

**DOCKETED**

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*Comment Received From: David Choo*  
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**David Choo Comments on Equipment Registration and Industry Culture**

*Additional submitted attachment is included below.*

# David Choo

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**August 20, 2018**

To: California Energy Resources Conservation and Development Commission

Re: CalCERTS Comments Regarding Improving Energy Compliance of Residential Air-conditioners and Heat Pumps (SB-1414). Docket # 17-EBP-01

Having attended the CEC SB-1414 workshop, and having read statements and listened to opinions of stakeholders, I felt compelled to submit a simple statement on my observations of the current state of the HVAC industry, and provide input on ways to increase energy efficiency and compliance in the state of California.

As a licensed C20 mechanical contractor, HERS Rater, Air Balancer, and Quality Assurance inspector, I have seen this industry from a few different points of view.

It is glaringly obvious to those who operate at the ground level, that the HVAC industry as a whole is in very poor shape.

The following comments are my own and are not representative of my employer or any agency that I will refer to in this document.

## **Online Permitting**

The first step to achieving compliance has to be the implementation of a unified and simplified statewide online permitting process. The largest hurdle for any HVAC installer when pulling a permit is the amount of time spent at local building departments. The process at some building departments requires spending the better part of a day, moving from customer service window to window, before you can pull a permit.

In some jurisdictions, pulling a permit requires some knowledge of HVAC and local building code. Often this requires taking a more experienced person from the field to have them waste valuable time at the building department getting the permit. This results in real costs that are ultimately passed on to the homeowner.

It is likely that a portion of the small number of permits currently being pulled are not by choice, but rather are pulled because it is required by some financing or rebate programs.

As has been stated by multiple parties, the state of the industry is such that the driving factor in installation is price, and not quality, efficiency, or compliance. As such, a compliant installer can't be competitive against someone that refuses to pull a permit.

*The playing field must be levelled for any meaningful change to occur.*

Having an easily accessible, and extremely simple online process where installers could pull a permit at any time of day, following a simple step by step process, would likely increase permit compliance. Additionally, making that process available to smart phones and tablets would be of benefit.

Improving the permitting process is however an incomplete solution. It may increase compliance with those few installers that have always intended to comply, but it fails to address the majority of the installers (licensed or unlicensed) that have grown accustomed to non-compliance in an industry with little accountability.

## **Serial Number Tracking**

Without the ability to somehow bind the purchase of HVAC equipment, primarily condensers and heat pumps, to a permit, online permitting would see little traffic or use.

*This is the 10,000lb elephant that needs to be tackled.*

Without implementing and enforcing the principle that only a licensed contractor (or a homeowner/builder) may purchase equipment, and that the equipment is tied to a permit, every other idea I've read can't be effective.

The culture in the industry is such that many HVAC contractors are not technicians, but salespeople. Their goal is to sell based on quantity and upgrades without any regard to how well a system is designed, installed, or cared for. There is no longer any craftsmanship involved.

The fundamental thought process in the culture of both installers and homeowners has to be changed. It will require both forced compliance as well as education.

Forced compliance must come first. Unless the playing field is levelled, and all installers are forced to incur the same costs for an installation, it will continue to go back to the bottom line of profitability over quality. That generally means, there is no time or money to pull a permit.

While educating contractors and their technicians and implementing incentive programs are wonderful ideas, they will have no impact on compliance if we can't tackle the fact that permits will not be pulled unless people are forced to do so. Educating before contractors feel any need to learn, will create a net result of education programs that are not attended and contractors that continue non-compliance.

There will likely be a surge of opposition from both manufacturers and agencies who feel they do not directly benefit from serial number registration. Those that can't envision the benefits of this, or those that will likely, for the short term lose profits, will adamantly oppose this. While it may initially seem a burden to many involved in the process, I believe it can eventually change the culture of the HVAC industry where the element of quality will be re-introduced to installations.

