

U.S. Department Of Energy and California Battery Charger Regulations: Scope and Changes

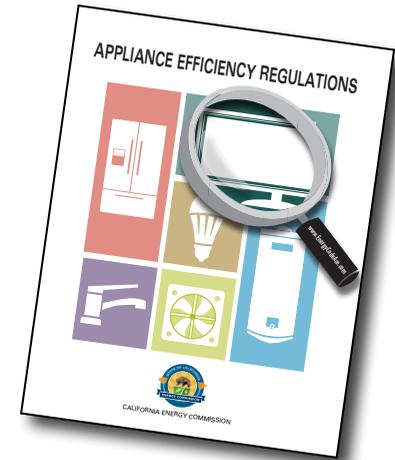
Previously, small and large battery charger systems manufactured on or before June 13, 2018 had to comply with regulations found in Sections 1601 through 1609 of California's Appliance Efficiency Regulations (Title 20) in order to be sold or offered for sale in California. According to the Title 20 definitions in Section 1602, a small battery charger system is a battery charger system with a rated input power of 2 kW or less, and includes golf cart battery charger systems regardless of the input power. Large battery charger systems are battery charger systems with rated power inputs of more than 2 kW.

What's Changed

In 2016, the U.S. Department of Energy (DOE) adopted standards for the majority of consumer battery chargers in the United States.

Per these standards, some battery chargers previously regulated by California now fall within the definition of a federally regulated battery charger ("a device that charges batteries for consumer products, including battery chargers embedded in other consumer products.") These battery chargers are no longer required to comply with California's Title 20 state-regulated product standards, but need to meet the Title 20 federally regulated product standards as well as U.S. DOE standards. Title 20 federally regulated products must also meet the certification and marking requirements in Title 20. Federally regulated battery chargers power consumer products such as:

- Cellular and cordless phones
- Cordless power tools and car battery chargers
- Battery-powered children's toys
- Electric toothbrushes and shavers (wet environment, inductive connection)
- Tablets and laptops
- Cameras, portable music players, smart watches and headphones



Consumer vs. Non-consumer Products

The Energy Policy and Conservation Act (EPCA) defines a **consumer product** as any article of a type that consumes or is designed to consume energy and water, and which, to any significant extent, is distributed in commerce for personal use or consumption by individuals without regard to whether such article of such type is in fact distributed in commerce for personal use or consumption by an individual.

(See 42 U.S.C. 6291(1).)

A **non-consumer product** is one that does NOT meet the federal definition of "consumer product" as described in 42 U.S.C. 6291(1).

Manufacturers of battery chargers are advised to use these definitions in conjunction with the battery charger definition to determine whether a given device is subject to U.S. DOE regulations.

Battery Charger or Battery Charger System?

While both terms refer to the same device, "battery charger" and "battery charger system" should be used in different instances.

- U.S. DOE standards use the term "battery charger," and it should be used when describing federally regulated products
- Title 20 standards use the term "battery charger system," and it should be used when describing California state-regulated products

Products Not in Scope of Federal Standards

Some consumer battery charger systems are excluded from the U.S. DOE scope, and continue to be regulated if they fall within the Title 20 state-regulated scope. Battery charger systems that do not have federal standards include:

- Consumer battery chargers that do not fit within the categories of [Table I-1 of the DOE Final Rule for Energy Conservation Standards for Battery Chargers](#)
- Battery backup and [uninterruptible power supplies](#) (U.S. DOE has not yet published the final rule for UPS standards)
- [Inductively-charged batteries with capacities greater than 5 Wh](#)
- [Dry environment inductive chargers](#)

California continues to regulate the efficiency of non-consumer battery charger products such as forklifts, barcode scanners and emergency lighting. See [Table X-W, Battery Charger Systems Data Submittal Requirements](#) for more information.

Examples of battery charger products excluded from the Title 20 scope are approved medical devices and those used to charge batteries in illuminated exit signs. See [Section 1601\(w\)](#) for a list of excluded products.

Why?

The battery charger regulations adopted by the U.S. DOE in June 2016, have similar stringencies to the standards previously put in place by California and Oregon. Since the U.S. DOE estimated that 95% of the U.S. market already meets these earlier California standards, the new federal regulations will ultimately standardize the market nationwide. According to the [2015 U.S. DOE proposed rule](#), there are an estimated 500 million new battery charger products shipped annually. These standards are projected to save 0.17 quads and 10.8 million metric tons CO₂ emissions through 2047. Beyond environmental benefits, the addition of the federal standards will save consumers \$0.6 billion to \$1.2 billion annually on their energy bills.



Battery chargers for cordless power tools are now federally regulated.

