,000
      - Large 250,000+
  - 94 contractors, raters, and permit service providers
- Sections
  - Building Department Resources
  - Compliance Documentation
  - Permit Tracking
  - Permit Compliance Barriers
- Questions based on responder job role (~50 Qs.)
  - Results identify compliance barriers specific to HVAC stakeholder

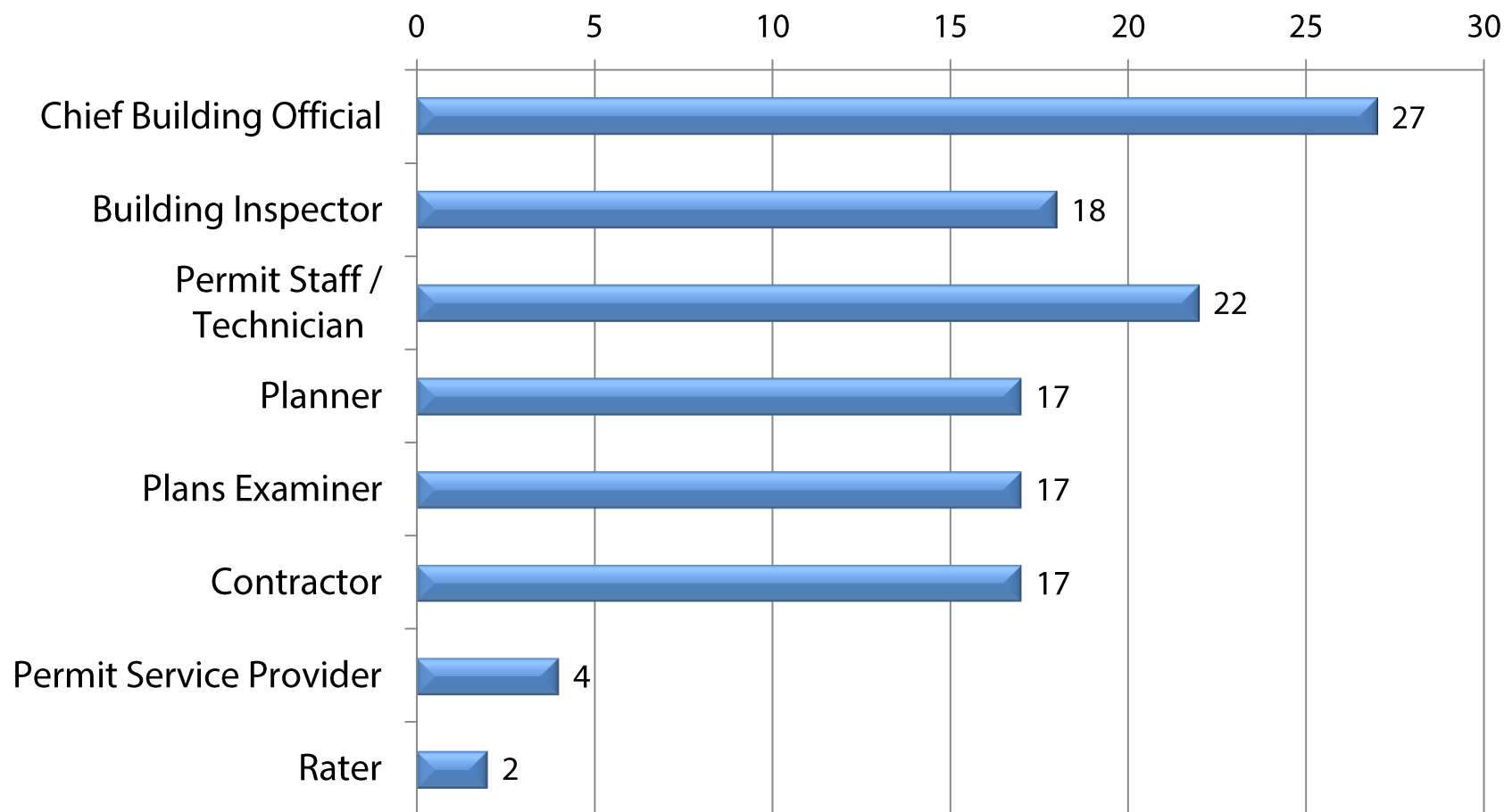


# Respondents by Region



# Respondents by Job Role

**Total Respondents: 124**



# Major Survey Takeaways

- Building departments feel equipped to 'implement' Title 24, Part 6, but ill-equipped to 'enforce'.
- Building departments' field staff resources are strained.
- Building departments feel that applicants need more education about the energy code and the permit process in general.
- Compliance forms are an opportunity to capture energy savings for jurisdictions, but the forms are too long and cumbersome for applicants.
- Checklists are not widely used
- 90% of building departments use permitting software to track permits internally, yet, on average only 32% allow applicants to track their own permits online.

# Best Practice: Clear Website Information

Building Depts. can use their websites to educate applicants:

- Communicate permit process steps
- How to apply for a permit
- Compliance form (CF-1R) completion and submittal instructions
- Provide fillable forms that can be submitted online
- Direct points of contact for permit Qs
- Fee schedule
- Application & inspection timelines
- Inspection requirements, what to expect





# Best Practice: Permit Checklists

Bldg. Depts. can encourage/require the **use of checklists**:

- **Permit technicians**
  - Can use checklists to review permit applications and CF-1R for correctness and completion, and potentially minimizes approval delays.
- **Building inspectors**
  - Can use checklists in the field to ensure projects meet minimum energy code specifications and CF-2R and 3R-ALTS completeness.
- **Applicants**
  - Can use checklists to ensure applications and compliance documents are completed correctly the first time.



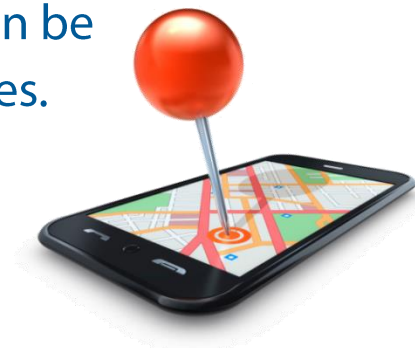
# Best Practice: HERS Raters as Special Inspectors

- **33%** of the responding CBOs would be willing to forego or limit building inspections for projects receiving mandatory third-party quality assurance