I imagine in the not distant future; new tech savvy installers will begin to arise. They will have grown in an industry with a level playing field where value through quality becomes king. New processes for quality installation and maintenance will be developed and the HVAC industry as a whole will go through a positive evolution.

Again, without forced compliance, there will likely be little or no change in the culture of HVAC installation in California.

## **HERS Integration**

The HERS program is already in place and is producing great results. By continuing the requirement of all municipalities for HERS Verification, along with permit compliance, a dramatic impact on our state's resources can be realized. Independent 3rd party inspections are absolutely critical to realizing any energy savings in CA.

Building inspectors are not equipped to verify that an HVAC system can meet the minimum energy requirements set forth by the CEC. Without diagnostic testing, it simple can't be done.

I heard a statement regarding installers self-testing with cloud connected tools. The idea that an installer should be allowed to self-test their own installations, is in direct opposition with what is trying to be achieved. If we could place our faith with installers, the industry would not be in the condition it is in today. Regardless of the tools being "connected" to a registry through wireless means, it does not change the fact that any diagnostic test can easily be gamed.

When the CEC implemented the 3rd party HERS program with providers that have to maintain a quality assurance program whereby raters must meet certain standards, it created a means for integrity to be folded into the industry.

I strongly believe that the HERS program has made a serious impact and is vital to maintaining a minimum quality of installation. Through the program, an effective vehicle to protect homeowners throughout the state has been established.

### **Education**

As many installers that have never pulled a permit, or only pull one permit in a 100, begin to have their systems checked by an independent 3rd party, they will quickly realize they need to seek education if they plan on staying in business as they will continually fail HERS verifications and need to make constant corrections.

This will force installers to seek out many of the programs already in place by the likes of IHACI, NCI, ACCA, etc.

Without the fear of losing profits, an installer has little incentive in seeking out education. Creating an online permitting registry without binding serial numbers to permits, will result in continued non-compliance.

### **It's Not About the Equipment**

There are many installers that sell equipment based on an AHRI certified efficiency rating. The problem is that equipment is improperly installed. If a high end 20 seer condenser/coil installation is only delivering 56% of its rated capacity into a home, a properly installed 14 seer condenser/coil installation that is delivering 90% of its rated capacity easily out performs the expensive 20 seer counterpart.

As of today, the goal for an installer/salesperson, is to upsell to the higher efficiency equipment in order to gain higher profits, without any thought to ducting, realized airflow, or actual output.

Imagine a day when installed equipment can actually deliver on its rated capacity through quality installation, instead of being sold based on a seer rating label.

Again, the only way to change the mentality of HVAC installers from salespeople to that of craftsmen, is to force the change by requiring city inspections and 3rd party HERS verifications.

### **Penalties**

The idea of fines and penalties to contractors is an interesting one. The question that comes to mind is, how will these fines be determined and who will have the power to enforce them. With building departments already understaffed, will there be a sufficient policing force to make an impact?

If equipment can't be purchased without being bound to permit, and we move from a place where compliance has gone from 10% to say 80%, will we have a need to fine contractors?

On the other hand, if serial numbers are not tied to a permit, with an insufficient policing force, regardless of fines, it is likely the majority of installers will simply continue non-compliance. After all, if they're fined \$1000 for the one time they were caught installing without a permit out of 200 systems that year, it just becomes the cost of doing business.

### **Closing Summary**

The key to quality installations must begin with forcing installers to pull a permit for all installations of HVAC equipment. At a very minimum, condensers and heat pump serial numbers should be tied to permits.

The culture is currently such that any other incentive or penalty will not work at creating compliance.

As the level of compliance changes for the better, and more importantly, the culture of the industry changes from the idea of the lowest cost of installation, to the best value of workmanship, a good foundation will have been established. That foundation will pave the way to energy efficiency and the protection of the consumer.

I appreciate the opportunity to provide feedback to the California Energy Commission. I want to express my gratitude to the CEC staff and the commissioner for their willingness to allow stakeholder participation.

Sincerely,

David Choo  
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CalCERTS HERS Rater  
NCI Commercial & Residential Air Balancer