

STATE OF CALIFORNIA
GOVERNMENT OPERATIONS AGENCY
CALIFORNIA BUILDING STANDARDS COMMISSION
2525 NATOMAS PARK DR., SUITE 130
SACRAMENTO, CA 95833
(916) 263-0916 Phone
Email: cbsc@dgs.ca.gov

Office Use Item No. _____

PARTICIPATION COMMENTS FOR THE NOTICE DATED SEPTEMBER 11, 2015
Written comments are to be sent to the above address.

WRITTEN COMMENT DEADLINE: OCTOBER 26, 2015 (no later than 5:00 pm)

Date: October 26, 2015

From:

Name (Print or type) (Signature)

California Statewide Utility Codes and Standards Team

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Agency, jurisdiction, chapter, company, association, individual, etc.

Street City State Zip

Email address Phone number

We **do not** agree with:

- The Agency proposed modifications As Submitted on Section No. 4.304.2, 4.304.3, 4.304.4, 5.304.1, 5.304.3, 5.304.4,

and request that this section or reference provision be recommended:

- Approved Disapproved Held for Further Study **Approved as Amended**

Suggested Revisions to the Text of the Regulations:

The proposed changes to the 2013 CALGreen code proposed by the California Statewide Utility Codes and Standards Team (Utility C&S Team) are marked with red double underline for additions and ~~double strikethrough~~ for deletions. Changes proposed by CBSC and HCD are marked with single underline and ~~single strikethrough~~ consistent with the Express Terms (CBSC August 20, 2015 document marked and HCD document marked August 19, 2015) released for the 45-day public comment period ending on October 26, 2015.

Each of the changes proposed by the Utility C&S Team meets the criteria of HEALTH & SAFETY CODE SECTION 18930(a)1-8. In particular, the changes do not conflict with existing laws and are consistent with the recently updated Model Water Efficient Landscape Ordinance (MWELO). In summary, these proposed changes will increase the efficiency of landscape irrigation systems, improve consistency with the updated MWELO, and

improve compliance with CALGreen. This combined package would also help respond to Governor Brown's January 2014 declaration of a drought State of Emergency, the April 1, 2015 Executive Order (B-29-15) mandating improved efficiency for new landscape irrigation systems, and statewide water and energy efficiency goals. Given the drought emergency, adoption of the building standards based on the recommendations described in this public comment form is in the interest of the public.

CHAPTER 4 RESIDENTIAL MANDATORY MEASURES

~~4.304.1~~ **4.304.2 Irrigation controllers.** Automatic irrigation system controllers shall be installed for new development projects with an aggregate landscaped area equal to or greater than 500 square feet, and rehabilitated landscape areas greater than 2,500 square feet and provided by the builder and installed at the time of final inspection shall comply with the following:

....

Rationale: The MWELO mandates the installation of a landscape irrigation system controller meeting certain requirements (section 492.7(a)(1)(B)). The current CALGreen Code does not require installation of a landscape irrigation system controller. Therefore, the proposed revision is necessary to improve consistency with the MWELO and improve water savings by mandating the installation of an automatic irrigation system controller.

4.304.3 Irrigation System Efficiency Verification. Project applicants for landscapes requiring a building or landscape permit, plan check or design review shall comply with 4.304.3.1 if they are either:

- 1) Newly-constructed landscape of at least 500 square feet; or
- 2) Rehabilitated landscapes of at least 2,500 square feet.

4.304.3.1. The project applicant shall submit an irrigation audit report along with the Certificate of Completion form to the local agency implementing the Model Water Efficient Landscape Ordinance (MWELO) or a locally adopted WELO, and provide a copy to the local building inspector. This report shall include but is not limited to: inspection, system tune-up, system test with distribution uniformity, reporting of overspray or run off that causes overland flow, and preparation of an irrigation schedule for the irrigation controller, including configuring irrigation controllers with application rate, soil types, plant factors, slope, exposure and any other factors necessary for accurate programming.

