

DOCKETED

Docket Number:	20-FDAS-01
Project Title:	Flexible Demand Appliance Standards
TN #:	236581
Document Title:	Carrier Comment_Flexible Demand Standard_20-FDAS-01_Final
Description:	N/A
Filer:	Chester Hong
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	2/3/2021 9:05:06 AM
Docketed Date:	2/3/2021



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February 3, 2021

Mr. J. Andrew McAllister, Ph.D.
Commissioner
California Energy Commission
Docket Unit, MS-4
1516 Ninth Street
Sacramento, CA 95814-5512

Submission: Emailed to docket@energy.ca.gov

RE: Comments in Response to Introduction to Flexible Demand Appliance Standards [Docket Number 20-FDAS-01]

Dear Commissioner McAllister,

Carrier provides fire safety, security, building automation, heating, ventilation, air conditioning and refrigeration systems and services to promote integrated, high performance buildings that are safer, smarter and sustainable. Carrier is the founder of the modern HVAC industry and operates across the globe. Our range of products includes unitary residential and commercial products, including ducted and ductless, transport refrigeration products, chillers, and HVAC building services.

Carrier supports the framework set in SB 49 for CEC to create flexible demand response standards (FDRS) that are technically feasible, cost effective, secure to cyber-attack, reliable, requires consumer consent, and is easy for consumer to use. As such, Carrier submits the following comments to help CEC make decisions that achieves those goals.

Multiple compliance paths will be required to address the complexity of HVAC systems in the market

There are many different equipment combinations that can be installed by a contractor to provide a homeowner a complete HVAC system. This includes systems with a thermostat, indoor unit, and outdoor unit that were fully designed by one manufacturer. It can also include systems with a thermostat designed by one manufacturer, an indoor unit from a second manufacturer, and an outdoor unit from a third manufacturer. In this case, the three manufacturers typically have not coordinated with one another on the system design, production, or marketing of the equipment.



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In addition, HVAC systems can function differently. Lower cost equipment typically is single stage operation with one capacity while higher cost equipment is fully variable operation delivering a capacity range. Carrier suggest CEC work closely with industry to define appropriate standards to address the variations in the market. An overly prescriptive standard could exclude products from being able to be sold and therefore limit consumer choice.

AHRI 1380 should be adopted for multi-stage equipment.

AHRI 1380 is a demand response (DR) standard for two stage and variable speed HVAC equipment less than 65,000 Btu/hr. This standard supports both Open ADR and CTA-2045 communication protocols. Two stage and variable speed HVAC equipment are ideal for FDRS programs, and this standard strikes the right balance between prescribing requirements and allowing for innovation in optimizing control. Carrier recommends CEC adopt AHRI 1380 for two stage and variable speed HVAC systems.

While AHRI 1380 does not cover single stage HVAC products, Carrier recommends CEC consider including applicable portions of AHRI 1380 to a single stage standard. One example would be the use of Open ADR and CTA-2045 as communication protocols.

FDRS should not be a mandatory feature on HVAC products to keep from negatively impacting consumers.

To keep HVAC products affordable and ensure features provide value to consumers, FDRS should not be mandated on all products. The incremental cost for this functionality is significant. Product best designed to shift and shed electrical load while maintaining comfort is two stage and variable speed product. These products have additional electrical components that single stage electromechanical products do not have. Making this a requirement would be especially impactful to low income consumers who struggle to afford the cost of current HVAC equipment. Even if the FDRS scope is limited to only require the addition of a connected thermostat, this will still harm low income consumers. The cost of a thermostat with the capability to connect to the internet is an additional cost. Carrier recommends CEC make flexible demand response standards only required for products that are marketed with this capability. This will give consumers choice while not requiring the customers who do not want this feature to be burden with the cost.

Carrier requests CEC to choose a timeline that is reasonable for stakeholders to achieve.

Carrier is concerned that one year between the adoption to the effective date of the standard is not feasible to meet. Particularly considering product is being redesigned for the 2023 federal minimum efficiency standard increase and upcoming refrigerant regulations. Carrier requests



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industry be given three years to comply with the standard. Adopting AHRI 1380 does enable faster compliance for two stage and variable speed products and is an additional benefit of adopting this standard.

Conclusion

Carrier appreciates the opportunity to submit these comments for consideration and looks forward to working with staff to define standards that benefit California consumers, positively impacts climate change, and helps improve the robustness of the electrical grid. Carrier's answers to some of the specific questions in the staff paper were provided to AHRI to be summarized in AHRI's response. For additional information and discussion, please feel free to reach out to me.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "Jason Thomas".

Jason Thomas

Director, Regulatory Affairs

Carrier