  - The HERS FV/DT process can provide that assurance
  - But, health/safety concerns may not be addressed
- Allow **HERS raters** to acquire bldg. dept.-recognized credentials (ICC or equiv.) and become “**special inspector**” for building departments
- Building depts. could hire HERS raters for specific projects (e.g., HVAC alts.)
  - Perform all the regular duties of the bldg. inspector
  - Provide verification that the project complies with all codes, not just Title 24, Part 6



# Best Practice: Virtual Inspections

- Perform **final bldg. inspection remotely** with the assistance of audio-visual tools and geolocation.
  - This solution requires relatively inexpensive technologies such as tablets with video calling capability (e.g. Skype or FaceTime) and a geolocator application.
- Bldg. inspectors arrange to “video chat” with HERS raters or the homeowner toward the end of a scheduled FV/DT.
  - Facilitate a tour around the attic, complete with gentle tugs on critical connections and a closer look at life-safety concerns.
- Virtual inspections **save both inspector and travel time** which can be especially advantageous in large jurisdictions with remote locales.
  - Reduced trips result in GHG reductions and a boon for CAP goals.



# Best Practice: Energy Code Coach

- **Energy code coach** is an expert in Title 24, Part 6 (and ideally Part 11/CALGreen) with experience in plan checking and working with building department staff.
- The coach spends 1 - 2 days a week **working inside the building dept.** to:
  - Continuously assess the current level of understanding of Title 24, Parts 6 and 11 (CALGreen) among building department staff and the local development community.
  - Work collaboratively with staff to identify opportunities for learning and barriers to code implementation and enforcement.
  - Provide tailored, direct, hands-on assistance and training to increase capacity for code enforcement.
  - Develop customized tools and resources (e.g., checklists, corrections lists, website content, etc.) that address the needs of staff and the development community to better implement and enforce code.