Note: additional information regarding audits can be found in Title 23 section 492.12 "Irrigation Audit, Irrigation Survey, and Irrigation Water Use Analysis"

Rationale: Inspectors often lack a mechanism to enforce CALGreen landscape irrigation efficiency requirements such as a water budget and a requirement that irrigation controllers installed at time of inspection contain weather or soil-moisture based features. Thus, landscapes at new construction may not comply with water budget requirements. In addition, the US EPA has found that improper programming of landscape irrigation controllers can in some cases increase rather than decrease water use (WaterSense Specification for Weather Based Irrigation Controllers Supporting Statement, 2011).

The recently revised MWELo requires that project applicants provide a landscape irrigation audit report (section 492.12). The proposed CALGreen language would ensure that the report is also provided to local building inspectors to help them verify compliance with CALGreen landscape irrigation controller and water budget requirements.

4.304.4 Irrigation metering device. New landscaped irrigated areas with more than 5,000 square feet shall be provided with separate submeters or metering devices for outdoor portable water use. A landscape water meter may be either:

1. a customer service meter dedicated to landscape use provided by the local water purveyor; or
2. a privately owned meter or submeter.

Rationale: The proposed change would add a mandatory landscape metering requirement, consistent with MWELo section 492.7(a)(1)(A). CALGreen currently contains only a voluntary metering requirement for residential landscapes (A4.306.6). The proposed code revision would base applicability on landscaped area to be consistent with MWELo section 492.7(a)(1)(A) and the proposed code language will allow a privately-owned meter or submeter consistent with the MWELo. Further, metering will allow homeowners and residents to monitor the water efficiency of landscapes, track controller and hardware efficiency over time, and detect leaks in landscape irrigation systems.

CHAPTER 5 NONRESIDENTIAL MANDATORY MEASURES

5.304.1 Outdoor water use in landscape areas ~~2,500~~ 500 square feet or greater. [BSC] When water is used for outdoor irrigation for landscape projects ~~2,500~~ 500 square feet or greater, one of the following shall apply... :"

Rationale: The proposed code language would establish an applicability threshold for the water budget in 5.304.1 that is consistent with the MWELo.

5.304.3.1 ~~5.304.3~~ Irrigation design controller and sensor application. In new nonresidential construction or building addition or alteration with at least ~~1,000 but not more than 2,500~~ 500 square feet of cumulative landscaped area ~~(the level at which the MWELo applies),~~ install irrigation controllers and sensors which include the following criteria, and meet manufacturer's recommendations.

5.304.3.1 ~~5.304.3.2~~ Irrigation eControllers. Automatic irrigation system controllers ~~installed at the time of final inspection~~ shall comply with the following:

...

Rationale: The MWELO mandates the installation of a landscape irrigation system controller meeting certain requirements (section 492.7(a)(1)(B)) for new landscaped areas of 500 square feet or more. The current CALGreen Code contains a higher applicability threshold. Therefore, the proposed revision is necessary to improve consistency with the MWELO and improve water savings by mandating the installation of an automatic irrigation system controller.

5.304.4 ~~Outdoor potable~~ Landscape water use meters. For new water service or for addition or alteration ~~requiring upgraded water service for landscaped areas~~ of at least 1,000 square feet but not more than 5,000 square feet (the level at which Water Code section 535 applies), separate submeters or metering devices shall be installed for outdoor ~~potable~~ water use. A landscape water meter may be either:

1. a customer service meter dedicated to landscape use provided by the local water purveyor; or
2. a privately owned meter or submeter.

Rationale: The current CALGreen code triggers metering if the landscaped area exceeds 1,000 square feet and an upgraded water service is required. The proposed code revision would remove the second requirement because it is inconsistent with MWELO section 492.7(a)(1)(A). The proposed code language would also allow a privately owned meter or submeter consistent with the revised MWELO.

Metering is a key tool for allowing nonresidential property owners and managers to monitor the water efficiency of landscapes, track efficiency of controllers and hardware over time, and detect leaks in landscape irrigation systems.

