

PROTECT PUBLIC SAFETY: REQUIRE QUALIFIED INSTALLATION OF BATTERY ENERGY STORAGE SYSTEMS

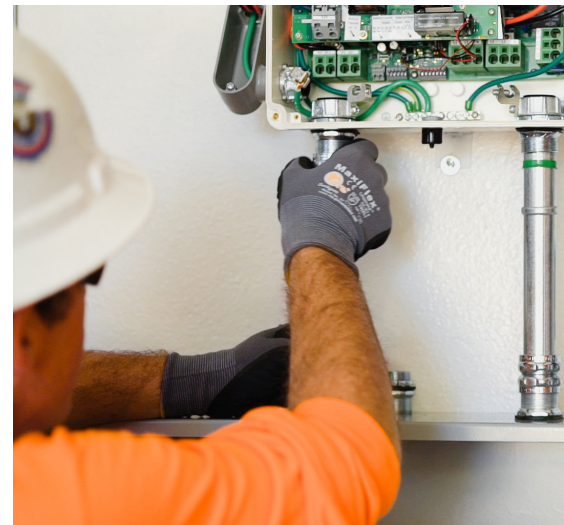
Urge the Contractors State License Board to Protect Public Safety and Require Only Licensed C-10 Electrical Contractors to Install Battery Energy Storage Systems

SAFE INSTALLATION OF BATTERY ENERGY STORAGE SYSTEMS BY QUALIFIED ELECTRICAL CONTRACTORS AND ELECTRICIANS IS KEY TO PROTECTING PUBLIC SAFETY

■ Battery energy storage systems are rapidly expanding and being installed in schools, hospitals, businesses and homes throughout the state. Battery storage is a key technology to help California meet our clean energy and emissions reduction goals and expand the adoption of solar, wind, and other clean energy sources.

■ The Contractors State License Board's (CSLB) primary mission is to protect consumers and the public. If not installed correctly by highly-qualified and licensed electrical contractors, battery energy storage systems pose unique fire, electrical, and public safety risks to installers, consumers, utility workers, and emergency personnel.

- ▶ A system that is improperly installed or maintained could cause serious public safety hazards including electrocution, arc flashes, arc blasts, fires, and explosions or thermal runaway.
- ▶ In some cases, arc flashes (which can reach temperatures hotter than the surface of the sun), arc blasts, and thermal runaway can be so serious that they affect the entire electrical system to which an energy storage system is connected—a building, a school, a home, even the electric grid itself.
- ▶ The threat to worker, first responder, and overall public safety is very serious. Explosions and intense heat produced by an arc blast or thermal runaway include the release of toxic gases, high speed projectiles, and extremely destructive fires.
- ▶ Due to the potential hazards, battery energy storage systems have their own separate installation standards, safety requirements, and national electric and fire codes.



...it would be a mistake for the Contractors State License Board to allow specialty solar contractors that are not authorized to install stand-alone energy storage systems to install these systems... Only contractors who have been trained in electrical risk assessment and electrical theory should work on these potentially dangerous systems."

**ELECTRICAL SAFETY FOUNDATION
INTERNATIONAL**

THE CSLB SHOULD CLARIFY REGULATIONS AND REQUIRE THE EXPERTISE OF A C-10 ELECTRICAL CONTRACTORS' LICENSEE TO SAFELY INSTALL AND MAINTAIN BATTERY ENERGY STORAGE SYSTEMS

■ Current regulations require a C-10 electrical contractor's license to install battery energy storage systems as a stand-alone system.

- ▶ State certified electricians have 8,000 hours of hands-on experience and have passed a rigorous state exam.
- ▶ C-10 licensed contractors and their certified electrician employees have expertise in all types of electrical work, including connecting electrical equipment to the grid, and upgrading existing electrical systems for additional load and service. They also hold a thorough understanding of the National Electrical Code (NEC), which is critical to preventing injury, destruction and death.

■ California regulation **specifically prohibits** C-46 licensed contractors (solar photovoltaic companies) and their employees from installing battery energy storage systems as a stand-alone project. However, ambiguity in the regulations has allowed C-46 solar contractors to install battery energy storage systems when paired with a solar photovoltaic system.

- ▶ C-46 licensed contractors aren't required to have a background in electrical theory and safety. Nor are they tested on the NEC in total.
- ▶ The employees of C-46 licensed contractors, who perform installations of battery energy storage systems, have no state requirements for training and certification. As such, they do not receive the extensive and specialized training needed to safely install and maintain battery energy storage systems.

■ Clarification in the regulation will not slow efforts to achieve our clean energy goals. There are more than 78,000 C-10 contractors ready and able to implement battery storage energy systems vs. the approximately 1,500 C-46 contractors who do not also carry a C-10 license.

■ A solar (photovoltaic) energy system is completely different than a battery energy storage system. Both systems operate independently from one another. Further, a battery transforms electrical energy into chemical energy and then back into electricity.

For that reason, CSLB regulations explicitly require a C-10 license to "install, erect or connect any electrical wires, fixtures, appliances, apparatus, raceways, conduits, solar photovoltaic cells or any part thereof, which generate, transmit, transform or utilize electrical energy in any form or for any purpose."

Training, Skills and Experience	C-10 and Licensed Electricians	C-46 and Employee Installers
8,000 Hours of Electrical Experience	<input checked="" type="checkbox"/>	<input type="checkbox"/>
State Certification Exam	<input checked="" type="checkbox"/>	<input type="checkbox"/>
AC & DC Training and Experience	<input checked="" type="checkbox"/>	<input type="checkbox"/>
National Electrical Code	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Continuing Education State Requirement	<input checked="" type="checkbox"/>	<input type="checkbox"/>

ACT NOW!

URGE THE BOARD:
PROTECT PUBLIC SAFETY:
REQUIRE QUALIFIED, SAFE
INSTALLATION OF
BATTERY ENERGY STORAGE
SYSTEMS

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