# Best Practices: Statewide Permit Platform

- Promote the adoption of a statewide, state-subsidized, hosted and implemented online permitting platform.
- This is a more feasible option for many jurisdictions and will encourage consistency in the permitting process.
- One system adopted by multiple jurisdictions would be attractive to HVAC installers who work across jurisdictional boundaries.
  - Contractors reported inconsistent processes as a barrier in the survey.
  - A consistent permit application process would reduce confusion and the need for applicants to familiarize themselves with different processes from city to city.

# Best Practice: Statewide Permit Platform

- Vision

- Jurisdictions create a login and access permits through online platform

**OR**

- The platform connects to a jurisdiction's existing software system through an application program interface (API). Information from the platform populates existing software like any other project, **eliminating the need for staff to learn or adopt a new system**
- System communicates with HERS registries.
- HERS providers participate in design and development

- Adoption

- Voluntary and 'opt-in'
- Geared towards jurisdictions that do not have the resources to procure, develop or maintain costly software



# Next Steps

1. CEC reviews report and provides feedback
2. CSE develops *Best Practices Toolkit* for local building departments and disseminates via webinars and presentations at ICC & CALBO chapters: **now – June 2015.**
3. Building departments put these best practices into action!



*City of Chula Vista – CSE Energy Code Coach*

Visit [www.energycenter.org/permitting](http://www.energycenter.org/permitting)



# Cool Comfort Financing



# What is Cool Comfort Financing?



theenergy  
network  
residents saving action  
to save energy

Rates as low as  
2% APR\*  
Available for a  
limited time

**Cool Comfort Financing**

Take advantage of low-interest financing to jump-start your heating and cooling home upgrade project. In collaboration with The Energy Network, Matadors Community Credit Union offers eligible homeowners low rate financing on residential Heating, Ventilation and Air Conditioning (HVAC) projects.

Start your HVAC upgrade today with Cool Comfort Financing.

**Why upgrade?**  
Comfort — Improve your home to stay warmer in the winter and cooler in the summer.  
Healthy Living — Improve indoor air quality with a residential HVAC upgrade.

**Why now?**  
Special Financing — Take advantage of low rates so you can start your upgrade sooner.  
Fast Approval Process — Benefit from our quick (up to 1 hour) pre-approval process.

**It's easy to get started with Cool Comfort Financing.**

- 1 Contact a Cool Comfort Financing contractor.
- 2 Complete the loan application.
- 3 Upgrade your HVAC system.
- 4 Save money with Cool Comfort Financing.

Call (877) 785-2229 to learn more or visit <https://action.theenergynetwork.com/ccf> to find a Cool Comfort Financing contractor.



Matadors  
Community  
Credit Union

- Residential HVAC Change-Out Financing Program
- Low-interest APR for qualifying projects
- Program goals:
  - Level the playing field for contractors
  - Promote & ensure HVAC permit compliance
  - Assess permit compliance barriers

