

DOCKETED

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*Comment Received From: Laurens Vaneveld
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2025 Energy Code Changes

Additional submitted attachment is included below.

Laurens Vaneveld

From: Laurens Vaneveld
Sent: Tuesday, April 16, 2024 3:43 PM
To: docket@energy.ca.gov
Subject: Proposed changes to 2025 Energy Code - docket number 24-BTSD-01

To whom it may concern:

I recently found there is a proposal in place to change the language of the California Energy Code for the prescriptive system requirements for offices and schools²

As I understand it the proposed prescriptive requirements would be for VRF plus a DOAS (dedicated outside air system), or a 4-pipe fan coil system plus DOAS with air to water heat pumps providing CHW and HHW for the units for offices, or for heating only systems². The third option appears to rule out conventional rooftop package heat pump units with economizers which again pushes into a much more expensive customized system with the heat recovery²

The prescriptive requirement for Schools would be 4-pipe fan coil units plus a DOAS system²

We have found through extensive experience designing, installing, and servicing systems for commercial buildings that these proposed systems will typically be much more expensive and often less efficient than some other options². In our experience VRF systems, can be quite problematic with respect to reliability and refrigerant leaks². With these systems currently in a state of refrigerant transition this is an even greater problem since now a refrigerant leak can result in leaking flammable refrigerant directly into the space². The likelihood of leaks increases greatly when you have refrigerant piping extending all through the building². Refrigerant circuits in package units is much more limited and factory built². When leaks do occur, they are

Four pipe fan coil systems will also cost significantly more than traditional VAV reheat systems². They also now double the amount of piping and components that can leak water inside the building². While serious water leaks are not a very common occurrence, even small leaks can create significant damage inside a building and also create health hazards through mold growth².

None of these proposed prescriptively allowed systems allow for the use of an economizer which in most of the state would have huge energy savings². The economizers also provide other benefits in terms of indoor air quality (IAQ) and health for occupants inside the building².

I would strongly ask that this proposal be abandoned and instead a review of other system types should be done that can provide better performance from an energy standpoint overall and maintain the benefits of an outdoor air economizer². A VAVRH system with an OSA economizer provides a good balance of performance, efficiency, and cost effectiveness in a system that is well understood, reliable, and serviceable². The next code cycle would be a time to provide a better option to these current proposed DOAS systems².

We at Western Allied have endeavored to provide better, more efficient, reliable, and lower first cost systems for our client for many years². With the rapid change in progress now moving away fossil fuels, we are constantly innovating and working to optimize the performance and cost effectiveness of our system designs².

I would suggest that a clearly better option than these proposed systems would be a DFDDVAV (Dual Fan Dual Duct VAV) system². We have designed several DDVAV systems recently that are very efficient systems when economizers, variable speed fans, and good turndown on cooling are provided². I firmly believe that a DDVAV

system will be more efficient than the VRF or 4PFC plus DOAS systems proposed in this measure. The exclusion of economizer systems from these options is a very poor decision. We reset DSPsp down to a typical minimum of 0.1" w.g. and typically see systems operating at that level for many hours of operation on 100% OSA for cooling. We can also then lockout cooling refrigeration below about 60 F and we can lock out all heating above about 70 F. We know that this system can be installed at a lower cost than VRF on buildings as small as 20,000 sqft or less. When zones are somewhat bigger particularly on smaller buildings SZVAV rooftop package heat pump units are a far more cost-effective system than VRF or 4PFC. Similarly for some applications a VVT system with packaged rooftop heat pumps can also be a very good option at a much lower cost than the VRF or 4PFC systems proposed.



Thank You,

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Ask me about the Fight for Air Climb on March 2 or join our team – Donna’s WAMers at this link.

https://actionfund.org/site/TR/Climb/ALACA_California?team_id=182267&pg=team&fr_id=25878