5.304.5 Irrigation System Efficiency Verification. Project applicants for landscapes requiring a building or landscape permit, plan check or design review shall comply with 5.304.5.1 if a newly-constructed landscaped area is equal to or greater than 500 square feet or a rehabilitated landscape area is equal to or greater than 2,500 square feet.

5.304.5.1 The project applicant shall submit an irrigation audit report along with the Certificate of Completion form to the local agency implementing the Model Water Efficient Landscape Ordinance (MWELO) or a locally adopted WELO, and provide a copy to the local building inspector. This report shall include but is not limited to: inspection, system tune-up, system test with distribution uniformity, reporting of overspray or run off that causes overland flow, and preparation of an irrigation schedule for the irrigation controller, including configuring irrigation controllers with application rate, soil types, plant factors, slope, exposure and any other factors necessary for accurate programming.

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The recently revised MWELO requires that project applicants provide a landscape irrigation audit report (section 492.12). The proposed CALGreen language would ensure that the report is also provided to local building inspectors to help them verify compliance with CALGreen landscape irrigation controller and water budget requirements.

HEALTH & SAFETY CODE SECTION 18930

SECTION 18930. APPROVAL OR ADOPTION OF BUILDING STANDARDS; ANALYSIS AND CRITERIA; REVIEW CONSIDERATIONS; FACTUAL DETERMINATIONS

- (a) Any building standard adopted or proposed by state agencies shall be submitted to, and approved or adopted by, the California Building Standards Commission prior to codification. Prior to submission to the commission, building standards shall be adopted in compliance with the procedures specified in Article 5 (commencing with Section 11346) of Chapter 3.5 of Part 1 of Division 3 of Title 2 of the Government Code. Building standards adopted by state agencies and submitted to the commission for approval shall be accompanied by an analysis written by the adopting agency or state agency that proposes the building standards which shall, to the satisfaction of the commission, justify the approval thereof in terms of the following criteria:
- (1) The proposed building standards do not conflict with, overlap, or duplicate other building standards.
 - (2) The proposed building standard is within the parameters established by enabling legislation and is not expressly within the exclusive jurisdiction of another agency.
 - (3) The public interest requires the adoption of the building standards. The public interest includes, but is not limited to, health and safety, resource efficiency, fire safety, seismic safety, building and building system performance, and consistency with environmental, public health, and accessibility statutes and regulations.
 - (4) The proposed building standard is not unreasonable, arbitrary, unfair, or capricious, in whole or in part.
 - (5) The cost to the public is reasonable, based on the overall benefit to be derived from the building standards.
 - (6) The proposed building standard is not unnecessarily ambiguous or vague, in whole or in part.
 - (7) The applicable national specifications, published standards, and model codes have been incorporated therein as provided in this part, where appropriate.
 - (A) If a national specification, published standard, or model code does not adequately address the goals of the state agency, a statement defining the inadequacy shall accompany the proposed building standard when submitted to the commission.
 - (B) If there is no national specification, published standard, or model code that is relevant to the proposed building standard, the state agency shall prepare a statement informing the commission and submit that statement with the proposed building standard.
 - (8) The format of the proposed building standards is consistent with that adopted by the commission.
 - (9) The proposed building standard, if it promotes fire and panic safety as determined by the State Fire Marshal, has the written approval of the State Fire Marshal.



**Pacific Gas and
Electric Company**[®]



October 26, 2015

Jim McGowan
Executive Director
Building Standards Commission
2525 Natomas Park Drive, Suite 130
Sacramento, California 95833

Subject: CALGreen Landscape Irrigation Efficiency Certification Rulemaking

Dear Mr. McGowan,

This letter comprises the comments of the Pacific Gas and Electric Company (PG&E), Southern California Gas Company (SCG), San Diego Gas and Electric (SDG&E), Southern California Edison (SCE), and Los Angeles Department of Water and Power (LADWP) regarding proposed California Green Building Code (CALGreen) emergency regulations. The signatories of this letter, collectively referred to herein as the California Utility Codes and Standards Team (Utility C&S Team), represent some of the largest energy utility companies in the Western United States, serving over 35 million customers.