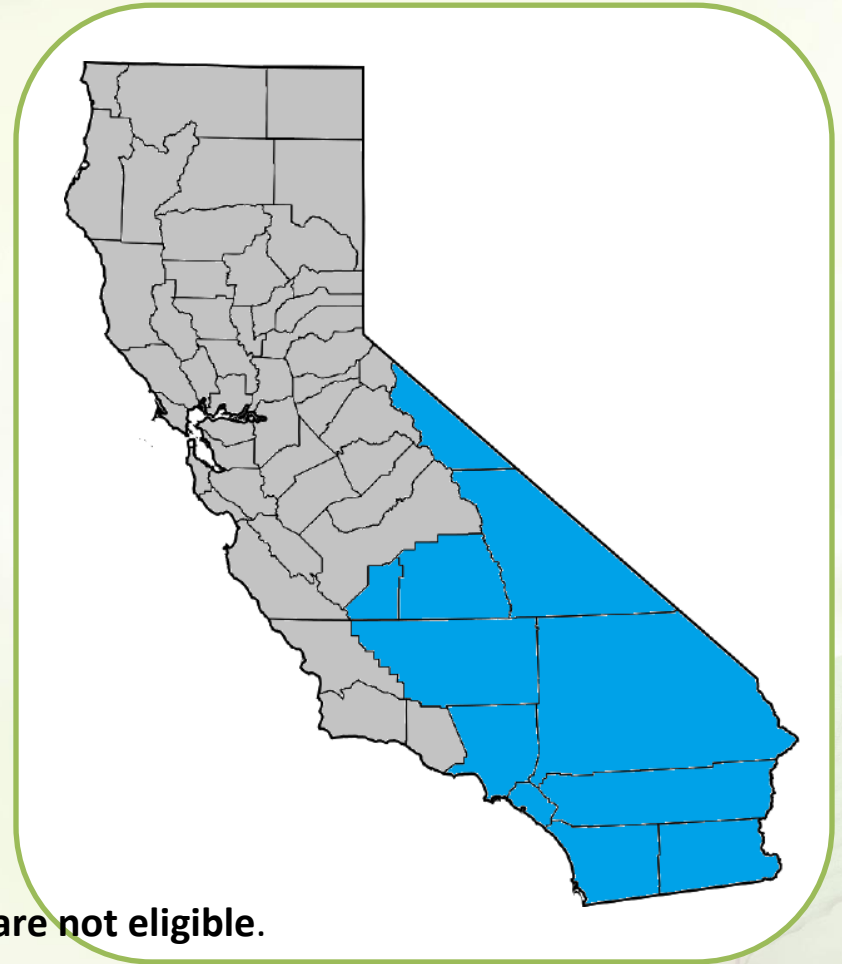
# Cool Comfort Financing: Availability

Properties served by **at least one of the following utilities**: Southern California Edison, Southern California Gas Company or San Diego Gas and Electric.

This includes the following counties\*:

- San Diego
- Los Angeles
- San Bernardino
- Riverside
- Inyo
- Imperial
- Mono
- Portions of:
  - Orange
  - Kern
  - Tulare
  - Kings

\*Santa Barbara, Ventura, and San Luis Obispo Counties **are not eligible**.



# Qualifying Upgrades & Financing Terms

## Qualifying Projects\*\*



### Air Conditioner

Min. 15 SEER & 12 EER



### Furnace

Min. 92% AFUE



### Heat Pump

Min. 8 HSPF, 15 SEER & 12 EER

Payback Periods:



5 Years

4.99% APR

Limited  
Time:  
2% APR

10 Years

5.99% APR

Limited  
Time:  
3% APR

\*\*All projects must include duct improvements to ensure HVAC efficiency:

- **Duct sealing**  $\leq$  10% leakage **and** insulated to  $\geq$  R-8
- **Duct replacement** sealed to  $\leq$  6% leakage **and** insulated  $\geq$  R-8

# Innovative Strategies: Contractor Resources



## Cool Comfort Financing

Contractor Manual

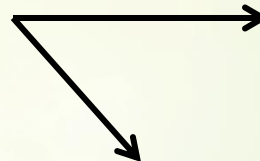


Last revised  
**September 2014**

(877) 785-2237  
coolcomfort@theenergynetwork.com

The Energy Network is Administered by the County of Los Angeles and funded by California utility rate-payers under the auspices of the California Public Utilities Commission.

## Marketing Starter Kit!



**Cool Comfort Financing**

Take advantage of low-interest financing to jump-start your heating and cooling home upgrade project. In collaboration with The Energy Network and the Center for Sustainable Energy, Matadors Community Credit Union offers eligible homeowners low rate financing on residential Heating, Ventilation and Air Conditioning (HVAC) projects.

Start your HVAC upgrade today with Cool Comfort Financing.

**Why upgrade?**

Comfort — Improve your home to stay warmer in the winter and cooler in the summer.

Healthy Living — Improve indoor air quality with a residential HVAC upgrade.

**Why now?**

Special Financing — Take advantage of low rates so you can start your upgrade sooner.

Fast Approval Process — Benefit from our quick 24-hour loan pre-approval process.

**It's easy to get started with Cool Comfort Financing.**

1. Contact a Cool Comfort Financing contractor
2. Complete the loan application
3. Upgrade your HVAC system
4. Save money with Cool Comfort Financing

Call (877) 785-2237 to learn more or visit [action.theenergynetwork.com/cdf](http://action.theenergynetwork.com/cdf).

