

**DOCKETED**

<b>Docket Number:</b>	17-EBP-01
<b>Project Title:</b>	Improving Energy Compliance of Central Air-Conditioning and Heat Pump Systems
<b>TN #:</b>	224547
<b>Document Title:</b>	CSE Comments on Improving Energy Compliance of Central Air Conditioning and Heat Pump Systems
<b>Description:</b>	N/A
<b>Filer:</b>	System
<b>Organization:</b>	Sephra Ninow/CSE
<b>Submitter Role:</b>	Public
<b>Submission Date:</b>	8/20/2018 4:27:55 PM
<b>Docketed Date:</b>	8/21/2018

*Comment Received From: Sephra Ninow*  
*Submitted On: 8/20/2018*  
*Docket Number: 17-EBP-01*

**CSE Comments on Improving Energy Compliance of Central Air  
Conditioning and Heat Pump Systems**

*Additional submitted attachment is included below.*



9325 Sky Park Court  
Suite 100  
San Diego, CA 92123

*main* 858.244.1177  
*fax* 858.244.1178  
[www.energycenter.org](http://www.energycenter.org)

August 20, 2018

California Energy Commission  
Docket Unit, MS-4  
Re: Docket No. 17-EBP-01  
1516 Ninth Street  
Sacramento, CA 95814-5512

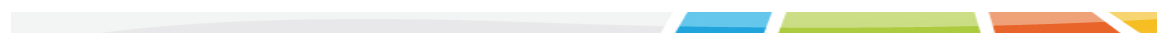
**Re: Docket No. 17-EBP-01 – Improving Energy Compliance of Central Air Conditioning and Heat Pump Systems**

**I. Introduction & Summary**

The Center for Sustainable Energy (CSE) appreciates the opportunity to provide comments to support development of the draft report on improving energy compliance of central air conditioning and heat pump systems. CSE also applauds the California Energy Commission's (Energy Commission) inclusive stakeholder engagement process around development of policies that stand to transform the heating, ventilation, and air conditioning (HVAC) market.

Senate Bill (SB) 1414 (Stats. 2016, Ch. 678) provides an opportunity to directly address the glaring compliance issue experienced by the HVAC marketplace. Simultaneously, it provides an opportunity to significantly increase the performance of installed HVAC systems and achieve approximately 130 megawatts (MW) of annual peak demand energy savings.

Given the large number of market actors and stakeholders involved in the California HVAC marketplace, the solutions enabled by SB 1414 must be both comprehensive and feasible given market constraints. Any single solution may address one compliance or performance issue but fail to address several others, failing to close the compliance gap and achieve desired energy savings. CSE recognizes that while the varying solutions offered by stakeholders entail varying budgets and administrative burdens, several solutions that focus on specific transactions within the marketplace offer promise. CSE supports three specific solutions: (1) equipment tracking; (2) streamlined compliance process; and (3) workforce education and training. CSE also strongly supports the continued use of incentives and leveraging the statewide HVAC program to increase exposure and to introduce additional benefits, such as demand response and a focus on disadvantaged communities.



## **II. High performance HVAC installations**

The ultimate benefit associated with compliant HVAC systems is reduced energy consumption. With only ten percent of residential HVAC units installed *with* a permit, visibility into performance is severely limited, presenting significant potential for unnecessary energy consumption and health and safety concerns on 90 percent of installed systems. However, even compliant HVAC units show room for improvement in performance.<sup>1</sup> As such, tracking HVAC units through the supply chain and making sure permits are pulled are not enough to ensure the desired energy savings and achieve the State’s ambitious goals established by SB 350 and the Existing Buildings Energy Efficiency Action Plan. Any solution set must include education and training for all market-actors that play a role in the installation and verification of HVAC systems to ensure they are using best practices to increase performance and energy savings.

## **III. Multi-pronged solutions approach**

### **A. Equipment tracking system**

CSE supports as a first priority the establishment of an equipment tracking system that allows HVAC units to be tracked from distributor to contractor to point of installation. Equipment tracking is the only solution that will provide visibility into the “underground economy” of systems that are installed without permits. The usefulness of alternative proposed solutions (i.e., streamlined compliance, workforce education and training, etc.) increases significantly only if they can be applied to the 90 percent of systems installed without permits. The ability to identify illegally installed systems introduces the opportunity to assess fees that could help cover the cost of enforcement while also introducing an opportunity for workforce education and training.

Whether the tracking system relies on serial numbers or some other mechanism (e.g., CF-1R number, etc.), its establishment should be based on a thorough exploration into the most straightforward and simple tracking process. Any attempt to establish a tracking system must include meaningful engagement with equipment distributors, as the tracking should start at the distributor-contractor sales process. Online equipment sales should also be tracked, and, to the extent possible, online retailers should be engaged to explore their participation in the tracking system or, alternatively, limiting or prohibiting online sales in California.

Enforcement of the tracking system should also be explored thoroughly to identify the best enforcement party. Based on knowledge of their constrained resources, CSE warns against reliance on local building departments or the Contractors State License Board

---

<sup>1</sup>[http://www.calmac.org/publications/FINAL\\_REPORT\\_PGE\\_HVAC\\_Permitting\\_for\\_IOU\\_Programs\\_Study\\_v201410\\_10.pdf](http://www.calmac.org/publications/FINAL_REPORT_PGE_HVAC_Permitting_for_IOU_Programs_Study_v201410_10.pdf)

(CSLB) as the enforcement end of any tracking system, unless the Energy Commission also provides resources to enable their role as enforcers. The ability of building department or CSLB staff to review equipment lists and cross-check them against permit lists is limited at best. Similarly, their ability to enforce compliance on non-compliant installers (e.g., force pulling of permit, assess fees, coordinate education and training, etc.) is likely non-existent without additional resources.