The Utility C&S Team supports the efforts of the Building Standards Commission (BSC) to revise CALGreen and reduce the allowable water budget consistent with the July 2015 updated Department of Water Resources (DWR) Model Water Efficient Landscaping Ordinance (MWELo) for residential, nonresidential, and other building types. We also recognize the efforts of the Department of Housing and Community Development and other agencies to make revisions within the code sections that they develop.

We also recommend adopting the three MWELo requirements described below. (We have also provided specific proposed code language in Attachment A). These changes will increase the efficiency of landscape irrigation systems, improving consistency with the updated MWELo, and improve compliance with CALGreen. This combined package would help respond to Governor Brown's January 2014 declaration of a drought State of Emergency;¹ the April 1, 2015 Executive Order (B-29-15) mandating improved efficiency for new landscape irrigation systems;² and statewide water and energy efficiency goals.³ Each of these recommended changes is also consistent with Health and Safety Code section 18930(a) sub-sections 1 through 8.

¹ California Declaration of Drought State of Emergency. January 17, 2014. <http://gov.ca.gov/news.php?id=18379>.

² California Executive Order Number B-29-15. April 1, 2015. http://gov.ca.gov/docs/4.1.15_Executive_Order.pdf. We understand from the May 7, 2015 CALGreen workshop that the intent of EO item 7 is to prohibit inefficient irrigation methods.

³ For instance, California's Global Warming Action Plan calls for more stringent water efficiency standards because twenty percent of the electricity and thirty percent of the natural gas used in California is attributed to water supply, conveyance, treatment, and distribution and use. California Energy Commission. 2015. "CA Existing Buildings Energy Efficiency Action Plan- Draft" Available at: <http://www.energy.ca.gov/ab758/>. Last accessed April 19, 2015.

1) Irrigation System Efficiency Audit

As noted in our prior February 5, 2015 and May 5, 2015 comment letters, the Utility C&S Team recommends requiring that project applicants submit an irrigation audit report for new and expanded landscapes for three reasons. First, a broad consensus of stakeholders has acknowledged at CALGreen and DWR workshops that many jurisdictions historically have not implemented the MWELO. This failure is due largely to a lack of familiarity with the steps needed to comply with the ordinance, and the lack of an available compliance tool. Secondly, the U.S. Environmental Protection Agency (EPA) has found that irrigation controllers, which are currently required by CALGreen, will typically decrease water usage by 15% when properly configured⁴, but can increase water use if not properly configured. The proposed audit will provide a resource for building inspectors to verify the proper installation and configuration of both irrigation equipment and irrigation controllers. Third, this revision will improve consistency with the current the MWELO audit requirement (MWELO section 492.12(c)(1)).

2) Metering New Landscapes

The Utility C&S Team recommends 1) adding a mandatory residential metering requirement to match MWELO section 492.7 (a)(1)(A); and 2) revising the nonresidential CALGreen applicability test for metering in section 5.304.2 so that the requirement applies to all new landscapes over a specified applicability threshold consistent with MWELO section 492.7(a)(1)(A), regardless of whether a new water service is installed.

The first change would provide homeowners with landscape irrigation water usage information to highlight leakage and possible deterioration of landscape irrigation controller and irrigation emission device performance over time. The second change would help business owners track water usage, especially when monitoring water usage is done by landscape maintenance contractors who do not pay the water bill.

3) Applicability Threshold for MWELO implementation

The Utility C&S Team recommends revising the residential and nonresidential CALGreen code to reflect the current MWELO applicability threshold of 500 square feet or more for new development and 2,500 square feet or more for rehabilitated landscapes. This threshold should apply to irrigation system efficiency audits, water budgets, and all MWELO requirements that do not have a separate applicability thresholds (such as metering).