Relevant Code Sections

California Appliance Efficiency Regulations, Title 20

- [1601 \(w\)](#) - Scope
- [1602 \(w\)](#) – Definitions
- [1605.1\(w\)](#) – Federal and State Standards for Federally Regulated Appliances
- [1605.2\(w\)](#) – State Standards for Federally Regulated Appliances
- [1605.3\(w\)](#) – State Standards for Non-Federally Regulated Appliances
- [1606](#) – Filing by Manufacturers; Listings of Appliances in Database
- [1607\(b\) and \(d\)\(10\)](#) – Marking of Appliances

Code of Federal Regulations (CFR): Title 10, Energy

- [10 CFR 430.2](#) – Definitions
- [10 CFR 430.32](#) – Energy and water conservation standards and their compliance dates
- [10 CFR Appendix Y to Subpart B of Part 430](#) – Uniform Test Method for Measuring the Energy Consumption of Battery Chargers

Effective Dates

Figure 1 illustrates effective dates of regulation for consumer and non-consumer battery chargers. These are the dates, based on date of manufacture, for which a product must comply with efficiency, testing, marking and certification requirements. As seen in the graphic, most consumer battery charger systems were federally regulated beginning in June 2018, but some remain state regulated along with non-consumer battery charger systems.

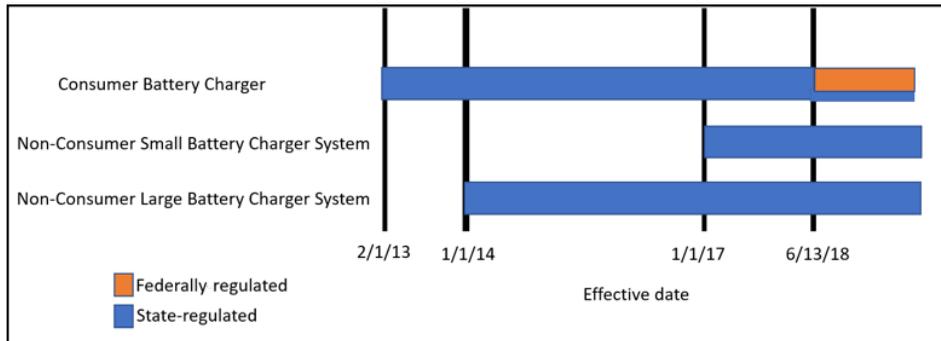


Figure 1: Regulation Effective Dates

Testing Requirements

As of June 20, 2016, federally regulated battery charger systems must use the test method in [10 C.F.R. section 430.23\(aa\)](#) and [Appendix Y to Subpart B of Part 430](#).

Test methods used to certify state-regulated products are unaffected by the U.S. DOE effective date of June 13, 2018. State test procedures that became effective in 2016 are different for small and large battery charger systems:

- State-regulated small battery charger systems: [10 C.F.R. section 430.23\(aa\)](#) ([Appendix Y to Subpart B of Part 430](#)) (January 1, 2017)
- State-regulated large battery charger systems: Energy Efficiency Battery Charger System Test Procedure Version 2.2 dated November 12, 2008, and published by ECOS and EPRI Solutions, with certain modifications as provided in [Title 20, Section 1604\(w\)](#)
- Uninterruptible Power Supplies in scope of federal test procedure: [10 C.F.R section 430.23\(aa\)](#) ([Appendix Y to subpart B of part 430](#))
- Uninterruptible Power Supplies not in the scope of federal test procedure and battery backups: [10 C.F.R section 430.23\(aa\)](#) ([Appendix Y to subpart B of part 430](#)) (January 1, 2016)



Cellphone chargers are now federally regulated.

Marking Requirements

Federally regulated battery chargers must comply with all Title 20 marking requirements, except for the “BC” marking. This marking is only required for state-regulated battery charger systems. As shown in Figure 2, the mark for state-regulated battery charger systems is a “BC” inside a circle that is legible and permanently affixed to: (A) the product nameplate that houses the battery charging terminal or; (B) the retail packaging and, if included, the cover page of the instructions.

Figure 2 illustrates the various test methods and marking requirements for federally and state-regulated battery chargers [Sections 1607\(b\)](#) and [\(d\)\(10\)](#).



Battery chargers for cordless shavers are now federally regulated.

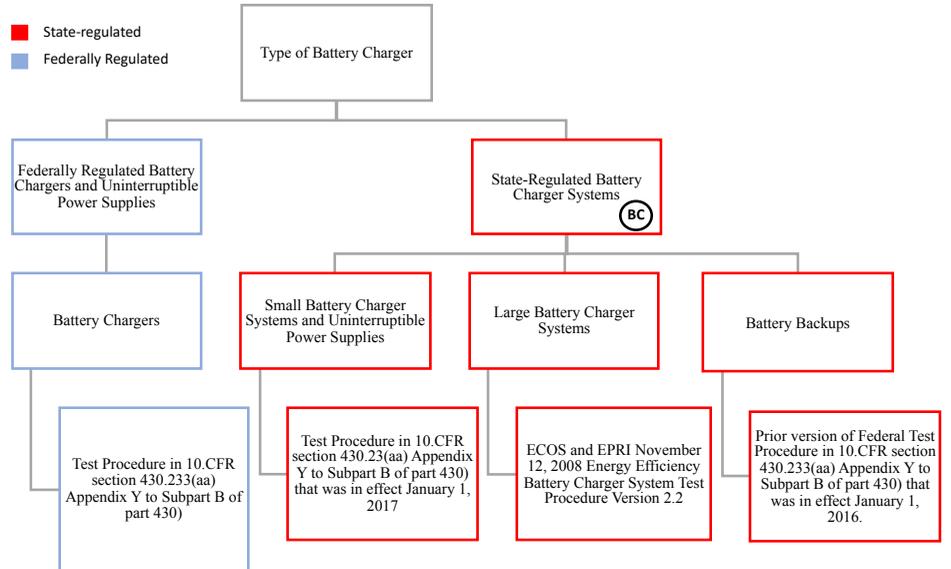


Figure 2: Testing and Marking Requirements for Federally and State-regulated Battery Chargers

