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Vertiv Response to TN235095 - Disagree with Elimination of Economizer Types 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 Room Efficiency Code Change Recommendations.*

Vertiv Group Corporation submits these comments in response to Comment # 235095, which were submitted to the Commission on October 6, 2020.

First, Comment #235095 identifies three types of economizers as being incapable of meeting the temperature thresholds proposed in the CASE Report on Nonresidential Computer Room Efficiency (“CASE Report”): (i) Packaged Indirect Air Economizer; (ii) Integrated Pumped Refrigerant Economizer; and (iii) Water-Cooled DX Computer Room Air Conditioner (CRAC) Economizer. Comment #235095 does not provide any technical data to support its position of that these economizers are incapable of meeting the CASE temperature thresholds.

In reality, all economizers can, as a technical matter, meet the proposed elevated temperature thresholds by either using evaporatively-cooled elements or installing additional units to meet the cooling capacity requirement during economizer mode. Comment #235095 provides no data to the contrary. And the only data in the record, provided by Vertiv, is that Vertiv’s integrated pumped refrigerant economizer *can meet* the existing temperature thresholds in the Energy Code.

However, Comment #235095 is correct that, *as a practical matter*, the increased temperature thresholds, particularly for refrigerant economizers, may result in many, if not most, refrigerant economizers being excluded from the market due to cost. The cost of installing evaporative-cooled elements or additional units will make economizers cost prohibitive for most customers and may require companies to redesign their data centers to accommodate economizers with evaporative cooling. For instance, installing evaporatively-cooled elements will require data centers to install a water system and water treatment systems, and will thus result in significantly increased water usage—noteworthy in light of California repeatedly placing restrictions on water usage due to draught—as well as require data centers to construct larger facilities in order to add the additional units for use during economizer mode in order to accommodate this additional equipment and to provide additional power connections to each of the high voltage units. The cost of undertaking such expensive projects could significantly harm the market for refrigerant economizers.

Vertiv objects both to (i) Comment #235095’s proposal to strike certain types of economizers from the Energy Code and (ii) the increased temperature thresholds for refrigerant economizers. The Energy Code should be technology neutral. Comment #235095’s proposal to strike all but the manufacturer’s own refrigerant economizer from the Energy Code is certainly not technology neutral and should be rejected. Furthermore, the current Energy Code recognizes the



technological characteristics of different types of economizers by establishing a higher temperature threshold for some types of economizers—such as air-side economizers—while setting a lower temperature threshold for water-side and refrigerant economizers. The Commission should maintain that approach to allow data centers the flexibility of adopting the technology with the operational characteristics and cost which best reflects their needs.