

**DOCKETED**

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*Comment Received From: Kristin Heinemeier*  
*Submitted On: 8/27/2018*  
*Docket Number: 17-EBP-01*

**Comments on Improving Compliance for Residential HVAC Replacements**

*Additional submitted attachment is included below.*

From: Kristin, Heinemeier, Principal, Realized Energy Solutions, [realized-energy.com](http://realized-energy.com)  
Date: August 27, 2018  
Re: Comments on Docket Number: 17-EBP-01 (Project Title: Improving Energy Compliance of Central Air-Conditioning and Heat Pump Systems).

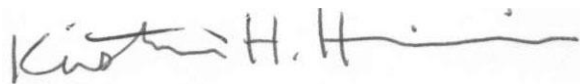
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Commissioner McAllister:

I hereby submit comments on Docket Number: 17-EBP-01 (Project Title: Improving Energy Compliance of Central Air-Conditioning and Heat Pump Systems). Over many years of working on the topic of Code Compliance (including several years serving as chair of the WHPA Compliance Subcommittee), I have developed a perspective on things that can help to improve code compliance in California. While most discussion associated with this proceeding to date has focused on a small number of possible policy solutions, I believe that there is no silver bullet, and a range of activities are needed to help transform the HVAC industry in California to one in which energy efficient systems are delivered reliably without the need for burdensome regulation or un-sustainable incentives. "Fixing" this industry holistically will have much more bang for the buck as we all pursue solutions that will ensure a healthy future for our children and grandchildren.

Thank you for undertaking this proceeding, and for considering my comments.

Respectfully,



Kristin H. Heinemeier

#### A. CREATE A "CREDIBLE THREAT" OF BEING CAUGHT

An HVAC Registry may be an effective way to catch the largest number of scofflaws. But this need not be the goal. Rather it should be to create a credible threat of being caught.

- 1) Provide support to CSLB as they conduct stings, and help them to publicize the outcomes. This high-profile publicity should provide enough of a threat to create a deterrent.
- 2) Review mechanisms for turning in scofflaws (by code officials, customers, other contractors, etc.) to ensure efficacy and convenience, as well as to ensure broad awareness of their existence.

**B. CREATE A "CREDIBLE THREAT" OF SERIOUS CONSEQUENCES**

*Note that even if an HVAC Registry is created, it will not solve the problem unless there is a mechanism in place to punish the people who are caught.* The CEC must ensure that penalties are well known and sufficiently strong to dissuade non-compliance.

- 3) In CSLB stings, ensure that the publicity includes vivid description of the consequences of being caught without a permit. Again, the goal is to provide a deterrent through providing a credible threat of bad consequences that are worth avoiding.
- 4) Work with CSLB, the state Attorney General, and local District Attorneys to come up with a statewide policy that can be consistently effective. It should be something like:
  - First Strike: **Warning Letter**
  - Second Strike: **Listed on Website**
  - Third Strike: **License is Taken Away**
- 5) I do not support implementation of a state-wide registry of HVAC sales. If implemented, however, it must provide resources for adequate implementation, policies that have a chance of reliably identifying scofflaws, and a meaningful penalty. Such an implementation must be built upon meaningful engagement with industry to develop a tracking system that is effective and does not provide unnecessary barriers to commerce. If at all possible, encourage the industry to develop their own (possibly nation-wide) solutions. I believe that if some of my other recommendations are implemented thoroughly enough and embraced throughout the industry, registration and tracking may not be needed. However, there may be other benefits to HVAC registry that could justify its development...see the note on recommendation #18.

**C. REDUCE THE COST OF COMPLIANCE**

According to the [2015 CIAG White Paper #13](#), compliance for a simple furnace replacement increases the job cost from \$2400 to \$4100: a difference of \$1700 or 73%. Two-thirds of the incremental cost is for permitting and HERS verification (not a direct benefit to anyone). Initiate efforts to reduce the cost of compliance.

