

**DOCKETED**

<b>Docket Number:</b>	24-BSTD-01
<b>Project Title:</b>	2025 Energy Code Rulemaking
<b>TN #:</b>	255501
<b>Document Title:</b>	T-24 Proposed Heat Pump Baseline Changes (140,4(a)3)
<b>Description:</b>	N/A
<b>Filer:</b>	System
<b>Organization:</b>	Rae Korsboe
<b>Submitter Role:</b>	Public
<b>Submission Date:</b>	4/4/2024 11:16:05 AM
<b>Docketed Date:</b>	4/4/2024

*Comment Received From: Rae Korsboe*  
*Submitted On: 4/4/2024*  
*Docket Number: 24-BSTD-01*

## **T-24 Proposed Heat Pump Baseline Changes (140,4(a)3)**

I would like to respectfully request CEC remove the proposed heat pump baselines in 140.4(a)3. The restrictions on design do not have enough justification and supportive evidence proving it will be a positive change overall. There is no mention of the negative impacts it could have, which are just as important to analyze. The cost analysis needs to be examined and compared to other studies and sources of information for accuracy and consistency among projects.

These changes have significant impacts on schools and offices that could change their operation and how they manage the building. This may include additional controls operations or having someone trained/capable of maintaining the building. VRF will entail lengths of refrigerant piping being run through the building that may not have been required before. The size limits of VRF and FC systems will require larger projects to have a substantial number of VRFs and FCs through the building. Not all buildings can have all that equipment in the plenum or on the roof. This introduces space restrictions that may not occur with other systems.

The proposed restrictions limit the design of projects in ways that shuts down further development of solutions for these applications. With such limiting rules, unique and new solutions to future design will be impacted. Less problem-based solutions will be installed, and this could leave building owners with a less-than-ideal solution to their problems. The additional cost and intricacy of energy/performance modeling will deter many clients from finding other solutions.

The allowable solutions provided are often not the cheapest solution. VRF is expensive and often requires more engineering than other solutions. The breakdown of costs by the CEC does not include enough data. One of the references used was The Red Car Analytics (2019). The only Red Car Analytics analysis from 2019 still available on the RCA site is Economic Analysis of Scenarios with DOAS. In this document, they find that first-cost is lower for RTUs than VRF systems. Energy savings are minimal in comparison to the initial cost (especially for larger buildings), and building owners may not be able to afford the larger upfront cost.

Some of the values used in the proposed changes do not seem entirely realistic. The cost of \$0.50/sf for a VRF sounds unreasonably low. The values and costs in the analysis need to be further evaluated. With the report being recently posted, the community doesn't have enough time to do their own cost analysis or see if it is viable for their applications. These solutions are not capable of taking all factors into account for every job. For example, in the coastal areas, a DOAS would not be as beneficial as an economizer. A DOAS would reduce the amount of outdoor air provided to occupied areas. This adds extra equipment and complexity when an economizer

would work better.

The timeline of when supporting documents were submitted does not allow enough time for public review, especially on such a substantial change to office and school design. The changes proposed in the heat pump baseline are limiting and need further analyses for cost, benefit, and the potential negative impacts of implementing such a significant change.

Thank you in advance for your time and attention on this matter.