## **B. Streamlined compliance process**

CSE supports establishment of streamlined compliance processes for HVAC systems, particularly processes that leverage web-based technologies. Today's digital solutions offer significant opportunities for streamlining, and the HVAC industry is ready to advance into the digital age.

### **1. Online permitting**

CSE supports the development of an online permitting system that allows contractors to secure permits for residential HVAC projects from the comfort of their offices, or homeowners to secure permits from the comfort of their homes. Simplifying the permitting process will drastically reduce the burden placed on market actors as they are forced into compliance by an equipment tracking system. Currently, the time and costs associated with pulling permits is onerous enough to drive a large majority of projects underground. Enabling permits to be pulled online, ideally via a mobile app, would bring the compliance process into the 21<sup>st</sup> century and also reduce greenhouse gas (GHG) emissions associated with visits to a physical permit desk.

Development of a web-based permit system should include exploration into the benefits of the various scales of implementation. For example, establishing a system that is statewide would present the most streamlined and consistent process for the end-user (i.e., contractor or homeowner) but introduces challenges for local building departments, as they would need to communicate with and access data from a system that is operated by a statewide administrator. Conversely, online systems individually implemented by hundreds of local governments may be preferred by building departments, as this approach may allow for more control at the local level. It would not, however, result in the most consistent and simple process for end-users. Each pathway also has different implications for bearing the costs of implementation. CSE again warns against any pathway that places the burden of cost on the local governments, as their constrained resources would prevent the solution from being viable or achievable without significant support.

CSE previously developed a report for the Energy Commission recommending the development of a statewide online permitting system. The report summarized several different approaches to online permitting being implemented around the country, from the state of Oregon to California's Imperial Valley. The report outlined rough system specifications and cost estimates to give the Energy Commission insight into the lift necessary to establish a statewide online system. While the report references the GreenNet platform as a potential viable system, CSE wishes to clarify for the record that the report officially recommended implementation of *a platform* with the specifications described in the report, and not any existing system currently operating in the market. Furthermore, CSE made several recommendations for additional research and consideration, including investigation into pursuing a competitive bid for software providers and potentially leveraging the Home Energy Rating Systems (HERS) to support development of online permitting. CSE stands by this report as it presents viable examples and important considerations for the Energy Commission, should it pursue a statewide permitting solution.

## 2. Virtual and digital verification

CSE further supports leveraging digital solutions to improve the process for verifying system installation and performance. Several solutions exist and should be explored for statewide implementation, including virtual inspections by local building inspectors and systems that enable remote verification of system performance and/or continuous commissioning. Any process that eliminates a trip to the job site by a contractor and/or a building inspector will reduce time and costs associated with compliance and remove barriers to achieving energy savings. While these solutions may be a lower priority for the Energy Commission, they are an important piece of the compliance puzzle and should be considered.

## C. Workforce education and training

CSE strongly recommends leveraging the enforcement of an equipment tracking system to introduce workforce education and training. Specifically, participation in education and training should be required for non-compliant actors, perhaps as a "first strike" consequence for non-compliance, and perhaps prior to assessing fines. Education and training should address the compliance process [permitting (ideally instructing on how to use an online system), HERS requirements, etc.], installation best practices, energy efficiency and customer sales basics (i.e., how to sell energy efficiency to your customers and increase your revenue), and information on ratepayer-funded rebates and incentives, among other applicable topics.

#### **IV. Leveraging ratepayer-funded energy efficiency programs**

CSE recommends leveraging the pending design and implementation of a statewide HVAC program under the California Public Utilities Commission (CPUC) Energy Efficiency Rolling Portfolio to support compliance. In addition to requiring rebated projects to pull permits, the Energy Commission and the CPUC [and San Diego Gas & Electric Company (SDGE), as statewide administrator] should consider including program elements that support implementation of the compliance mechanisms decided upon by the Energy Commission. For example, if the Energy Commission decides to implement a statewide online permitting system, market-actors (distributors, contractors, home owners) participating in the statewide HVAC programs could be leveraged to pilot the system. Similarly, participating contractors and distributors could be required to employ virtual verification tools, should the Energy Commission decide to prioritize such elements in its guidance document.

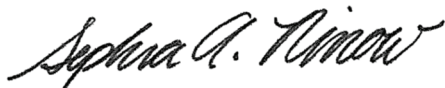
#### **V. Achieving consensus**

Regardless of the specific compliance mechanisms eventually recommended by the Energy Commission in its Compliance Plan, it will be critical to get buy-in for specific implementation steps from key market actors. The Energy Commission should plan for continued engagement with key stakeholders to flesh out specific implementation steps to ensure success. Once the Energy Commission uses its authority to establish the path forward, it will be important to bring key stakeholders together to pave that path together.

#### **VI. Conclusion**

CSE appreciates the opportunity to comment on these important issues.

Sincerely,



Sephra A. Ninow, J.D.  
Associate Director, Regulatory Affairs  
Center for Sustainable Energy®