

## Regulatory Advisory

October 31, 2018

### BACKUP BATTERY CHARGER SYSTEMS

#### I. Background

The California Appliance Efficiency Regulations (Title 20, California Code of Regulations (CCR), Sections 1601 to 1609) contain definitions, test methods, energy efficiency standards, certification requirements, and marking requirements for backup battery charger systems.

Title 20 CCR Section 1602(w) contains the following definitions:

“Battery backup” or “uninterruptible power supply charger (UPS)” means a small battery charger system that is voltage and frequency dependent (VFD) and designed to provide power to an end use product in the event of a power outage, and includes a UPS as defined in IEC 62040-3 ed.2.0 (March 2011). The output of the VFD UPS is dependent on changes in AC input voltage and frequency and is not intended to provide additional corrective functions, such as those relating to the use of tapped transformers.

“Battery maintenance mode (maintenance mode)” means the mode of operation when the battery charger system is connected to the main electricity supply and the battery is fully charged, but is still connected to the charger.

Title 20 CCR Section 1605.3(w)(4) establishes the energy efficiency standard for battery backups and uninterruptible power supply chargers (“backup battery charger systems”). It requires that electricity consumption in maintenance mode be no greater than  $0.8 + 0.0021 \times E_b$  watts where  $E_b$  is the battery capacity in watt-hours.

Title 20 CCR section 1604(w) provides that backup battery charger systems must be tested in accordance with the method in 10 C.F.R. Section 430.23(aa) (Appendix Y to Subpart B of part 430) (January 1, 2016) (“test method”).

#### II. Affected Backup Battery Charger Systems

It has come to the California Energy Commission’s attention that some backup battery charger systems cannot be tested in accordance with the test method. This is because they are contained within larger products and neither the backup battery charger systems’ electricity consumption, nor their functions and features related to battery charging, can be separated from the larger products that contain them. In these cases, design approaches to allow separate measurements of the backup battery charger systems’ energy consumption (such as employing switches to isolate the battery

charger systems for testing purposes) are not possible. In recognition of this, Energy Commission staff will not refer such products to the Commission's Office of Compliance Assistance and Enforcement.

### **For More Information**

To obtain a copy of the California Appliance Efficiency Regulations or other related compliance assistance documents, visit the Appliance Efficiency Program website at <http://www.energy.ca.gov/appliances>. Additional questions may be addressed by calling the Appliances Title 20 Compliance Assistance Call Center, toll free inside California at (888) 838-1467, or outside California at (916) 651-7100, or by emailing [appliances@energy.ca.gov](mailto:appliances@energy.ca.gov).