

**DOCKETED**

<b>Docket Number:</b>	22-BSTD-01
<b>Project Title:</b>	2025 Energy Code Pre-Rulemaking
<b>TN #:</b>	252290
<b>Document Title:</b>	Natural Resources Defense Council Comments - on NR HVAC Efficiency Aug 29th Workshop
<b>Description:</b>	N/A
<b>Filer:</b>	System
<b>Organization:</b>	Natural Resources Defense Council
<b>Submitter Role:</b>	Public
<b>Submission Date:</b>	9/15/2023 4:33:02 PM
<b>Docketed Date:</b>	9/15/2023

*Comment Received From: Natural Resources Defense Council  
Submitted On: 9/15/2023  
Docket Number: 22-BSTD-01*

**NRDC Comments on NR HVAC Efficiency Aug 29th Workshop**

*Additional submitted attachment is included below.*

September 15, 2023

California Energy Commission  
Re: Docket No. 22-BSTD-01  
715 P Street  
Sacramento, CA 95814  
docket@energy.ca.gov

Dear Commissioners and CEC Staff,

The Natural Resources Defense Council (NRDC) submits the following comments on behalf of its more than 450,000 members and activists in California who are advocating for affordable and equitable decarbonization and clean air policies to help mitigate the climate crisis and advance a sustainable economy. These comments are in response to the California Energy Commission's (CEC) August 29, 2023 workshop for the 2025 Title 24 proposed requirements for nonresidential HVAC efficiency.

NRDC appreciates the CEC's work to both improve nonresidential HVAC efficiency and support the decarbonization of nonresidential space heating, both through its work on updated baselines and the specific measures proposed in the August 29th workshop. As we have commented previously, it is very important to maintain multiple prescriptive pathways for all-electric nonresidential space heating, since CBECC modeling options for performance path compliance are limited and do not model all system types in a way that reflects their real-world energy performance. We offer the following comments on the measures proposed in the workshop:

**NRDC strongly supports the proposal to mandatorily limit zone design temperatures to a heating water supply temperature of 130 degrees F.** These lower supply temperatures are needed for the implementation of air-to-water heat pumps, which typically supply hot water at 140 degrees F or below. Reducing hot water supply temperatures in heating hot water systems will save energy in all buildings regardless of heating system fuel by reducing piping system distribution losses and improving the operational efficiency of heating equipment. In addition to these immediate energy savings, the proposed requirement will allow for any buildings designed with gas today to more easily retrofit to air-to-water heat pumps in the future, without having to invest in piping and zone level upgrades. We strongly support the requirement and urge the CEC to include it in the Express Terms.

**NRDC supports the proposed requirements for mechanical heat recovery for both gas and electric systems.** NRDC supports the proposed requirement for mechanical heat recovery at sites

with significant simultaneous cooling and heating loads. For sites where these simultaneous loads exist, condenser heat recovery is generally a cost-effective, simple solution to meet a portion of the building's heating load. It is critical that the proposed heat recovery requirements apply regardless of the building's heating system fuel type. While this requirement is cost-effective, if it were to only apply to all-electric buildings, this would be an added cost that would potentially disincentivize all-electric construction. We were pleased to hear staff say during the workshop that the intent is for this measure to apply to all buildings with large simultaneous loads, regardless of heating system fuel type.

**NRDC recommends that the CEC continue to analyze the variable air volume (VAV) plus electric resistance reheat path.** The CEC indicated in the workshop that this measure is not moving forward due to the negative long-term system cost (LSC) savings shown in the Final CASE Report, despite source energy savings and reduced first costs. Our understanding is that there were several likely overly conservative assumptions in the CASE analysis that led to these negative LSC savings. We recommend that moving forward, the CEC update this analysis to more accurately represent VAV plus electric resistance reheat systems and to move forward with this measure if the LSC savings become positive. While we understand there may not be time or budget to do this in advance of the Express Terms, we urge the CEC to consider analyzing and offering an exception under Section 10-109 if positive or neutral LSC results can be found, given the large source energy savings and potential emissions impacts from this measure. More broadly, as submitted previously and referenced above, it is important to have prescriptive pathways for all electric systems, given the limitations of CBECC and the general burdens of pursuing the performance path. We urge the CEC to continue analyzing this measure and include a prescriptive path for VAV systems with electric reheat in 2025.

We appreciate the opportunity to submit these comments and would welcome further discussion.

Sincerely,

Merrian Borgeson  
California Director, Climate & Clean Energy  
Natural Resources Defense Council (NRDC)

Meg Waltner  
Project Manager  
Energy 350, on behalf of NRDC