STATE OF CALIFORNIA

DEPARTMENT OF CONSUMER AFFAIRS

CONTRACTORS STATE LICENSE BOARD

INITIAL STATEMENT OF REASONS

Hearing Date: No hearing has been scheduled for the proposed action.

Subject Matter of Proposed Regulations: Battery Energy Storage Systems

Section(s) Affected: Title 16, California Code of Regulations (CCR), Sections 810, 832.10, and 832.46

Specific purpose of, and rationale for, each adoption, amendment, or repeal:

Background and Statement of the Problem:

The Contractors State License Board (CSLB or Board) licenses, regulates, and investigates complaints regarding four different contractor license categories in California, totaling approximately 286,000 licensees (active and inactive status). The four categories are general engineering contracting, general building contracting, residential remodeling contracting, and specialty contracting. (Bus. and Prof. Code (BPC) § 7055.) This rulemaking involves specialty contracting as it relates to the installation of photovoltaic solar energy systems and battery energy storage systems.

The Board enforces and administers the Contractors State License Law (CSLL), BPC section 7000, et seq. BPC section 7008 authorizes the Board to establish necessary rules and regulations for the administration and enforcement of the CSLL. BPC section 7000.6 requires the Board to prioritize public protection in all its licensing, regulatory, and disciplinary functions.

The Board sets the minimum standards for contractor licensing qualifications in California. The Board is authorized to adopt reasonably necessary rules and regulations to effect the classification of contractors in a manner consistent with established usage and procedures as found in the construction business. (BPC § 7059, subd. (a).) The Board may limit the field and scope of the operations of a licensed contractor to those in which they are classified and qualified to engage, as defined by BPC sections 7055, 7056, 7057, and 7058. (*Ibid*.) Consistent with that authority, by regulation, the Board has defined 43 specialty license subclassifications in section 832 of Article 3 of Division 8, Title 16 of the CCR. This proposed regulation affects two of those specialty license classifications: section 832.10, “Class C-10 – Electrical Contractor” and section 832.46, “Class C-46 – Solar Contractor.”

Existing law expressly authorizes the C-10 Electrical Contractor and the C-46 Solar Contractor classifications to install photovoltaic solar energy systems (PV systems), as follows:

- An electrical contractor places, installs, erects or connects 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. (CCR, tit. 16, § 832.10.)

- A solar contractor installs, modifies, maintains, and repairs thermal and photovoltaic solar energy systems. A licensee classified in this section shall not undertake or perform building or construction trades, crafts, or skills, except when required to install a thermal or photovoltaic solar energy system. (CCR, tit. 16, § 832.46.)

A PV system is a solar energy system that converts energy from the sun to electricity for an end user. Battery energy storage systems (BESS) are separate electrical systems that can complement PV systems. A BESS can store electrical energy for later use when the PV system is not generating electricity—for example, at night or on cloudy days—or provide backup power during a utility outage. A BESS can be installed initially as part of a PV system installation, added to an existing PV system at a future date, or installed separately to store energy from the power grid without the use of a PV system. With respect to storing energy, individual BESS capacities are measured in kilowatt-hours (kWh), which describes the maximum amount of electricity stored (in hours) when the battery is full.

The pairing of BESS with PV systems has expanded in recent years because of laws and policies furthering California's clean energy goals and in response to utility outages in California. Senate Bill 100 (De Leon, Chapter 312, Statutes of 2018) requires that, by the year 2045, 100 percent of electric retail sales to end-use customers come from zero-carbon resources and renewable energy (such as solar energy). In addition, the California Energy Commission adopted standards requiring all new homes after 2020 to have PV systems and new commercial buildings and high-rise multi-family buildings after 2022 to have PV systems and BESS capabilities. (Building Energy Efficiency Standards (Energy Code), CCR, tit. 24, Part 6.)

The Board has faced questions about the appropriate specialty license classification(s) to install BESS as between C-10 and C-46 license contractor classifications. There is no dispute that section 832.10 authorizes a C-10 Electrical Contractor to install BESS (because BESS generates, transmits, transforms, and/or utilizes electrical energy, consistent with the existing scope of the C-10 classification). However, the C-46 Solar Contractor classification is limited to work on (thermal and) PV solar energy systems, and section 832.46 does not expressly include BESS.

To the contrary, section 832.46 expressly precludes the C-46 Solar Contractor from performing trades, crafts or skills outside the scope of the classification, unless required

to install a thermal or PV system. Since 2016, the Board has worked with stakeholders to define the circumstances under which a C-46 Solar Contractor may install BESS.

BPC section 7059 similarly permits a specialty contractor (such as a C-10 or C-46) to contract outside of their classification to perform work in the craft or trade of another classification if that work "is incidental and supplemental to the performance of the work in the craft for which the specialty contractor is licensed." Section 831 of Title 16 of the CCR provides such work is "incidental and supplemental" when it is "essential to accomplish the work in which the contractor is classified."

Consistent with these classification restrictions, between February 2016 and April 2018, the Board issued consistent guidance in response to inquiries about which contractor classification(s) may install BESS and under which circumstances. The Board's guidance was a C-10 Electrical Contractor may install BESS either as part of a PV system or as an independent project, and a C-46 Solar Contractor may only install BESS as part of the installation of a PV system.

As far as the Board is aware, C-46 and C-10 contractors have installed PV systems paired with BESS in accordance with these views over the years without demonstrated harm to the public. Nonetheless, the Board's longstanding interpretations of its own regulations have been questioned, and has resulted in several public meetings, hearings, studies, and reports.

In 2018, the Board's Licensing Committee directed CSLB staff to conduct public meetings to determine if any license classifications should be precluded from installing BESS.

From 2018 to 2019, CSLB held several meetings, hosted a two-day public hearing, surveyed building officials, and received written and oral comment on the appropriate classification to install BESS in connection with a PV system or as a standalone project.

In March 2019, Board staff reported its research findings in a report to the Board (March 2019 BESS Report). The Board then directed staff to consider BESS size, complexity, voltage, and potential risks and draft proposed regulatory language to prohibit or restrict certain contractor classifications from performing BESS installations.

From March 2019 through August 2019, board staff conducted additional interviews, collected additional written and oral comments, and held additional stakeholder meetings. On August 6, 2019, the Board's Legislative Committee directed staff to prepare regulatory language to permit the C-46 Solar Contractor to install BESS in specified situations, with the further recommendation that staff study BESS size, complexity, voltage, and risk.

On October 1, 2019, CSLB hosted a public meeting with stakeholders to discuss the August 2019 Legislative Committee recommendation, but stakeholders disagreed about the economic impacts and safety implications of a BESS restriction on C-46 Solar Contractors.

On November 7, 2019, the Board's Legislative Committee Chair recommended staff not prepare regulatory language and instead seek a qualified expert to assist CSLB in its study of BESS issues.

On September 11, 2020, the Board retained University of California, Berkeley (UC Berkeley) as an expert to review BESS information CSLB received to date, perform fact-finding, and provide an analysis regarding BESS installation issues, including safety concerns and the appropriate contractor license classification(s) to install BESS.

In its report issued June 30, 2021, Evaluation of Alternative Contractor License Requirements for Battery Energy Storage Systems (UC Berkeley Report), UC Berkeley recommended CSLB limit the scope of the C-46 Solar Contractor and preclude entirely C-46 license holders from installing BESS. The UC Berkeley Report's findings included:

- CSLB would be encouraging "lower standards and lower requirements" by including C-46 Solar Contractors among the contractors authorized to install BESS as they are not required to employ certified electricians pursuant to Chapter 4.5 (commencing with § 108) of Division 1 of the Labor Code.