Certification Requirements

Title 20 requires that both federally and state-regulated products be certified to the California Energy Commission’s [Modernized Appliance Efficiency Database System \(MAEDbS\)](#). Whether resubmission to MAEDbS is required as a result of the U.S. DOE June, 13 2018 effective date depends on whether the product is state regulated or federally regulated after that date:

- A product that was previously certified to the MAEDbS and is federally regulated after June 13, 2018 needs to be recertified to the MAEDbS as a federally regulated product
- A model number that was previously certified to the MAEDbS and remains state regulated after June 13, 2018 **does not** need to be recertified

In addition to being certified to the MAEDbS, federally regulated products must follow the certification requirements in the code of federal regulations.

The screenshot shows the 'CALIFORNIA ENERGY COMMISSION' logo and a search bar. Below the search bar, there are instructions for using the search and a 'Quick Search' section. The search filters include 'Model Number', 'Appliance Type' (set to 'Federally Regulated Batt'), 'Company', 'Brand', and 'Appliance Status'. There are 'Search' and 'Clear' buttons at the bottom right of the search area.

Frequently Asked Questions

Does my product need to be re-certified?

Products marked as manufactured prior to June 13, 2018 and previously certified to the MAEDbS may continue to be sold lawfully in California. For products manufactured after June 13, 2018, manufacturers of both federally and state-regulated products must test and certify models to the Energy Commission's Modernized Appliance Efficiency Database System (MAEDbS) in accordance with the regulations to be sold or offered for sale in California. State-regulated battery charger systems do not need to be re-certified.

For questions about certifying to the MAEDbS, please email appliances@energy.ca.gov or call the Energy Commission Appliances Hotline at (888) 838-1467 or (916) 651-7100.

Do manufacturers need to register their product to the MAEDbS if they source the battery and/or battery charger for the end product from another company?

If the company takes full responsibility for the final product, it can be considered the manufacturer for database purposes. The manufacturer only needs to register a regulated battery charger to the MAEDbS if the manufacturer develops the final product for sale in California.

If the product is already registered with U.S. prior to DOE, does it need to be certified to the MAEDbS?

To be sold in California, yes. As of January 1, 2019 all federally regulated battery chargers need to be certified to the MAEDbS. Small battery charger systems that are state-regulated must currently be certified to the MAEDbS.

If a product is archived, can it still be available for sale in California?

Products that are now federally regulated but were previously state-regulated and certified to the MAEDbS have been archived but can continue to be offered for sale in California if manufactured before June 13, 2018.

Will the federal standards supersede the California standards?

For federally regulated consumer battery chargers, federal standards supersede state standards for products manufactured on or after June 13, 2018. For the products that that are not covered by a federal standard (e.g., dry inductive or backup battery chargers), state standards remain in place and manufacturers must comply.

Which products will need the BC marking?

Title 20 standards require manufacturers to label state-regulated battery chargers systems with a BC marking. Federally regulated battery chargers do not require this mark.

For More Information

Primary Documents

- Title 20 Appliance Efficiency Regulations
energycodeace.com/content/reference-ace-t20-tool

California Energy Commission Information & Services

Title 20

- Appliances Hotline: (888) 838-1467 or outside California (916) 651-7100
- Questions may also be emailed to Appliances@energy.ca.gov
- California Appliance Efficiency Standards Site:
www.energy.ca.gov/rules-and-regulations/appliance-efficiency-regulations-title-20
- Modernized Appliance Efficiency Database (MAEDbS):
<https://cacertappliances.energy.ca.gov/Login.aspx>
- Federal Battery Charger Test Procedure Frequently Asked Questions
www.energy.ca.gov/appliances/documents/battery_charger_test_FAQ.html

Additional Resources

- Energy Code Ace:
EnergyCodeAce.com
 - An online “one-stop-shop” providing free resources and training to help appliance and building industry professionals decode and comply with Title 24, Part 6 and Title 20. The site is administered by California’s investor-owned utilities.
Of special interest:
 - Fact Sheets
energycodeace.com/content/resources-fact-sheets/
 - Title 20 Certification Overview, Process and FAQs
 - Title 20 On-Demand Video Training:
energycodeace.com/content/title-20-training/
- Please register with the site and select an industry role for your profile in order to receive messages about all our free offerings! You can also email us at Title20@energycodeace.com.



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