Visit [energycenter.org/CoolComfort](http://energycenter.org/CoolComfort) to see the list of Cool Comfort Financing participating contractors.

Center for Sustainable Energy™  
Matadors Community Credit Union

Place business card here.

**Cool Comfort Participating Contractor**

**Can't stand the heat?**

Take advantage of low-interest financing to jumpstart your HVAC upgrade with Cool Comfort Financing!

Center for Sustainable Energy™  
theenergynetwork  
residents taking action to save energy





# Contractor Resources Cont.

[www.energycenter.org/coolcomfort/contractors](http://www.energycenter.org/coolcomfort/contractors)



Search... 

HOME

PROGRAMS

EDUCATION

POLICY

ABOUT

JOBS

NEWS

EVENTS

CONTACT

## COOL COMFORT FINANCING

- + About the Program
- + Participating Contractors
- + Contractors: How to Participate
- + Homeowners: Get Started

## CONTRACTOR WEBINAR

Learn about Contractor Enrollment, 24-hr Loan Application Process, Qualifying Upgrades, Marketing Tools, and more.

[View Webinar](#)





## CONTRACTOR RESOURCE



Download the

## Contractors: How to Participate in Cool Comfort Financing

Interested contractors that meet the eligibility criteria above must complete the following:

- Read the  **Cool Comfort Financing Contractor Manual** for all information about the program's eligible equipment, quality control standards and fund disbursement.
- Read and sign the  **Cool Comfort Financing Participation Agreement**, and send the digital signed document to Marissa Spata.
- Read the  **Quality Control Plan**, mentioned in the Participation Agreement as Appendix A.
- View the  **Cool Comfort Financing Contractor Webinar**, which includes the Cool Comfort Financing frequently asked questions. Please note, the maximum loan amount was lowered to \$15,000 after this webinar had occurred, the \$15,000 cap is not reflected in the slides.

CSE will review the **Cool Comfort Financing Participation Agreement** and ensure the contractor is in good standing with one of the programs mentioned above. Once approved, CSE will let the contractor know the business's name has been added to the Cool Comfort Financing **Participating Contractors** list.

At this point you are ready to offer Cool Comfort Financing to homeowners! You and your homeowners can download the  **Financing Application Packet**® and get started.

Contact [Marissa Spata](#) with any participating contractor questions at 858-244-1177. Contact [The Energy Network](#) with any loan application questions at 877-785-2237.

Are you a homeowner interested in [getting started](#)?

\* Loan applications will not be accepted if the contractor is not listed on the Cool Comfort Financing Participating Contractor list.

# Innovative Strategies: Quality Control

- **100% permit verification (initial & final) = ensure completion of local and & Title 24 compliance process**
- **Desktop Reviews**
  - Perform HERS (Title 24, Part 6) compliance forms verification
  - Verify equipment efficiency and work performed MATCHES CF-1R & CF-3R
    - i.e. SEER, AFUE, HSPF, EER, R-value, Energy Factor
- **Field Inspections**
  - Equipment verification: Scope of work, final invoice, AND unit(s) physically installed MATCH
  - Attend alongside HERS FV/DT or Building Inspector final field inspection

# Identifying Compliance Barriers

- **Permit Verifications**
  - Level of Bldg. Dept. technology innovation affects efficiency
- **Compliance Documentation**
  - Ensure consistency between CF-1Rs and CF-3Rs
- **Final Inspections**
  - Often left up to the homeowner = delays
- **Contractor Surveys**
  - Permit process = burdensome when you have to go in
  - Title 24, Part 6 = too many forms
  - **Online permitting** ranked #1 most need Bldg. Dept. resource!

# Questions?



Center for  
Sustainable Energy™

Lindsey Hawes, Sr. Program Manager

(858) 633-1390

[lindsey.hawes@energycenter.org](mailto:lindsey.hawes@energycenter.org)

Marissa Spata, Project Manager

(858) 737-1584

[marissa.spata@energycenter.org](mailto:marissa.spata@energycenter.org)

Visit us @ [www.energycenter.org](http://www.energycenter.org)