- There is not a justifiable threshold by size or sector to suggest less hazard or insignificant risk for BESS installation. While there have been no significant incidents with injury or death, there are data gaps that preclude definitive statements that risks are low.

- The transition costs for entirely precluding C-46 Solar Contractors from installing BESS would be minimal since C-46 Solar Contractors without an additional C-10 license are a small share of all contractors and workers who have installed BESS in California.

On July 27, 2021, UC Berkeley presented its report during a Board meeting. The Board then moved to rescind any prior staff determinations regarding BESS and preclude the C-46 Solar Contractor from installing BESS.

On September 17, 2021, the California Solar and Storage Association filed a verified petition for writ of mandate and complaint for declaratory and injunctive relief against the Board for its July 27, 2021, action. (San Francisco County Superior Court, case no. CGC-21-594911.)

On October 1, 2021, the Board agreed not to enforce its July 27, 2021, decision.

On November 29, 2021, and consistent with the UC Berkeley Report's recommendation, Board staff presented regulatory language to preclude the C-46 Solar Contractor from installing BESS entirely and recommended the Board authorize staff to commence regulatory action. The Board did not accept the recommendation and instead directed staff to gather further stakeholder input and develop alternative language acceptable to both the solar and electrical stakeholders.

From December 2021 to January 2022, Board staff held additional stakeholder meetings. Groups representing C-10 and C-46 contractors agreed any limitation to the C-46 license classification installing BESS should be determined by the kilowatt-hour (kWh) threshold (or energy capacity) of the BESS to be installed.

On March 30, 2022, the Board directed staff to engage an industry expert and develop a report to assist staff with drafting regulatory text reflecting an appropriate kWh threshold for C-46 Solar Contractors to install BESS.

On June 3, 2022, after holding additional stakeholder meetings and contracting with an industry expert to assist with a report, CSLB staff released "Battery Energy Storage Systems, CSLB Staff Report in Consultation with Expert Consultants" (June 2022 Staff Report). The report recommended amending the C-46 classification to expressly permit the installation of BESS up to and including 80 kWh when installed at the same time as a PV system, as incidental and supplemental to the system, pursuant to BPC section 7059. Staff prepared proposed regulatory language to amend sections 810, 832.10, and 832.46 consistent with the June 2022 Staff Report's recommendations.

On June 16, 2022, the Board approved the proposed amendments to sections 810, 832.10, and 832.46 that are the subject of this regulatory proposal.

There are no existing CSLB regulations that define BESS for the purpose of contractor license classifications. There are no CSLB regulations that expressly specify that BESS is not part of a PV system, or when a BESS is "incidental and supplemental" or essential to a specialty contractor's installation of a PV system. This proposal seeks to adopt such regulations.

The proposed text: (1) defines BESS for the purposes of specialty contractor license classifications; (2) specifies that a BESS, as a separate electrical system, is not part of a PV system and is not required to install a PV system; (3) precludes a C-46 Solar Contractor from installing BESS except as specified; and (4) clarifies that installation of a BESS by a C-46 Solar Contractor is incidental and supplemental to the installation of a PV system if the BESS does not exceed a rating of 80 kWh.

More specifically, this proposal would:

- Add a new definition of "battery energy storage system," to section 810, "Definitions," of Article 1, Division 8, of Title 16.

- Add “battery energy storage systems” to the description of the C-10 Electrical Contractor classification in section 832.10, “Class C-10 - Electrical Contractor,” of Article 3, Division 8, of Title 16. The proposal also replaces “solar photovoltaic cells” in section 832.10 with the more accurate “photovoltaic solar energy systems” from current section 832.46.

- Revise the existing section 832.46, “Class C-46 - Solar Contractor,” of Article 3, Division 8, of Title 16, by adding two new paragraphs to establish, for the purposes of the C-46 classification, that:

  (1) a BESS, as defined, is not required to install a PV system and shall not be considered within the scope of the C-46 Solar Contractor classification except as specified in the next subdivision; and

  (2) the C-46 installation of a BESS is incidental and supplemental to the work of a C-46 Solar Contractor when the BESS is installed at the same time as PV system and the BESS rating does not exceed 80 kWh.

Anticipated benefits from this regulatory action:

Defining BESS and including it within the trade descriptions of the C-10 and C-46 classifications allows CSLB to set a minimum standard for licensure for those specialty contractors who work with this technology. It allows CSLB to require license applicants to demonstrate BESS knowledge and experience and to include information about BESS in the CSLB license examinations. This ensures only those specialty contractors who are qualified to install BESS are licensed, and it prioritizes protection of the public as California advances toward its clean energy goals.

The proposed amendments will eliminate stated confusion about whether BESS is part of a PV system or a standalone electrical device for the purposes of CSLB specialty license classification descriptions. Specifying that BESS is a standalone technology strictly appropriate for the C-10 Electrical Contractor classification – except in clearly defined circumstances when a C-46 Solar Contractor is installing BESS at the same time as a PV system – ensures the Board is appropriately limiting the field and scope of the operations of licensed contractors to those in which they are classified and qualified to engage, as required by BPC section 7059. It further preserves the distinction between the two trades and their workforces.

The proposed amendments will also eliminate stated confusion about which specialty license classification(s) can install BESS paired with PV systems. For the existing C-46 Solar Contractor workforce, the proposed amendments recognize that, although BESS are separate electrical systems, they have become a desirable supplement to PV system installations, and C-46 contractors can perform BESS installations when installing PV systems as part of their trade in specified circumstances. This preserves the practical differences between BESS and PV systems by treating certain BESS installations as out-of-classification work for C-46 contractors at a specified threshold. It

will aid C-46 licensees in knowing and complying with a clear standard and aid the Board in enforcing the standard.

The proposal also benefits the public by clearly defining the BESS installations that require specialized electrical knowledge and skill. By identifying an 80-kWh threshold above which BESS installation is appropriate only for other contractors, the proposal ensures BESS is installed only by those contractors who have met the minimum qualifications, particularly the C-10 Electrical Contractor classification.

Finally, this proposal assures continuation of the businesses of C-46 Solar Contractors who are currently installing PV systems paired with BESS. CSLB recognizes deployment of renewable energy systems in residential and light commercial applications is required by the California Energy Code and is essential for California's clean energy goals. The population primarily affected by this proposal are the small share of contractors holding a C-46 classification and no other license classification that authorizes them to install BESS (i.e., a C-46 holding no C-10, "B", or "A" classification). According to 2020 Interconnection data, this population installed 601 BESS out of 13,073 total projects (4.6% of all projects), with an average BESS size of between 17.82 kWh, based on CSLB's review of 556 BESS, or 19.2 kWh, based on CSLB's review of the raw Interconnection data. (See June 2022 Staff Report, p. 13.) Even using a different data set, the Self-Generation Incentive Program (SGIP) data, between 2015 and 2020, this population installed 1,223 BESS out of 19,194 total projects (6.4% of all projects) with an average BESS size of between 14.04 kWh, based on CSLB's review of 556 BESS, and 17.15 kWh, based on CSLB's review of the raw SGIP data.

In other words, by any measure, C-46 contractors (holding no other license classification authorizing them to install BESS) typically install only a small share of BESS projects, and those projects are usually well under the 80-kWh threshold recommended in this proposal (June 2022 Staff Report). Whereas the UC Berkeley Report and other prior proposed regulatory changes would have precluded the C-46 Solar Contractor classification from installing BESS entirely, this proposal ensures the continuation of the businesses of C-46 Solar Contractors holding no other license classification consistent with the types of installations prevalent in the C-46 marketplace.

