

To: Dockets Office, California Energy Commission
From: Gary Farber, Farber Energy Design
RE: Comments on 45 Day Language Express Terms – 2013 Title 24 Part 11
Green Building Standards
Docket number 12-BSTD-1

DOCKET	
12-BSTD-1	
DATE	MAR 23 2012
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APPENDIX A4 - RESIDENTIAL VOLUNTARY MEASURES

Division A4.2 New Construction

- 1. Prerequisites.
- D. High efficacy exterior lighting.

Questions:

- a) Should the term “outdoor” be used instead of “exterior” to match other sections of the code?
- b) Can lighting not attached to the building be included?
- c) If larger multi-family low-rise projects will now be subject to the “NR” outdoor lighting requirements, ought there be a mention of the 90% requirement for outdoor lighting under this Residential section?

E. Maximum Hot Water Pipe Volume.

Question: Are these efficiency measures compatible with large DHW systems serving multiple dwelling units?

2. Performance Standard.

Comment: The KWH restriction should either be on a “per dwelling unit” basis, or the KWH restriction should be limited to single-family homes.

Division A4.2 Additions and Alterations

3. Prerequisites.

Comments:

- a) At C. and D., indoor and exterior lighting, the word “new” should be inserted to clarify that these requirements only apply to new lighting.
- b) The term “Exterior” should change to “Outdoor”.
- c) Because there is no ‘B’ listed, the C. and D. should be changed to B. and C.

2. Performance Standard.

- a) Clarify whether all additions and alterations must comply with Performance. Or does the efficiency requirement only apply to projects that comply with the Performance approach? In our experience, almost no additions, when modeled independently of the existing house area, meet the Performance budget. Therefore, if Performance compliance was required for any addition, it would likely create the necessity of modeling the entire house, regardless of how small the addition, and how large the existing house.

Suggestion: Allow any project that does not include a new mechanical systems to meet Prescriptive compliance, with no efficiency requirement exceeding Title 24.

- b) The 5% for Tier I and 10% for Tier II efficiency targets are insufficiently stringent when multiple new mechanical systems are being installed. Please consider the following alternative:

New Mechanical Systems	Tier I	Tier II
none	0	0
one	5	10
two or more	10	15

Mechanical systems defined as space heating, space cooling, and domestic water heating devices. Location that new mechanical system serves would not be relevant (i.e. whether it serves addition only, existing house area only, or some or all of both areas).

NONRESIDENTIAL (including high-rise residential and hotel/motel)

1. Prerequisites.

- Clarify that the Prerequisite section applies to both New Construction and to Additions and Alterations.
- At A. Outdoor Lighting and B. Service Water Heating in Restaurants, the word “new” should be inserted to clarify that these requirements only apply to new lighting and new water heating systems.
- B. Service Water Heating: The efficiency should be expressed in Recovery Efficiency and in Energy Factor, to match the values used in Title 24 water heater modeling (unless these values are changing to “thermal efficiency” for the ’13 Standards).

2. Performance Standard.

- Clarify the language to indicate that this standard applies to new construction, to additions, and to alterations.
- It is vital that the efficiency requirement correspond to practical limits, which depend on what building type and Title 24-regulated building elements are included in the project. The following suggested efficiency levels are based on professional experience with Nonresidential Performance compliance since the inception of this compliance method. The propose values also acknowledge that a) Indoor lighting is typically around 25% of a building’s Title 24 measured energy use, and b) the 2013 Standards will be measurably more stringent than the 2008 Standards in many areas, reducing opportunities to gain measurable efficiency beyond the Standards Performance energy budgets.

NONRESIDENTIAL NEW CONSTRUCTION AND ADDITIONS

Building type/scope	Efficiency Level
Nonresidential full build-out (i.e. complete indoor lighting and mechanical systems)	10

High-Rise Residential, Hotel/Motel full build-out (i.e. complete indoor lighting and mechanical systems)	7
Nonresidential, High-Rise Residential, Hotel/Motel: shell and mechanical. Either no lighting, or only common area lighting in a tenant lease space building.	5
Nonresidential: shell and lighting. Mechanical either from existing building system or from central (district) plant.	5
High-Rise Residential, Hotel/Motel: shell and lighting. Mechanical either from existing building system or from central (district) plant.	0
Nonresidential, High-Rise Residential, Hotel/Motel: envelope only	0

NONRESIDENTIAL ALTERATIONS

Building type/scope	Efficiency Level
Fenestration changes, over 50% lighting replaced, one or more new space conditioning systems.	8
Fenestration changes, none or less than 50% lighting replaced, one or more new space conditioning systems.	4
Fenestration changes, over 50% lighting replaced, no new space conditioning system.	4
Fenestration changes, none or less than 50% lighting replaced, no new space conditioning system.	0
No fenestration change. Performance compliance not required.	n/a

Note: Where buildings include a mix of the above building types that are subject to a single performance efficiency calculation (for example: retail and high-rise residential), the required efficiency will be an area-weighted average of the designated efficiency target for each building type.

Lighting Tenant Improvements.

Comment: These are not addressed in the current draft. This is an overlooked opportunity to create additional energy savings.

Proposal: Create a new section **3. Lighting Tenant Improvements**. Where lighting improvements are part of an alteration that includes envelope and/or mechanical alterations, compliance shall be under the Performance approach. However, where new indoor lighting is being installed in an existing building, where there are no envelope changes and no new space conditioning equipment serving the subject space, the lighting power shall be 90% of the Prescriptive approach allowed lighting power.