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Vertiv Response to TN235021 - Opposition to Increase in Economizer Temperature for Computer Rooms

Additional submitted attachment is included below.



November 11, 2020
California Energy Commission
1516 Ninth Street, MS 34
Sacramento, CA 95814

Re: Docket No. 19-BTSD-03 – 2022 Energy Code Pre-Rulemaking; *Nonresidential Computer Roof Efficiency Code Change Recommendations.*

Vertiv Group Corporation submits these comments in response to Comment # 235021, which were submitted to the Commission on October 5, 2020.

Comment #235021 supports the increased temperature threshold for economizers and purports to provide performance data to prove that the commenter's own technology can meet the proposed increased economizer temperature threshold. However, the data provided in Comment #235021 is insufficient to demonstrate that the technology identified in #235021 can in fact meet the increased economizer temperature threshold in California's 16 Climate Zones, and Comment #235021 actually demonstrates the inherent drawbacks of requiring an increased temperature threshold for refrigerant economizers.

As to the first point, Comment #235021 provides only summary data that its product can meet the increased economizer temperature for three cities within the state of California, and it provides more detailed information only regarding its product's operation in one city, San Jose, where the manufacturer states that an "evaporative assist option" is required to meet the proposed temperature. This cursory analysis falls far short of what is required to substantiate the product's performance, and it does not show that Comment #235021's refrigerant economizer can meet the proposed economizer temperature thresholds within all 16 of California climate zones. It is also unclear whether the data submitted in Comment #235021 is based on the operation of Comment #235021's product at an actual data center in California. The Commission should not increase the economizer temperature threshold for the entirety of the refrigerant economizer industry on the basis of such a sparse analysis of one product.

It is also worth noting that Comment #235021 meets the increased temperature threshold by either installing an "evaporative assist option" (as described in Comment #235021) or through adding additional units (as it did in its San Jose example). The evaporative assist option is highly water inefficient and also expensive. According to Comment #235021, the evaporative assist option requires data centers to increase the water usage by between 1,380,000 and 2,621,000 gallons of water annually for the addition of this option to a 2MW data center. In addition to the increased water usage, customers will have to buy additional equipment and install a water system to support the "evaporative assist option," which the customers will then have to pay to operate and maintain for the life of their system in addition to the cost of the economizer itself. The Commission should not limit customers to installing a refrigerant economizer with evaporative cooling when such systems do not yet have an established track record of reliability, let alone a record sufficient to support the additional costs and water usage.



In short, Vertiv objects to increasing the temperature threshold, particularly for refrigerant economizers. The data in Comment #235021 does not provide a sufficient basis for imposing significantly heightened temperature thresholds, which will in turn make many economizers cost prohibitive in California.