Factual Basis/Rationale:

Amend Section 810, Definitions

Subdivision (a)

The Board proposes to adopt subdivision (a) to provide, "For purposes of this division, 'battery energy storage system' means one or more devices, assembled together, capable of storing energy in order to supply electrical energy at a future time."

Purpose:

The purpose of this amendment is to establish a definition of a "battery energy storage system" as the term is used in Division 8 of Title 16 of the Board's regulations.

Rationale:

The Board derives this definition generally from the definitions of "energy storage systems" in the California Building Standards Codes (CCR, Title 24 or BSC), and specifically from the Residential Code (CCR, tit. 24, Part 2.5, § R202) and the Fire Code (CCR, tit. 24, Part 9, § 202), which both define "energy storage systems" as: "One or more devices, assembled together, capable of storing energy in order to supply electrical energy at a future time." (See also Cal. Energy Code, CCR, tit. 24, Part 6, § 100.1 [same]; Cal. Electrical Code, CCR, tit. 24, Part 3, § 706.1.) For purposes of the BSC, energy storage systems include battery energy storage systems. (Cal. Electrical Code, CCR, tit. 24, Part 3, § 706.1 ["ESS(s) can include but is not limited to batteries …]".)

The BSC contains general building design and construction requirements for fire, life, and structural safety. The BSC provides minimum standards to safeguard life or limb, health, property, and public welfare by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all buildings and structures and certain equipment. In developing the BSC, the Building Standards Commission undergoes a 12-to-18-month rulemaking process with contributions from multiple committees and state agencies with public comment periods to develop, propose, and adopt the standards. This is done on a three-year cycle to continually update the BSC with developments in the industry. For these reasons, staff explained in materials for the March 30, 2022, Board meeting that any BESS regulation should be supported by Title 24 and made this recommendation, which the Board in turn approved. In deriving a BESS definition from the Title 24, the Board relies on the BSC as establishing through an informed stakeholder process an appropriate and accurate description of BESS technology as employed in modern-day construction.

Moreover, by using a definition derived from the BSC, which governs the safe construction of buildings and other structures that would have BESS installed, the definition provides a common framework for determining the types of structures and fire safety requirements that C-46 contractors must also consider when installing BESS.

The Board has added the word "battery" to the term "energy storage system" for use in this regulation, even though the word "battery" is not included in the BSC "energy storage systems" definitions, for four reasons.

First, most batteries, in the common understanding of the word, store energy for future use, consistent with the definition proposed.

Second, the June 2022 Staff Report and the UC Berkeley Report found that the BESS systems commonly installed in California are the self-contained, premanufactured

products in the residential and light commercial market, comprised particularly of lithium-ion batteries. These products are marketed as rechargeable “batteries,” and the Board captures this term in the definition because these are the products contractors are predominantly installing.

Third, the definition captures the different ways in which contractors may install BESS. It covers the common practice of installing multiple batteries and connecting them to form a single energy storage system with multiple devices “assembled together.” As a prefix to and descriptor for the term energy storage systems, the word “battery” will describe a single battery or multiple batteries, whichever may be deployed at a single project.

Finally, the definition will also describe the installation of what is referred to as a “battery room” or energy storage closet that is often seen at larger commercial or utility-scale projects. Accordingly, the proposed BESS definition is sufficiently broad to describe the range of activities of licensees installing this technology.

Subdivision (b)

In a newly renumbered subdivision (b), the Board proposes to strike “chapter” and replace it with “division.”

Purpose:

The purpose of this amendment is to redesignate the existing language as subdivision (b) following the newly proposed subdivision (a), and to correctly state the applicability of a defined term “Board.”

Rationale:

The Board renumbers this paragraph as subdivision (b) due to the proposed adoption of a new subdivision (a).

Title 16, Division 8 of the CCR (Contractors State License Board) uses articles and sections and has no chapters. As a result, the use of the word “chapter” in existing section 810 is inaccurate. The Board proposes to replace the term with “division” instead of “article” because there are no other sections in Article 1 where section 810 resides in the CCR.

Amend Section 832.10, Class C-10 – Electrical Contractor

The Board proposes to amend section 832.10 to include within the classification “battery energy storage systems” among the items an electrical contractor may place, install, erect or connect, add “solar energy systems” after the word “photovoltaic,” and delete the word “cells” within the classification description.

Purpose:

The purpose of these amendments is to establish that battery energy storage systems of all sizes and types are within the scope of the C-10 Electrical Contractor classification and to correct the inaccurate reference to “solar photovoltaic cells.”

Rationale:

The Board proposes to expressly add BESS to the C-10 Electrical Contractor description because BESS generate, transmit and utilize electrical energy. Existing section 832.10 provides the C-10 Electrical Contractor’s principal construction business involves things that generate, transmit, transform, or utilize electrical energy. In addition, Article 706 of the California Electrical Code refers to energy storage systems as electric power production sources, i.e., they generate energy. (See CCR, tit. 24, Part 3, § 706.1 [“These systems are primarily intended to store and provide energy during normal operating conditions”].) Things that generate or transmit power, or otherwise utilize electrical energy, are part of the existing description of the section 832.10 electrical contractor classification and are appropriately included in the C-10 Electrical Contractor description.

The Board proposes to add “solar energy systems” after “photovoltaic” for two reasons: (1) PV systems generate, transform, and transmit electrical energy, which makes PV systems appropriately included in the activities described in the existing C-10 description (see Cal. Electrical Code, CCR, tit. 24, Part 3, art. 100 [Photovoltaic systems “convert solar energy into electric energy”], § 690.4 [“Photovoltaic systems shall be permitted to supply a building or other structure in addition to any other electrical supply system(s)”]; and (2) the Board intended the C-10 Electrical Contractor to broadly install photovoltaic technology by adding “photovoltaic” to the regulation in 1982. (See March 2019 BESS Report.)

The Board proposes to move “solar” before “photovoltaic” and strike “cells.” The movement of the word “solar” is non-substantive, and the word “cells” is too limiting to capture all of the PV electrical devices that C-10 contractors may install within the scope of their license. In the context of solar photovoltaic systems, solar “cells” are “[t]he basic PV device that generates electricity when exposed to light.” (Cal. Electrical Code, CCR, tit. 24, Part 3, § 690.1.) C-10 contractors, however, may install the entire PV system, including the cells, so the limiting use of the word “cells” does not accurately reflect the full scope of the C-10 classification’s practice.

These changes will also ensure consistency with the use of “photovoltaic solar energy systems” in the existing C-46 regulation in section 832.46. They will also make the regulation consistent with section 832.46, as the Board removed photovoltaic “cells” from the C-46 regulation in 2009. (See March 2019 BESS Report.)

Amend Section 832.46, Class C-46 – Solar Contractor

Subdivision (a)

The Board proposes to designate the existing language as subdivision (a) based on its proposed adoption of new subdivisions (b) and (c).

Purpose:

The purpose of this amendment is to reorganize the regulation into three subdivisions.

Rationale:

This amendment is necessary because the Board is proposing to adopt two new subdivisions (b) and (c). As existing text is not subdivided, the Board needs to establish a new subdivision (a).

Subdivision (b)

The Board proposes to adopt a new subdivision (b), to provide "For the purposes of this section, a battery energy storage system, as defined in section 810, shall not be considered part of a photovoltaic solar energy system or required to install a photovoltaic solar energy system. Except as provided in subdivision (c), a licensee classified in this section shall not install, connect, modify, maintain, or repair a battery energy storage system."