⁴See WaterSense® Specifications for Weather-Based Irrigation Controllers Supporting Statement, v1 November 2011. http://www.epa.gov/watersense/docs/final-controller-supporting-statement_102611_final508.pdf

In conclusion, we would like to reiterate our support for the BSC's efforts to revise the CALGreen standards to reduce water usage and we recommend that BSC also including these three additional MWELO requirements. We thank BSC for the opportunity to participate in this process and encourage BSC to carefully consider the recommendations outlined in this letter.

Sincerely,



Patrick Eilert
Principal, Codes and Standards
Pacific Gas and Electric Company



Sue Kristjansson
Codes & Standards Manager
Southern California Gas Company



Steven M. Long, P.E.
Manager, Energy Codes & Standards
DSM Engineering
Southern California Edison



Chip Fox
Residential Programs and Codes & Standards
Manager
San Diego Gas and Electric Company



Amir Tabakh
Chief of Energy Efficiency Engineering
Los Angeles Department of Water and Power

Enc. Attachment A

Attachment A: Proposed CALGreen Express Terms and Rationale

Note: The proposed changes to the existing (2013) CALGreen code proposed by the Utility C&S Team are marked with double underline and ~~double strikethrough~~. Changes proposed by BSC and HCD are marked with single underline and ~~single strikethrough~~ consistent with the Express Terms (CBSC document marked August 20, 2015 and HCD document marked August 19, 2015) released for the 45-day public comment period ending on October 26, 2015.

CHAPTER 4

RESIDENTIAL MANDATORY MEASURES

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Rationale: The MWELO mandates the installation of a landscape irrigation system controller meeting certain requirements (section 492.7(a)(1)(B)). The current CALGreen Code does not require installation of a landscape irrigation system controller. Therefore, the proposed revision is necessary to improve consistency with the MWELO and improve water savings by mandating the installation of an automatic irrigation system controller.

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Rationale: Inspectors often lack a mechanism to enforce CALGreen landscape irrigation efficiency requirements such as a water budget and a requirement that irrigation controllers installed at time of inspection contain weather or soil-moisture based features. Thus, landscapes at new construction may not comply with water budget requirements. In addition, the US EPA has found that improper programming of landscape irrigation controllers can in some cases increase rather than decrease water use (WaterSense Specification for Weather Based Irrigation Controllers Supporting Statement, 2011).

The recently revised MWELO requires that project applicants provide a landscape irrigation audit report (section 492.12). The proposed CALGreen language would ensure that the report is also provided to local building inspectors to help them verify compliance with CALGreen landscape irrigation controller and water budget requirements.

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Rationale: The proposed change will add a mandatory landscape metering requirement, consistent with MWELO section 492.7(a)(1)(A). CALGreen currently contains only a voluntary metering requirement for residential landscapes (A4.306.6). The proposed code revision would base applicability on landscaped area to be consistent with MWELO section 492.7(a)(1)(A) and the proposed code language will allow a privately owned meter or submeter consistent with the MWELO.

Metering will allow home owners and residents to monitor the water efficiency of landscapes, track controller and hardware efficiency over time, and detect leaks in landscape irrigation systems.

CHAPTER 5

NONRESIDENTIAL MANDATORY MEASURES

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Rationale: The current CALGreen code triggers metering if the landscaped area exceeds 1,000 square feet and an upgraded water service is required. The proposed code revision would remove the second requirement because it is inconsistent with MWELO section 492.7(a)(1)(A). The proposed code language would also allow a privately-owned meter or submeter consistent with the revised MWELO.

Metering is a key tool for allowing nonresidential property owners and managers to monitor the water efficiency of landscapes, track efficiency of controllers and hardware over time, and detect leaks in landscape irrigation systems.

5.304.5 Irrigation System Efficiency Verification. Project applicants for landscapes requiring a building or landscape permit, plan check or design review shall comply with 5.304.5.1 if a newly-constructed landscaped area is equal to or greater than 500 square feet or a rehabilitated landscape area is equal to or greater than 2,500 square feet.

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