

## DOCKETED

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*Comment Received From: Jenny Berg*

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**BayREN Comments to Rulemaking on 2019 Building Energy Efficiency Standards**

*Additional submitted attachment is included below.*



March 5, 2018

Commissioner Andrew McAllister and Energy Commission Staff  
California Energy Commission Dockets Office MS-4  
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Re: Docket No. 17-BSTD-02

Dear Commissioner McAllister and Energy Commission Staff,

The San Francisco Bay Area Regional Energy Network (BayREN) appreciates the opportunity to comment on the California Energy Commission (CEC)'s draft 45-day Express Terms for the 2019 Building Energy Efficiency Standards. The BayREN is a collaboration of the nine counties that make up the Bay Area. Led by the Association of Bay Area Governments (ABAG)/the Metropolitan Transportation Commission (MTC), BayREN designs and implements effective energy savings programs on a regional level and draws on the expertise, experience, and proven track record of Bay Area local governments to develop and administer successful regional and local climate, resource, and sustainability programs. The BayREN provides the regional infrastructure needed for efficient delivery of energy efficiency programs throughout the Bay Area. Our specific comments are as follows.

**Part 1 Section 10; 10-115 - Community Shared Solar or Battery Storage Systems**

BayREN is supportive of the 2019 proposed requirements for mandatory rooftop solar for new low-rise residential construction. As this provision is both ambitious and new, it is essential to allow considerable flexibility so that the Commission, local officials and communities, and industry can benefit from this requirement without unintended consequences and so that all projects have reasonable paths to compliance.

Additionally, BayREN supports the Commission's proposal to allow community shared solar electric generation systems to be an option for achieving compliance with the rooftop solar requirements. However, we are concerned that the current proposed requirements for

community shared solar make that option difficult or impossible for local building departments to implement and enforce, particularly in developed urban areas. In addition, from a local government perspective, the proposed language has the potential to create tensions with housing affordability, which is a critical issue in the Bay Area. Therefore, we ask that the Commission allow itself and local jurisdictions greater flexibility to approve alternative compliance paths that help facilitate California's implicit motivation for mandating solar: ensuring our housing stock is powered with renewable electricity.

To illustrate where additional flexibility would be necessary, we ask the Commission to consider the following scenario:

A 3-story multi-unit residential is proposed on an urban infill lot. The roof of the proposed project is not shaded by existing buildings or other features. Current zoning allows parcels to the south and west to construct buildings substantially taller than the proposed project, and the adjoining parcels are expected to be redeveloped in the next 2-3 years. No entity within the jurisdiction offers community shared solar, and (for any reason) the housing developer does not own an existing asset capable of hosting community shared solar.

In this scenario, which we expect would be not uncommon in urban areas statewide, the developer would likely be forced by the proposed requirements to negotiate with neighboring property owners and potentially delay construction to avoid having to install rooftop solar panels which would be ineffective in only a few years. As a result, these requirements as proposed would create considerable uncertainty, delay, and possibly even inability to propose a cost-effective code-compliant project.

We therefore recommend that the Commission allow flexibility to approve equivalent local approaches in addition to community shared solar. The Commission should, for example, have sufficient leeway to approve:

- Investor Owned Utility (IOU), Public Owned Utility (POU), or Community Choice Aggregation (CCA) programs that supply renewable generation via feed in tariff;
- Pre-payment of the marginal cost of grid-supplied 100% renewable energy from a Commission-approved program (IOU, POU, CCA, or other) for a period equivalent to the expected useful life of rooftop solar;
- Either of the above in combination with installation of energy storage configured to provide greater grid harmonization benefit than prescriptive compliance via solar alone; or
- Other contractual and programmatic options that arise to provide equivalent benefits for renewable energy and/or energy storage.

The alternative contractual or programmatic compliance options could potentially offer more streamlined enforcement and verification mechanisms compared to enforcement and verification of rooftop solar or community shared solar.

**Topic:** Granting the Executive Director and the Commission flexibility in Section 10-115 to approve equivalent mechanisms for providing renewable energy and/or energy storage as may arise, in lieu of rooftop solar or community shared solar.

45day\_Express\_Terms referenced: 10-115(a); 10-115(b); 10-115(c).

Comment: To ensure flexible options to meet on-site solar generation requirements, BayREN requests additional language in:

10-115(a) to include "To be approved the community shared solar electric generation or community shared battery storage system shall meet the following requirements or their equivalent as determined by the Executive Director."

10-115(b) to include "Any entity may apply to the Commission for approval to administer a community shared solar electric generation or community shared battery storage system to provide partial or total compliance with the onsite solar electric generation system and/or battery storage system required by Section 150.1(b)2 of Title 24, California Code of Regulations, Part 6 or any program consistent with applicable law which a local agency or the Executive Director proposes as substantially equivalent or superior in the provision of renewable energy, energy storage, and cost effectiveness."