Purpose:

The purpose of this proposed new subdivision is to specify expressly that photovoltaic solar energy systems do not include battery energy storage systems and to establish the activities in which a C-46 Solar Contractor may not engage.

Rationale:

This proposed new subdivision is necessary to expressly state that PV systems do not include BESS, and C-46 Solar Contractors may not work on BESS, except as provided in subdivision (c), to clear up claimed ambiguities identified in the Board's current regulation as it relates to BESS.

The C-46 Solar Contractor classification was established to enable solar contractors to install, modify, maintain, or repair thermal and PV systems, not modern BESS. The current scope of the C-46 Solar Contractor's work expressly includes PV systems, not BESS, and the classification regulation precludes them from doing out-of-classification work that is not required for the installation of a PV system. Since the two electrical systems have different uses, serve different purposes, and are treated differently in the building codes, this amendment will expressly establish what is already necessarily

implied in the current regulation: that PV systems and BESS are separate technologies and systems for purposes of the C-46 classification.

PV and BESS electrical systems are factually distinct systems. They are generally made up of different component parts. A BESS can be deployed to store energy from the power grid without the use of a PV system. A PV system deployed without a BESS can provide power during a sunny day without drawing from the grid and later draw from the grid at night or during cloudy days when the sun is not available.

PV and BESS electrical systems are also legally distinct systems. The California Electrical Code defines and treats PV and BESS as separate electrical systems (Articles 100, 690 and 706). It describes PV systems as capable of interacting with other electrical power production sources, standalone, or both and may or may not be connected to separate energy storage systems such as batteries. (Cal. Electrical Code, CCR, tit. 24, Part 3, § 690.1.) The two systems are also governed by different provisions of the Residential and Fire Codes (Cal. Fire Code, CCR, tit. 24, Part 9, §§ 1205 and 1207; Cal. Residential Code, CCR, tit. 24, Part 2.5, §§ R324 and R328).

While the two systems are distinct, there may be circumstances where a BESS paired with a PV system would be particularly useful, such as where a PV system alone without a utility connection would not be able to supply uninterrupted power to a structure without backup energy. Such an “off-grid” PV system without a BESS might only be able to supply power to a structure when the sun is out. However, an “off grid” pairing is only one application of a BESS and PV system, and the fact that BESS and PV systems may have more limited uses in some circumstances does not otherwise make a separate BESS part of a PV system for purposes of the current regulation. On the other hand, it might arguably supply the circumstances necessary under the current regulation for a C-46 contractor to install a BESS concurrently with a PV system installation, under the clause that permits them to “perform building or construction trades, crafts, or skills … when required to install a … photovoltaic solar energy system.”

To clear up any claimed ambiguities in the current regulation, the proposed regulation expressly states that BESS “shall not be considered part of…or required to install a photovoltaic solar energy system,” except in the circumstances described in subdivision (c). And when combined with the proposed subdivision (c), the proposed regulation (like the current regulation) would preclude a C-46 Solar Contractor from installing a standalone BESS that does not also include installation of a PV system. The amendment clears up identified ambiguities in the current regulation, while also preserving the factual and legal distinctions between BESS and PV systems, and scope of work distinctions that exist between the C-46 and the C-10 specialties.

The Board is charged with limiting the field and scope of the operations of a licensed contractor to those in which they are classified and qualified to engage, and with adopting rules for different classifications in a manner consistent with “established usage and procedures as found in the construction business.” (BPC § 7059.) The construction business distinguishes between BESS and PV systems as separate systems that can

complement each other, but can also operate independently. The C-46 specialty is precluded in the current section 832.46 from engaging in a trade, craft, or skill that is not required to install a solar system, and the proposed regulation expressly preserves this aspect of the current law as it relates to BESS.

For these reasons, the Board proposes expressly limiting the C-46 Solar Contractor installation of BESS to specified applications in the following subdivision.

Subdivision (c)

The Board proposes to adopt a new subdivision (c), to provide "For purposes of Section 7059 of the [Business and Professions] Code and this division, a licensee classified in this section may install a battery energy storage system as 'incidental and supplemental' to the installation of a photovoltaic solar energy system if the battery energy storage system does not exceed a rating of 80 kilowatt-hours (kWh)."

Purpose:

The purpose of this proposed new subdivision is to establish the circumstances under which a C-46 Solar Contractor may permissibly install BESS.

Rationale:

In addition to the classification restrictions discussed above, contractors licensed in one specialty classification are generally prohibited from contracting in the field of another classification, unless they are (1) licensed in that classification or (2) are permitted to do so as "incidental and supplemental" work:

> Nothing in this section shall prohibit a specialty contractor from taking and executing a contract involving the use of two or more crafts or trades, if the performance of the work in the crafts or trades, other than in which he or she is licensed, is incidental and supplemental to the performance of the work in the craft for which the specialty contractor is licensed.

(BPC § 7059, subd. (a); see also CCR, tit. 16, § 830, subd. (b).)

Out-of-classification work can be considered "incidental and supplemental" to in-classification work "if that work is essential to accomplish the work in which the contractor is classified." (CCR, tit. 16, § 831.)

Since BESS and PV systems are separate electrical systems, the proposed subdivision (c) is necessary to expressly enable C-46 contractors to install BESS in conjunction with the installation of a PV system. Despite being separate systems, PV systems and BESS can be complementary systems, and it is increasingly common that they are paired together. Also, C-46 contractors presently install BESS in conjunction with PV system installations. The proposed regulation will help expressly align the classification

regulation with the practice currently found in the construction industry. Moreover, the pairing of PV systems with BESS will help meet California's clean energy and carbon reduction goals.

In light of these circumstances, C-46 contractors should be permitted to install BESS in conjunction with the installation of PV systems, up to a certain threshold, and the way the CSLL and its enabling regulations permit a specialty contractor to contract in the field of another contractor is when the out-of-classification work is "incidental and supplemental"—i.e., essential to the installation of—the in-classification work. For the reasons described herein, the Board views BESS installation work as incidental and supplemental to PV installation work, up to 80 kWh.

An 80-kWh threshold is reasonable for several reasons. First, there is no evidence of consumer harm caused by either contractor classification installing BESS up to and including this threshold. Where the largest risk of BESS harm is "thermal runaway," the June 2022 Staff Report found the risk of this occurring arises from internal circuitry, physical mishandling, and/or defects, and not the contractor's installation. Furthermore, within the 80-kWh threshold, the risk of harm does not increase when installing a single 20-kWh BESS, or assembling multiple individual BESS together to reach a higher kWh, and the electrical theory required to do so is the same. (June 2022 Staff Report.)

There are also sufficient third-party protections in place to limit the possible risk of harm caused by licensed contractors, including the Underwriters Laboratories (UL) safety certification standards adopted by the industry that all BESS must meet, as well as the Electrical, Residential, and Fire Codes with which all contractors must comply, regardless of license classification. The June 2022 Staff Report further concluded when a contractor has met the minimum standards for C-10 and C-46 licensure, they have the skill and ability needed to make the electrical connections required for smaller BESS installations within an 80-kWh threshold when paired with a solar PV system.