- 6) Institute a state-wide online permit application process. Provide development resources and assign responsibility to industry to design a system that will work. Consider encouraging code official organizations to be the lead development agency. Consider establishing a statewide flat (or proportional) fee for permits.
- 7) Or, to overcome the need to adapt to special considerations from a plethora of local jurisdictions, consider decoupling the energy code compliance process from the city building permit process. Energy code compliance is tied to the city building permit process because it should be a convenient way to "trigger" the energy code. However, this clearly is not happening, so it may be time for a radical reconsideration of that process. It is conceivable that a separate (parallel?) process might be less costly to consumers and city code offices, and therefore less of a barrier to implementing energy measures. Be open to such proposals.

- 8) Develop a streamlined process for verifying that quality code-compliant work is done. This should include things like using electronic means for contractors to self-certify, verify, and document their installations, along with a process of random sampling for field-validation of these self-certifications. The random sampling should take into account a contractor's history of previous validations, and reward contractors who routinely do good work and have valid certifications with a reduced sampling rate. Reconsider HERS verification procedures that are expensive and do not necessarily ensure quality installations. Specifically, revisit the code-required contractor and HERS rater charge adjustment tests that have not proven to be reliable and have cost California credibility.

#### D. HELP CONTRACTORS EXPLAIN HIGHER BID

Recognize that contractors will have to sell energy efficiency and quality installation, and provide support to them to enable them to do that consistently. Provide resources for contractors attempting to sell compliant installation jobs. This should include the following actions:

- 9) Sponsor a process aimed to develop a well-articulated argument for the benefits that the customer can expect directly and indirectly, which can be used by contractors in the sales process.
- 10) Sponsor research or other mechanisms to develop data and analytic tools to support communicating the value proposition.
- 11) Play a critical role in salesmanship training, through actions such as curriculum development, sponsorship of seminars or webinars, and providing expert presenters for other entities to engage.

#### E. HELP DISTINGUISH QUALITY CONTRACTORS

In addition to help with direct salesmanship, provide support to the industry as it works to re-make its image. This includes both improvement of quality services as well as reinforcement of the professionalism of the industry in customers' eyes. This could be criticized as government support of an individual industry to do something it should do anyway. However, HVAC contractors are the "tip of the spear" in improving HVAC performance, and it will not happen absent significant support. In addition, many HVAC firms are vulnerable small businesses that merit government assistance.

- 12) Sponsor development and deployment of tools that will help well-meaning contractors to distinguish necessary work from unnecessary work. This could consist of developing a document or other marketing collateral that describes in detail some of the things that typically go wrong with air-conditioning systems. It could also include a standardized documentation of problems including photographs, measurements, and reports form analysis tools. These will counter the common industry practice of "upselling" (trying to sell customers fixes that are not really necessary), which does real harm to the effort to gain trust and encourage customers to take contractor's advice and authorize permitted work.

- 13) Contribute to development of meaningful contractor and/or technician certifications that can help quality contractors to gain customer respect and confidence. Help to promote the value of those certifications through mechanisms such as state-wide branding (on uniform patches, truck decals, and marketing materials, performance reports, bids, etc.) and link it to things like state procurement policy, and contractor licensing. Provide or support training and testing necessary to give the certification validity. Ideally, this should be based upon existing industry certifications, after reviewing their adequacy.
- 14) Develop templates for reporting findings. This will help to enhance customer's perception of the value they will receive. This can include branding, a state-specified test form to record measurements and analysis results, and documentation of deficiencies.
- 15) Work with industry to develop a rubric (questionnaire) that customers can use for evaluating the quality of a contractor. Disseminate this directly via CEC websites and trainings, as well as via local code offices, distributorships, and other industry venues.
- 16) As part of the dissemination of this customer evaluation questionnaire, host a clearinghouse of customer evaluations (based on the questionnaire) or partner with and provide guidance to third-party clearinghouses (such as Yelp and Angie's List).