10-115(c) to include: "Community shared solar electric generation systems and/or community shared battery storage systems, which demonstrate to the Commission's satisfaction that all of the requirements specified in Section 10-115 will be met, shall be approved. Programs which demonstrate substantial equivalence as noted in 10-115(b) may also be approved."

**Topic:** Clarifying that "other community shared renewable systems" are addressed and incorporated throughout Section 10-115.

45day\_Express\_Terms referenced: 10-115(a).

Comment: Currently this section references "A community shared solar system, other community shared renewable system, community shared battery storage system, or combination of the aforementioned systems (hereinafter referred to as a community shared solar or battery storage system)". Further language throughout Section 10-115 references "community shared solar electric generation system and/or community shared battery storage system." For continuity throughout Section 10-115 and clarity that other community shared renewable systems, including existing renewable electric generation facilities, would meet the requirements of Section 10-115, BayREN requests additional language in:

10-115(a) to include "A community shared solar system, other community shared renewable system made up of renewable electric generation facilities as

*defined in California Public Resources Code Section 25741(a), community shared battery storage system, or combination of the aforementioned systems (hereinafter referred to as a community shared solar electric generation system and/or battery storage system)”*

**Topic:** Clarifying that requirements for onsite solar electric generation systems as discussed in Section 10-115 are applicable to new residential construction only.

45day\_Express\_Terms referenced: 10-115(a).

Comment: Currently this section references “onsite solar electric generation system and/or battery storage system that is otherwise required by Section 150.1(b)2”. In the 45-day express terms, Section 150.1(b)2 establishes performance standards for additions and alterations for existing buildings. BayREN requests edits to:

10-115(a) indicating that these Community Shared Systems are intended to offset an “onsite solar electric generation system and/or battery storage system that is otherwise required by Section 150.1(b)1”.

### **Section 150.1(b)1; 150.1(c)14 – Solar Electric Generation Design Rating, Prescriptive Photovoltaic Requirements, & Exceptions**

BayREN is supportive of the 2019 proposed requirements for mandatory rooftop solar for new residential construction. However, BayREN also wants to ensure that the requirements and exceptions for solar photovoltaic systems between the performance and prescriptive paths are as consistent as possible in order to improve enforceability at the local level.

**Topic:** Providing consistency between the prescriptive and performance paths in terms of exceptions to mandatory rooftop solar for projects with limited solar access.

45day\_Express\_Terms referenced: 150.1(b)1; 150.1(c)14

Comment: For a low rise residential new construction project with limited solar access, the solar photovoltaic requirements as currently written would require the project to be built according to the prescriptive approach (and utilize Exception 1 to Section 150.1(c)14) or be connected to a community solar system (and be built according to the performance approach). This seems to establish an inconsistent standard for sites with limited solar access: build prescriptively without solar, or build based on performance with the additional requirement of community solar. In addition, without changes similar to those recommended above, BayREN is concerned about the practical usability of the community solar path in developed areas.

BayREN recommends that the proposed 2019 Code be amended to provide consistent treatment for the prescriptive and performance paths. This could be done by requiring the use of community solar under the prescriptive path, which

BayREN would only recommend if the community solar requirements are also adjusted as proposed above. Alternatively, the exemption for sites with limited solar access could be applied to buildings using both the prescriptive and performance paths.

**Section 150.1(b); 150.1(c)8; 150.2(a)1.D; 150.2(a)2; and 150.2(b)1.H.iii - Domestic Hot Water Heating Systems**

BayREN is supportive of the 2019 proposed changes to expand the range of options to install electric heat pump water heaters in new and existing residential construction. BayREN encourages the Commission to ensure that efficient electric water heating technology can readily be utilized under any compliance path for any low-rise residential building - prescriptive or performance, and new construction or alteration. We are encouraged by CEC’s commitment at the February 5<sup>th</sup> workshop to expand compliance options for electric water heating. We strongly applaud these efforts, and encourage the Commission to release draft code revisions, supporting guidance, and compliance software improvements as soon as possible so that this guidance can be considered within the context of the 2019 rule making. BayREN summarizes our concerns in the table below, and provides specific suggestions in the comments that follow.