Second, electrical system connections required at thresholds above 80 kWh are more appropriate for a C-10 Electrical Contractor. Even though the risk of fire or complexity of installation does not change when assembling multiple BESS together to increase kWh ratings, the electrical skill and knowledge required for the installation changes when installing larger BESS to buildings with heavier power loads. This is because the higher the kWh threshold of a BESS, the more likely the solar-paired BESS installation exceeds what is typically installed for residential or light commercial applications and requires connections, upgrades, or changes to main electrical service panels to accommodate the larger BESS. This involves skills, trades or crafts exceeding the scope of the C-46 Solar Contractor classification. The June 2022 Staff Report found that larger buildings with heavier power loads have more complex electrical systems requiring knowledge of electrical theory and devices not involved with the interconnection of PV systems that C-10 Electrical Contractors are tested on in their license examination. The work required to connect BESS to larger buildings therefore involves knowledge and skills more appropriate for the C-10 Electrical Contractor than the C-46 Solar Contractor.

Third, BPC section 7059 provides that the Board may adopt classification regulations "in a manner consistent with established usage and procedure as found in the construction business…," and the California Court of Appeal explained that "[s]o long as classification occurs in a manner consistent with established usage in the industry, the Board has the power to amend classifications as it sees fit." (*Davies v. CSLB* (1978) 79 Cal.App.3d 940, 949.)

The 80-kWh threshold is consistent with projects that are prevalent in the C-46 construction field, which is the population most directly affected by this proposal. In fact, C-46 Solar Contractors holding no other license classification typically perform installations far below an 80-kWh threshold, at sizes most commonly found in the residential marketplace.

The average capacity of all solar-paired BESS projects installed by C-46 Solar Contractors holding no other license classification between 2015 and 2020 was 17.15 kWh, according to the CSLB's review of the raw SGIP data, and it was 19.2 kWh in 2020, according to CSLB's review of the raw Interconnection data. (See June 2022 Staff Report, p. 13.) For this same population, based on CSLB's evaluation of 556 BESS, the average capacity for residential projects was 15.79 kWh, and for non-residential projects it was 33.34 kWh. (June 2022 Staff Report, p. 13.) As such, the recommended 80-kWh threshold will continue to permit C-46 Solar Contractors to install BESS at a level prevalent among C-46 Solar Contractors in the construction business.

In addition, C-46 Solar Contractors typically install smaller projects with sizes commonly found in residences, not larger commercial projects. As reported in the June 2022 Staff Report, the average rated power of residential BESS installations in California was between 6 and 7 kw, and the average rated power for nonresidential installations was between 91 and 130 kw. (June 2022 Staff Report, pp. 12-13; UC Berkeley Report, p. 32, Table 5.)

Based on CSLB's review of 556 battery energy storage systems, the capacity of BESS in kWh can be derived by multiplying the size of the system in kw by 2.7 (i.e., 6.03 kw x 2.7 = 16.3 kWh). (June 2022 Staff Report, p. 13.) Using this same conversion method, the average capacity of residential BESS installations in California was between 16.3 and 18.36 kWh, and the average capacity for nonresidential installations was between 246.4 and 351 kWh.

As noted above, the average capacity of all solar-paired BESS projects installed by C-46 Solar Contractors holding no other license classification ranged from 17.15 kWh, according to the raw SGIP data, to 19.2 kWh, according to the raw Interconnection data. (See June 2022 Staff Report, p. 13.)

Since the average capacity range of all C-46 BESS installations (17.15-19.2 kWh) also fits neatly within the average range for all California residential installations (16.3-18.36 kWh), and it falls far below the average range of all California nonresidential installations

(246.37-351 kWh), it is clear that C-46 contractors install smaller projects with sizes commonly found in residences, and not larger commercial projects.

Fourth, the 80-kWh threshold is supported by Title 24. Since Title 24 codes are adopted through a rigorous stakeholder participation process with the purpose of ensuring life safety in property and quality in construction, the Board relies on Title 24 standards in proposing a kWh threshold for this rulemaking. Title 24 provides that 80 kWh is the maximum kWh of a BESS allowed in one location in the Residential Code, and in specified residential occupancies in the Fire Code, within attached or detached garages and detached accessory structures, on exterior walls, or outdoors on the ground (Cal. Residential Code, CCR, tit. 24, Part 2.5, § R328.5,[1] Cal. Fire Code, CCR, tit. 24, Part 9, § 1207.11.4). The June 2022 Staff Report showed that installations above this standard are subject to more rigorous safety standards because they present greater risks. This fact is also generally consistent with the finding that higher kWh installations tie into more complex electrical systems. Since C-46 Solar Contractors holding no other license classification typically install BESS within an 80-kWh threshold, and in sizes more commonly found in residential applications regulated by the Title 24 codes, 80 kWh is a reasonable standard to provide consistency with other laws governing construction in California.

For these reasons, the Board proposes the C-46 Solar Contractor be expressly authorized to install BESS up to 80 kWh when installed at the same time as incidental and supplemental to a PV system. The data shows residential and light commercial installations primarily fall within this threshold. This proposal will not impair businesses performing this work, and the Board regards these installations as essential to California's clean energy and decarbonization goals. The proposal further ensures that when BESS is deployed at structures with heavier power loads, which is likely to occur at thresholds higher than 80 kWh, the C-10 contractor is the classification with the appropriate knowledge and skill because the activities required to make those electrical connections extend beyond the trade skills needed for the installation of a PV system. This preserves the distinctions between the trades and their workforces while promoting public protection by limiting that work to those who have met the minimum qualifications.

Underlying Data

1. Senate Bill 100 (De Leon, Chapter 312, Statutes of 2018)
2. Building Energy Efficiency Standards (Energy Code), CCR, Title 24, Part 6 (provisions requiring PV in residential 2020 and PV and BESS in commercial in 2022)
3. February 16, 2016, email from CSLB to Eddie Bernacchi of the National Electrical Contractors Association and CSLB response
4. July 18, 2017, Emails and Letter with Center for Sustainable Energy

[1] Cal. Residential Code, CCR, Title 24, Part 2.5, section R328.5 and Cal. Fire Code, CCR, Title 24, Part 9, section 1207.11.4 are referenced in the 2022 June Staff Report as sections R327.5 and 1206.11.4, respectively, as they were recently renumbered during the BSC's 2021 Triennial Code Cycle.

5. April 13, 2018, Board Meeting Packet, p. 155
6. February 23, 2018, Licensing Committee direction
7. March 21, 2019, CSLB Battery Energy Storage Systems Report
8. March 21, 2019, Board direction
9. August 6, 2019, Legislative Committee direction
10. November 7, 2019, Legislative Committee direction
11. December 19, 2019, Board direction
12. June 30, 2021, UC Berkeley Battery Energy Storage Systems License Classification Report
13. November 29, 2021, Board direction
14. March 30, 2022, Board direction
15. June 3, 2022, Battery Energy Storage Systems CSLB Staff Report in Consultation with Expert Consultants
16. June 16, 2022, CSLB Board Meeting Minutes, pp. 19-26
17. California Building Standards Code (CCR, Title 24), in the California Residential Code, CCR, Title 24, Part 2.5, section R202, the California Electrical Code CCR, Title 24, Part 3, Article 706, and the California Fire Code, CCR, Title 24, Part 9, section 202
18. March 30, 2022, Board Meeting Packet (staff explanation, Board vote)
19. Photovoltaic Cell (description, University of Calgary)
20. California Electrical Code, CCR, Title 24, Part 3, Article 690
21. California Residential Code, CCR, Title 24, Part 2.5, section R328.5
22. California Fire Code, CCR, Title 24, Part 9, section 1207.11.4
23. California Electrical Code, CCR, Title 24, Part 3, section 100

Business Impact:

The Board has made the initial determination the proposed regulations will not have a significant statewide adverse economic impact directly affecting businesses (including the inability of California businesses to compete with businesses in other states).