#### F. CREATE A 360 DEGREE CULTURE OF COMPLIANCE

In the interest of spreading the responsibility for enforcement, and also providing a seamless message to the entire industry, the CEC should facilitate mechanisms designed to create a "360-degree Culture of Compliance." This might include:

- 17) Develop a local pilot program of resale inspections, with an eye towards eventual state-wide implementation. This might be more limited than the one currently in place in Davis, in which a home sale triggers a full home inspection. It is possible that a program limited to verifying permitted HVAC work would be easier to implement and receive less resistance. Pursue this by reaching out to and finding local champions in the realtor communities in Davis, Berkeley, and Portland (the latter two currently have resale *rating* requirements, which required working closely with the realtor communities). Consider a two-stage implementation regime: Stage I is a well-supported pilot and voluntary program for cities, including lots of assistance and an amnesty phase; and Stage II is a mandatory state-wide program.
- 18) Work with all industry stakeholders to identify additional ways that lack of a permit could trigger negative consequences for customers, contractors, cities, or state agencies. Some mechanisms may require legislation at the state or local levels to implement. These should include:
  - Disallow IOU rebates for unpermitted installation of energy efficient systems (upstream, midstream, or downstream);
  - Disallow state and federal tax credits for unpermitted installation of energy efficient systems;
  - Encourage manufacturers, distributors, contractors, builders, and the Home Warranty industry to invalidate or limit warranties from unpermitted installations;

- Encourage homeowner hazard insurance providers to invalidate policies or provide limitations on coverage;
- Work with major purchasing sites (such as Amazon) to provide information and barriers to online HVAC purchases;
- Withhold local business licenses or license renewals to contractors who have historically not complied;
- Withhold contractor license renewal for contractors who have historically not complied;
- Create a right to a permitted HVAC system in Fair Housing legislation and things like local Renter Bills of Rights, and take action against landlords who violate that right;
- Withhold CEC approval for local Green Codes for cities that have not demonstrated a serious attempt to enforce Title 24;
- Encourage contractors performing HVAC service calls or selling maintenance contracts to charge an additional fee to work on unpermitted systems.

*(Note that all of these mechanisms would benefit from (and in some cases may ONLY be possible with) a system to easily lookup code-compliance status—through an HVAC registry or other suitable mechanism. I see this as a valid justification for developing a registry.)*

#### G. ASSIST CUSTOMERS WHO ARE UNABLE TO PAY FOR A NEW SYSTEM

If we are successful in achieving a level playing field in which all contractors insist on taking out permits, one consequence could be that customers who cannot afford the incremental cost of permitted work (or even the base cost of unpermitted work) may decide not to replace their systems. This would have a serious negative impact on industry sales, but significantly also on housing quality and even health and safety during extreme weather events. In tandem with leveling the playing field, the CEC should provide or support mechanisms to assist low-income homeowners and tenants.

- 19) Provide incentives for early retirement of inefficient older systems in danger of failing.
- 20) Develop or support efforts to encourage homeowners to plan ahead and develop multi-year plans to replace systems that are in danger of failing. This will encourage homeowners to save to facilitate eventual purchases, and also allow them to make purchasing decisions that are not under duress and avail them of good deals and ordering systems with longer leadtimes.
- 21) Provide financing for low- and moderate-income customers.

#### H. REGAIN TRUST WITHIN THE INDUSTRY

I believe that implementing many of these recommendations will require initiating a new process, in order to regain trust on all sides: a “hard reset” is needed. Specifically:

- 22) Include all stakeholders in an equal and substantive way in a process of identifying, vetting and prioritizing alternative elements of the plan, and in implementing the plan.

- 23) Allocate the resources that are needed to enable the range of stakeholders to participate in this process (eg, stipends and/or travel expenses).
- 24) Provide sophisticated facilitation that will encourage all parties to come to the table prepared to compromise, and work towards having industry-wide support for any legislation that is needed.
- 25) This problem will be expensive to solve. Additional resources will be needed for CEC, CSLB, local jurisdictions, contractors, and consumers, among others. Engage the industry in communicating with the legislature on the need to provide the substantial resources required to make these efforts effective. Keep in mind that these solutions are likely to be much more cost effective than many other solutions to climate change mitigation and adaptation.