	<b>New Construction</b>	<b>Alterations/Additions</b>
<b>Single Dwelling Unit with Individual Water Heater</b>	Compliance Path: Prescriptive Section(s): 150.1(c)8.A.iii and iv Concern: Current language limits installation of storage tank for a heat pump water heating system to a garage or conditioned space	Compliance Path: Prescriptive Section(s): 150.2(a)1.D; 150.2(b)1.H.iii.b; 150.2(b)1.H.iii.c Concern: Current language limits installation of storage tank for a heat pump water heating system to a garage or conditioned space
	Compliance Path: Performance Section(s): 150.1(b) Concern: Compliance software needs to allow for an independent electric baseline for water heating	Compliance Path: Performance Section(s): 150.2(a)2; 150.2(b)2 Concern: Compliance software needs to allow for an independent electric baseline for water heating
<b>Multiple Dwelling Units with Central Water Heating System</b>	Compliance Path: Prescriptive Section(s): 150.1(c)8.B Concern: Current language only allows gas or propane central systems and does not allow a path for the Executive Director to	Compliance Path: Prescriptive Section(s): 150.2(a)1.D Concern: Current language limits installation of storage tank for a heat pump water heating system to a garage or conditioned space

	<b>New Construction</b>	<b>Alterations/Additions</b>
	approve an electric water heating system of equal performance	
	Compliance Path: Performance Section(s): 150.1(b) Concern: Compliance software needs to allow for an independent electric baseline for water heating and should accommodate options for modeling a central electric water heating system	Compliance Path: Performance Section(s): 150.2(a)2; 150.2(b)2 Concern: Compliance software needs to allow for an independent electric baseline for water heating and should accommodate options for modeling a central electric water heating system

**Topic:** Supporting a prescriptive option for electric heat pump water heaters in new construction and additions/alterations without limiting options for the installation location.

45\_Express\_Terms referenced: 150.1(c)8.A.iii; 150.1(c)8.A.iv; 150.2(a)1.D; 150.2(b)1.H.iii.b; 150.2(b)1.H.iii.c.

Comment: BayREN supports the proposal to add a prescriptive compliance path for electric heat pump water heaters serving individual dwelling units for low-rise residential new construction, additions, and alterations. BayREN, however, requests changes to the proposed language to allow for greater flexibility in design and installation while still meeting the manufacturer’s specifications for installation. This request is particularly important in existing homes, where water heaters are found in locations such as basements and unconditioned mechanical sheds. BayREN requests CEC add language that would make these and similar locations eligible for the prescriptive approach with edits to:

150.1(c)8.A.iii, 150.1(c)8.A.iv, 150.2(b)1.H.iii.b, and 150.2(b)1.H.iii.c. to include: “the storage tank shall be located in the garage or conditioned space *not be located outdoors and shall meet heat pump water heater manufacturer’s requirements for ventilation.*”

**Topic:** Enabling a potential prescriptive option for central electric heat pump water heating systems serving newly constructed multiple dwelling units.

45\_Express\_Terms referenced: 150.1(c)8.B.

Comment: Currently, this section limits the prescriptive path for central water heating systems serving multiple dwelling units to eligible gas or propane water heating systems. BayREN requests adding the potential for a prescriptive compliance path for central heat pump water heating using a similar approach for



Executive Director approval as offered in Section 150.2(b)1(H).iii.e. BayREN requests edits to:

150.1(c)8.B to include an additional section for "A water-heating system determined by the Executive Director to use no more energy than that used by the system specified in 150.1(c)8.B.i."

**Topic:** Allowing for the performance approach for new construction, additions, and alterations to use an electric water heating baseline independent of propane or the availability of natural gas, and enabling effective modeling for central electric water heating systems.

45\_Express\_Terms referenced: 150.1(b);150.2(a)2; and 150.2(b)2 generally.

Comment: Given the proposed prescriptive path to allow installation of a single heat pump water heater serving an individual unit, BayREN requests options be added to the Standards, the Alternative Calculation Method, the compliance manuals, and the compliance software that would provide a fully independent baseline for electric water heating. This should be available without any compliance penalty regardless of whether gas is available if based upon a NEEA Tier 3 heat pump water heater's performance, thereby leveling the "compliance" playing field for all-electric buildings.

Comment: Specific to central water heating systems serving multiple dwelling units, BayREN requests the Commission provide guidance and supporting options within the compliance software to enable central electric water heating systems to be effectively modeled. Currently, the compliance software only allows gas water heating systems to be modeled for central systems. This change, along with BayREN's requested changes to the language in Section 150.1(c)8.B that would allow for a central "water-heating system determined by the Executive Director to use no more energy than that used by the system specified in 150.1(c)8.B.i.", would provide multiple compliance paths for all-electric buildings with multiple dwelling units.

We appreciate the opportunity to provide this input, and thank the CEC for its careful consideration of BayREN's comments.

Respectfully Submitted,



Gerald L. Lahr

Assistant Director – Energy Programs