This initial determination is based on the following facts:

- The Board has determined the only types of businesses that may be affected are licensed contractors who hold a C-46 Solar Contractor classification and no other license classification that authorizes the contractor to install BESS (i.e., a C-46 that holds no C-10, “A”, or “B” classification). Businesses holding a C-10 classification will not be adversely affected as C-10 contractors may install BESS without limitation and this regulation would continue to allow such installations.

- As of August 2022, there were 481 C-46 Solar Contractors who do not hold any other license classification authorizing them to install BESS (i.e., a C-46 and no C-10, “B”, or “A” classification). Ostensible impact to the 481 licensees would be twofold to those who are: (1) currently in the business of installing PV systems paired with a BESS; and (2) installing PV systems paired with BESS at a kWh rating higher than 80 kWh. According to the 2020 Interconnection data, this

population installed 601 BESS out of 13,073 total projects (4.6% of all projects), with an average BESS size of between 17.82 kWh, based on CSLB's review of 556 BESS, or 19.2 kWh, based on CSLB's review of the raw Interconnection data. (See June 2022 Staff Report, p. 13.) Even using a different data set, the SGIP data, between 2015 and 2020, this population installed 1,223 BESS out of 19,194 total projects (6.4% of all projects) with an average BESS size of between 14.04 kWh, based on CSLB's review of 556 BESS, and 17.15 kWh, based on CSLB's review of the raw SGIP data. In sum, the 481 C-46 contractors holding no other license classification authorizing them to install BESS only install between 4.6% and 6.4% of all BESS projects, a small share of the overall number of projects. And based on the average size of installations by this population, most of the projects they perform are at kWh capacities much lower than 80 kWh, if they install BESS at all (some solar contractors may only install PV systems and not BESS). As a result, the number of licenses potentially affected is insufficient to create a statewide adverse economic impact. Indeed, the UC Berkeley Report concluded that completely "precluding or restricting C-46 (no C-10, A, or B) contractors will have a negligible effect on the current pool of contractors, because only a tiny fraction of current BESS installations has been carried out by contractors holding only a C-46 license without an A, B, or C-10 license." (UC Berkeley Report, p. 37.)

Economic Impact Assessment:

The Board has determined that this regulatory proposal will have the following effects:

- It will not significantly create or eliminate jobs within the State of California. The UC Berkeley Report estimated as of June 2021, there were 6,317 non-electrical solar installers and 4,204 electrician solar installers (i.e., workers, not licensed contractor employers) in California. (UC Berkeley Report, p. 81.) The UC Berkeley Report conducted an economic analysis of the workforce impact of precluding the C-46 from installing BESS entirely to make it the exclusive domain of the C-10. UC Berkeley found that if C-46 contractors holding no other license classification authorizing them to install BESS were precluded from installing BESS entirely, it might equate to the loss of between 11 and 18 full-time jobs in the residential market statewide (UC Berkeley Report, p. 29). While no comparable analysis was conducted for the commercial market, C-46 contractors mostly install BESS at sizes commonly found in the residential market, and UC Berkeley found that their participation in the commercial market was "negligible" and reported at "0%," according to SGIP data (UC Berkeley Report, pp. 26, 28, figure 11). This proposal does not preclude C-46 contractors from installing BESS entirely. Instead, the proposed regulation will permit C-46 contractors to continue installing BESS over and above the project sizes that they already typically install. Indeed, UC Berkeley concluded that a restriction of 5 kw and 20 kWh "would basically maintain the status quo." (UC Berkeley Report, pp. 5, 14, 31.) The Board is proposing an 80-kWh restriction, far greater than the restriction that UC Berkeley called "the status quo." The Board therefore concludes that any job impact will be significantly less

than the minimal impact established by UC Berkeley if the Board were to completely preclude C-46 contractors from installing BESS. Any C-46 Solar Contractor without another license classification seeking to install BESS above 80 kWh may opt to apply for a C-10 Electrical Contractor license for $230.

- It will not create new businesses or eliminate existing businesses within the State of California. This proposal impacts how a single technology within an existing marketplace – the BESS-paired PV system installations – will be characterized for the purpose of defining the scope of existing specialty contractor license classifications. No existing business that already installs BESS paired with PV systems will be precluded entirely from installing BESS paired with PV systems as a result of this proposal.

- It will not adversely affect the expansion of businesses currently doing business within the State of California. BESS paired with PV systems is an emerging and expanding business already conducted by C-10 and C-46 businesses.

- This regulatory proposal will positively affect the health and welfare of California residents. In California, in general, a contractor's license is required to affix an electrical device to a structure if the contract exceeds $500 for labor and materials. The California Electrical Code requires all connections regulated by the Code to be made by qualified persons (Cal. Electrical Code, tit. 24, Part 3, art. 100). However, BESS has been undefined for the purposes of CSLB contractor license classifications. When it is unclear which license classification(s) can install which technology with an accompanying risk of electrical shock or fire, consumers are at risk. This proposal will set the minimum standards for licensure for the C-46 and C-10 specialty trades that will work with this technology. This establishes who is qualified to install BESS and in which capacities for the purpose of specialty contractor licensing, which in turn will provide public protection in the marketplace for PV systems paired with BESS.

- This regulatory proposal benefits worker safety because it ensures that only appropriately skilled workers install BESS, and safety standards are being met for licensed contractors who work with BESS and employ workers to do so. As discussed, electrical system connections required at thresholds above 80kWh are more appropriate for C-10 contractors, and the proposed regulation ensures that only qualified contractors install BESS. Additionally, pursuant to the California Residential and Fire Codes, 80 kWh is the maximum allowable capacity for BESS that can be installed for a residential occupancy within common residential locations. (Cal. Residential Code, CCR, tit. 24, Part 2.5, Section R328.5, Cal. Fire Code, CCR, tit. 24, Part 9, Section 1207.11.4). Above 80 kWh, more rigorous safety standards are applied to the installation of BESS. If a C-10 license is required to equip a PV system with a BESS above 80 kWh, an installing worker may also be required to secure electrical certification that meets the requirements of California's Division of Apprenticeship Labor Standards Enforcement (see

Chapter 4.5 (commencing with section 108) of Division 1 of the Labor Code) for a skilled workforce trained in electrical safety.

- This proposal will not impact the state's environment. CSLB has determined this proposal will not affect demand for PV systems and BESS and will not decrease the deployment of BESS paired with PV systems in California because:

    - The UC Berkeley Report found the number of PV systems with BESS (PV-paired BESS) is increasing in California. (UC Berkeley Report, p. 20.) While the number of installations is increasing, the average size of storage systems in California is declining due to the "rapid growth of residential installations" that tend to be smaller in kWh size. (*Ibid.*) The average size of all BESS installations between 2015-2020 in the UC Berkeley data was 10.9 or 8.0 kW, depending on the data set. (UC Berkeley Report, p. 25.) Based on CSLB's review of 556 BESS, the capacity of BESS in kWh can be derived by multiplying the size of the system in kw by 2.7 (i.e., 10.9 kw x 2.7 = 29.43 kWh). (June 2022 Staff Report, p. 13.) Using this same conversion method, the average capacity of all BESS installations in California was between 29.43 and 21.6 kWh, which is well below the 80-kWh proposed by this regulation. And as discussed above, C-46 contractors installed projects with an average BESS size of between 14.04 kWh and 19.2 kWh, based on the data set used, which is far below even the average size for all BESS installations in California. By every measure then, even though the number of PV-paired BESS installations may continue to increase, the size of the projects installed by C-46 contractors are well less than the 80 kWh proposed by this rulemaking. Consequently, C-46 contractors that presently perform BESS installations will continue to be able to perform BESS installations even after the proposed rule is adopted.

    - CSLB records show that as of December 1, 2022, there were 148,619 licensed contractors authorized to take a contract to self-perform or subcontract to the appropriate license classification, in the appropriate circumstances, a PV-paired BESS system in accordance with their license classification. This included 15,086 "A" General Engineering contractors, if the contract is in connection with a fixed work requiring special engineering knowledge or skill (BPC section 7056); 105,187 "B" General Building contractors, if the contract requires two or more unrelated trades in addition to framing and carpentry (BPC section 7057); as well as 27,043 C-10 Electrical Contractors; and 1,303 C-46 Solar Contractors. This amounts to nearly 63% of the overall CSLB license population who were authorized to contract for the installation of PV-paired BESS in specified circumstances. All 148,619 have met the contractor license experience requirements of section 825 of Article 3 of Division 8, Title 16 of the CCR or qualified for licensure using one of the license waiver or additional classification statutes in BPC sections

7065.1, 7065.2, 7065.3, or 7065.4. These totals include the previously identified 481 C-46 Solar Contractors holding no other license classification authorizing them to install PV-paired BESS.

- Qualified solar workers and certified electricians are available to install PV-paired BESS over the near and long term. The UC Berkeley Report analyzed the economic impact of alternative licensing scenarios on this topic (UC Berkeley Report, pp. 76-82). UC Berkeley analyzed the availability of certified electricians and PV installers (the workers who may perform PV-paired BESS installations as employees of licensed contractors) and found as of March 2021 in California, there were 36,550 certified electricians, 11,423 electrical trainees, 72,870 electricians, 4,740 electrician helpers, 4,970 solar installers, and 74,255 solar jobs (*Id.*, p. 81). The UC Berkeley Report concluded the workforce, whether C-10 or C-46 employers, is "plentiful," can expand with demand, and that an outright preclusion of C-46 employers from installing BESS would have no adverse economic impact: "There is no evidence to suggest that workforce availability will limit the growth of BESS installations if CSLB were to restrict or exclude sole license C-46 contractors since C-10 vastly outnumber C-46 contractors both in general and specifically in their participation in BESS projects." (*Id.*, pp. 81, 90, 96.)

- The UC Berkeley Report (pp. 82-94) also studied whether a change in the scope of the C-46 license would have adverse impacts on the cost of BESS and whether it would impede the growth of the industry, using national and state data sets. On this issue, UC Berkeley studied cost differentials between the two data sets, cost differentials between contractors with different licenses in California, the effect on cost differentials if a BESS restriction on C-46 contractors changed the solar workforce, the impact of cost differentials on consumer demand, the costs of training and turnover, and the transition costs for alternative regulatory thresholds. (*Ibid.*) On these issues, the UC Berkeley Report concluded the following:

    - No significant savings in project costs with installations performed by C-46 Solar Contractors holding no other license class, due to labor costs being a small percentage of the total cost for BESS installation, whether performed by certified electricians or solar installers. In fact, even at the extreme—if all installations were performed by the more expensive contractor and worker, which is an unrealistic scenario—it would amount to an overall project cost increase of 1-2%, which "is unlikely to slow or reduce consumer demand." (UC Berkeley Report, pp. 82, 85, 86.) "[A]n increase in wages, if it in fact occurs, is unlikely to change consumer behavior or dampen demand for BESS." (*Id.* p. 90.)

- The least expensive BESS installations are performed by contractors that have both C-10 and C-46 license classifications.

- Transition costs of precluding C-46 Solar Contractors from installing BESS outright (which these regulations do not propose) would be minimal because C-46 Solar Contractors holding no other license classification and their workforce install such a small number and percentage of BESS in California. (UC Berkeley Report, pp. 92-94.)

- UC Berkeley found there will be no adverse economic impacts in precluding the C-46 license from installing BESS entirely, finding this to be true for both the residential and commercial market and for urban and rural counties. (UC Berkeley Report, pp. 11-12, 96.)

- The UC Berkeley Report raised a number of different economic and consumer demand related issues on the topic of outright preclusion of C-46 Solar Contractors from installing BESS (which again, these regulations would not do).

    - In particular, UC Berkeley studied the labor costs of transitioning to an all-solar installer or all-certified electrician work force (laborers versus state-certified electricians) and found a "very small cost differential that is unlikely to slow or reduce consumer demand" in California. (UC Berkeley Report, p. 82.) The UC Berkeley Report buttresses this finding with a conclusion based on national data that storage customers are not particularly cost-sensitive. (*Id.*, p. 89.)

    - UC Berkeley also studied the impact on C-46 and C-10 workforce should there be an outright preclusion of C-46 from installing BESS. In evaluating solar incentive data for commercial, government/education, multifamily, nonprofit, and residential sectors, UC Berkeley found if there is an increase in wages, it is unlikely to change consumer behavior, dampen demand for BESS, and will "certainly not" impair the impact of subsidies and incentives available to consumers installing this technology. (UC Berkeley Report, p. 90.)

Need for Environmental Review

The California Environmental Quality Act (CEQA) directs that long-term protection of the environment be a guiding criterion in public decisions. (Public Resources Code, § 21001, subd. (d).) CEQA applies to "projects," defined in Public Resources Code section 21065 as "an activity which may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, and which is (a) An

activity directly undertaken by any public agency. (b) An activity undertaken by a person which is supported, in whole or in part, through contracts, grants, subsidies, loans, or other forms of assistance from one or more public agencies. [or] (c) An activity that involves the issuance to a person of a lease, permit, license, certificate, or other entitlement for use by one or more public agencies." An activity that is not a "project" is not subject to CEQA. (CCR, tit. 14, § 15060, subd. (c)(3).)

The Proposed Regulations are Not a "Project" subject to CEQA

CSLB preliminarily believes that the proposed regulations are not a "project" within the meaning of Public Resources Code section 21065. While the proposal addresses the work that may be performed by contractors holding C-10 or C-46 licenses, it does not pertain to the issuance of licenses or other entitlements for use to persons, as understood and applied in the context of CEQA. In addition, there is no evidence that the proposed regulations, if adopted, "may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment."

One stakeholder has posited the proposed regulations may have an indirect environmental impact based on the following chain of logic related to the social and economic effects of the proposal: (1) the proposed restriction on C-46 licenses will remove a significant number of contractors and qualified workers from the market of businesses that install BESS; (2) hiring contractors with C-10 licenses is a more expensive option than hiring contractors with C-46 licenses; (3) there's a shortage of qualified C-10 license holders and their workers relative to the anticipated demand for BESS; (4) it is more expensive for aspiring contractors to qualify for a C-10 license or certification as an electrician by the Division of Labor Standards Enforcement ("DLSE"); (5) the combination of higher costs and shortage of qualified contractors and workers will dissuade consumers from installing BESS; (6) as a consequence, consumers will remain dependent on fossil fuel energy sources for some or all of their energy needs; and (7) this in turn will result in more harmful pollution to the environment.

This argument is based on flawed premises, is wholly speculative, and is predicated entirely on social and economic factors that were exhaustively studied and analyzed in the UC Berkeley Report.

At the outset is an assertion about the scope of the proposed regulation—that it will prohibit C-46 contractors from repairing BESS or retrofitting existing PV systems with BESS. This assertion misapprehends the current state of the law. As discussed above, current law already prohibits C-46 contractors from performing all manner of BESS work, including BESS installations, except as necessary to install (not retrofit) a PV system. The proposed regulation does not change, but preserves, the existing classification restriction by permitting C-46 contractors to install BESS with the installation of a PV system.

The assertion that the proposal will remove a significant number of contractors and qualified workers from the market of businesses that install BESS is contrary to the fact

that C-46 contractors holding no other license classification authorized to install BESS complete only a “tiny fraction” of the overall number of BESS projects and, consequently, "precluding or restricting C-46 (no C-10, A, or B) contractors will have a negligible effect on the current pool of contractors….” (UC Berkeley Report, p. 37.)

It is also contrary to the facts that of the tiny fraction of projects, most BESS installations performed by C-46 license holders are well below the proposed 80 kWh threshold, and that C-46 contractors install BESS within the sizes most commonly found in the residential market, which range between 16.3 kWh and 18.36 kWh, also far lower than the proposed 80 kWh threshold. Thus, the UC Berkeley Report concluded that “neither restricting C-46 contractors from installing BESS nor precluding them altogether would significantly impact the current BESS industry….” (UC Berkeley Report, p. 26.) Indeed, it called a 5 kw / 20 kWh threshold—a threshold much lower than the proposed regulatory threshold here—“the status quo” in terms of the size of BESS that C-46 contractors install. (UC Berkeley Report, pp. 5, 14, 31.)

In addition, the UC Berkeley Report concluded that even if C-46 contractors were completely excluded from the BESS residential marketplace, it might equate to a loss of between 11 and 18 full-time jobs statewide. (UC Berkeley Report, p. 29.) Thus, even if contractors holding only a C-46 license were precluded entirely from installing BESS, which the UC Berkeley Report recommended but this proposal would not do, the number of contractors and workers removed from the BESS market would be insignificant relative to the total number of contractors otherwise eligible to perform this work. Finally, the assertion that the proposed regulation would impact the workforce of dually licensed C-46 and C-10 contractors is also incorrect. The employees of C-10 contractors who engage in the connection of electrical devices need to be certified electricians. This is a Labor Code requirement and this rulemaking does not change it.

The claim that hiring contractors with a C-10 license is more expensive than hiring contractors with C-46 licenses is also speculative and contrary to data studied and analyzed in the UC Berkeley Report. That report found that labor was only a small percentage of the cost of BESS installation, that there were no significant cost differences for BESS installation by C-10 contractors compared to C-46 contractors, and that cost in and of itself was not a primary motivator for a consumer’s decision to install BESS. In fact, the report exhaustively evaluated the stakeholder’s concern that restricting C-46 contractors’ ability to install BESS would add costs and found, in sum, “that these concerns are not borne out by the evidence.” (UC Berkeley Report, p. 89.)

The claimed shortage of C-10 contractors and their certified electrical workers relative to the anticipated demand for BESS is again speculative and contrary to the facts, as well as irrelevant to the question of whether the absence of an 80-kWh threshold will enable the much smaller number of C-46 contractors to meet that demand. “There is no evidence to suggest that workforce availability will limit the growth of BESS installations were CSLB to restrict or exclude sole license C-46 contractors since C-10 vastly outnumber C-46 contractors both in general and specifically in their participation in BESS projects.” (UC Berkeley Report, p. 81.) This faulty premise also necessarily assumes that

C-46 contractors will be excluded from the BESS market because future demand will be at sizes above the 80-kWh threshold, which again, is contrary to the facts that expansion is happening in the residential marketplace at thresholds below 80 kWh. (UC Berkeley Report, p. 20.)

The assertion that it is more expensive for C-46 contractors to qualify for a C-10 license is undoubtedly true—for C-46 contractors without a C-10 license, it would cost a one-time fee of $230 to add a C-10 license. But this is not a logical basis for concluding that C-46 license holders will be driven out of the BESS marketplace by the 80-kWh limitation. Instead, what the available evidence shows is that there will be plenty of demand for BESS below the 80 kWh threshold and the threshold in and of itself will have no bearing on whether overall demands can be met.

As discussed, the contentions about higher costs and a shortage of qualified contractors were exhaustively reviewed and found to be without merit. They are wholly speculative and contrary to the data studied and analyzed in the UC Berkeley Report.

The resulting conclusions that consumers will remain dependent on fossil fuels leading to more pollution of the environment are dependent upon the other elements in the chain of logic that are grounded in faulty premises and speculation rather than discernible evidence, and contrary to actual evidence that has been studied and analyzed in the UC Berkeley Report. Consequently, the stakeholder analysis summarized above does not provide a plausible basis for concluding that these proposals "may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment …." (Pub. Resources Code § 20165.)

<u>The Proposed Regulations Fall Within The "Common Sense" Exemption to CEQA</u>

Even if the proposal would be considered a "project" for CEQA purposes, CSLB preliminarily believes that the proposal is exempt from CEQA requirements under the "common sense" exemption in the CEQA regulatory guidelines at CCR, Title 14, section 15061, subd. (b)(3). That provision exempts projects from CEQA requirements "[w]here it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment[.]"

CEQA defines "environment" as "the physical conditions which exist within the area which will be affected by a proposed project, including land, air, water, minerals, flora, fauna, noise, objects of historic or aesthetic significance." (Pub. Resources Code § 21060.5.) "'Significant effect on the environment' means a substantial, or potentially substantial, adverse change in the environment." (Pub. Resources Code § 21068.) Economic and social effects are not by themselves significant effects on the environment absent a direct causal connection between those effects and the physical environment. (CCR, tit. 14, §§ 15131, 15382; *Chico Advocates for a Responsible Economy v. City of Chico* (2019) 40 Cal.App.5th 839 at 847-8.)

Application of the common sense exemption is determined from the available facts, with the agency bearing the burden of showing that it applies. (*Muzzy Ranch Co. v. Solano County Airport Land Use Commission* (2007) 41 Cal.4th 372, 386.) CSLB proposes to make safety-based modifications to the C-10 and C-46 license classifications. License classification standards do not cause direct physical changes in the environment, nor is there evidence to suggest that they may indirectly cause a significant effect on the environment.

As noted in the preceding section, one stakeholder has posited a chain of factors which, if all prove to be true, may alter the behavior of potential users of BESS, not by changing their behavior in ways that are harmful to the environment, but by not changing their behavior, or not changing it quickly enough, to align with the state's clean energy goals.

However, the showing required to overcome the exemption cannot be founded upon "any possibility of an environmental impact, however remote or outlandish[.]" (*Davidon Homes v. City of San Jose* (1997) 54 Cal.App.4th 106, 118.) And as discussed, the factual predicates for this outcome are speculative, not grounded in fact, and instead are refuted by the evidence that was exhaustively studied and made part of the record of this rulemaking.

Based on the studies referenced above, CSLB believes that this proposal is in alignment with fact, the state's solar policy, and with where the market is headed, including by ensuring greater skill and safety for BESS installations. Accordingly, CSLB believes it can determine with certainty there is no possibility the proposed regulations may have a significant effect on the environment.

Specific Technologies or Equipment:

This regulation does not mandate the use of specific technologies or equipment.

Consideration of Alternatives:

CSLB has made an initial determination that no reasonable alternative to the regulatory proposal would be more effective in carrying out the purpose for which the action is proposed.

The Board initially voted to preclude C-46 Solar Contractors from installing BESS entirely, consistent with the analysis and conclusions in the UC Berkeley Report. However, out of concern over possible, albeit minimal, impacts among C-46 contractors, CSLB looked into alternatives and eventually proposed adoption of the 80-kWh threshold. CSLB believes this threshold is consistent with the practice among C-46 contractors and which experience shows does not pose an undue safety risk.