



Pacific Gas and Electric Company®



June 26, 2015

Julie Saare-Edmonds  
Senior Environmental Scientist  
California Department of Water Resources  
Urban Water Use Efficiency Unit  
P.O. Box 942836  
Sacramento, CA 94236-0001

**Subject: Model Water Efficient Landscape Ordinance Emergency Regulations**

Dear Ms. Saare-Edmonds,

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 the proposed Model Water Efficient Landscape Ordinance (MWELO) 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 Department of Water Resources (DWR) to revise the MWELO through an emergency rulemaking hearing on July 15<sup>th</sup>, and potentially an additional non-emergency rulemaking. In addition, we recommend increasing the efficiency of landscape irrigation controllers and systems through the recommendations listed below. (We may provide additional comments regarding a non-emergency rulemaking in the future.) These revisions would effectively respond to Governor Brown’s January 2014 declaration of a drought State of Emergency,<sup>1</sup> the April 1, 2015 Executive Order (EO) mandating improved efficiency for new landscape irrigation systems,<sup>2</sup> and statewide water and energy efficiency goals.<sup>3</sup> We expect that first year savings from the proposals below would total approximately 500-1600 million gallons of water during the first year of implementation as well as significant energy savings as shown in Appendix A. We also expect a ten-fold increase in annual water and energy savings likely after ten years of implementation.

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<sup>1</sup> California Declaration of Drought State of Emergency. January 17, 2014. <http://gov.ca.gov/news.php?id=18379>.  
<sup>2</sup> California Executive Order Number B-29-15. April 1, 2015. [http://gov.ca.gov/docs/4.1.15\\_Executive\\_Order.pdf](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.  
<sup>3</sup> 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 and Controller Configuration Audit

As noted in the February 5, 2015 and May 5, 2015 California Green Building Code (CALGreen) proposals, the Utility C&S Team recommends requiring that project applicants for new construction submit an irrigation audit report with specific requirements for new and expanded landscapes. We appreciate DWR's efforts to improve the definition of "irrigation audit report" and recommend that DWR also explicitly revise the MWELO requirements in section 492.12(b)(1) from voluntary to mandatory as follows:

"(1) the project applicant shall submit an irrigation audit report with the Certification of Completion to the local agency that ~~may~~ shall include, but is not limited to: inspection, system tune-up, system test with distribution uniformity, reporting overspray or run off that causes overland flow, and preparation of an irrigation schedule including configuring irrigation controllers such as scheduling and application rates."

The proposed revisions are necessary for two key reasons. First, a broad consensus of stakeholders has acknowledged at CALGreen and DWR workshops that many jurisdictions do not implement the MWELO requirements for irrigation controllers and systems. This failure is due largely to a lack of familiarity with the steps needed to comply with the ordinance, as well as the lack of an enforcement mechanism in the MWELO for the irrigation system efficiency requirement.

In addition, automatic irrigation controllers are currently required by CALGreen Title 24 Part 11 sections 4.304.1 and 5.304.3.1 to have soil or moisture-based shut offs. The US Environmental Protection Agency (EPA) has found that irrigation controllers with these and other features can decrease water usage by 15% when properly configured, and save 110 billion gallons of water and 112 million kilowatt-hours of electricity nationally.<sup>4</sup> However, US EPA also found that irrigation controllers can actually increase water use if they are not properly programmed and the irrigation audit can ensure that the controllers are properly programmed.

## 2) Landscape Irrigation Controller Standby Power Consumption and Features

We recommend that DWR work with the California Energy Commission (CEC) to establish a standby power consumption standard for landscape irrigation controllers as a follow-up to the emergency MWELO update. Irrigation controllers use microprocessors with power supplies for the solenoid valves, and sometimes separately for the controller's electronics (e.g., clocks/timers, memory, and controls/programming functions).

The CEC has established standards for standby power consumption for many other categories of consumer products. However, there is currently no standard for irrigation controller stand-by power. About 90% of a controller's annual energy consumption is from standby mode, and the standby mode power of an irrigation controller can range widely from just under one watt to

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<sup>4</sup> See 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](http://www.epa.gov/watersense/docs/final-controller-supporting-statement_102611_final508.pdf)

<sup>5</sup> Codes and Standards Enhancement (CASE) Initiative for PY2009: Title 20 Standards Development Analysis of

almost ten watts.<sup>5</sup> We also recommend examining the potential benefits of water saving standards based on US EPA WaterSense landscape irrigation controller features.

In conclusion, we would like to reiterate our support for DWR's efforts to revise the MWEL0 and recommend implementing the additional recommendations above. We thank DWR for the opportunity to participate in this process and encourage DWR to carefully consider the recommendations outlined in this letter.

Sincerely,



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



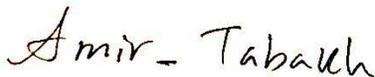
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Enc. Attachment A

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<sup>5</sup> Codes and Standards Enhancement (CASE) Initiative for PY2009: Title 20 Standards Development Analysis of Standards Options for Landscape Irrigation Controllers. August 13, 2009. Amanda Stevens and Teddy Kisch.

## Attachment A: Water Savings Calculations

### 1) Total water savings estimates

Total estimated water savings are shown in Table 1. We expect that first year savings from the proposals below would total approximately 500-1600 million gallons during the first year of implementation, with a ten-fold increase in annual savings likely after ten years of implementation as well as significant energy savings. Assumptions and references are shown in Table 2.

**Table 1: Total Estimated Statewide Water Savings From Standards Proposed by the Statewide Utility Codes and Standards Team**

Property Type	New Developments Subject to MWELO (2017)	landscaped area (million sq ft)	Annual Water Use (gal/yr-sf)	Total Water Use (million gal/yr)	Estimated Savings (million gal/yr)	
					low	high
Single Family Residential	66,200	117,837,000	29.7	3,500	140	440
Multi Family Residential	66,200	91,758,000	29.7	2,700	110	340
Non-Residential	10,528	219,783,000	29.7	6,500	250	820
<b>Total, Year One</b>				<b>12,700</b>	<b>500</b>	<b>1,600</b>

**Table 2: Assumptions and References for Water Savings Estimates**

Metric	Value	Source / Notes
<b>Assumptions</b>		
Baseline compliance	75%	Building Standards Commission staff, May 29 2015 BSC hearing, Sacramento California
Compliance rate with proposed standards	100%	Assumed new compliance rate
Savings from Compliance – low (irrigation controller scheduling only)	15%	WaterSense® Specifications for Weather-Based Irrigation Controllers Supporting Statement, v1 November 2011
Savings from Compliance – high (water efficient landscapes)	50%	US EPA, “Outdoor Water Use in the United States”
Expected construction of single family and multifamily homes, 2017	132,400	Economic and Fiscal Impact Statement for Revisions to the California Building Energy Efficiency Standards. CEC, 2015
Average plot size for single family homes	9,219 sf	DeOreo et. al, 2011. “California Single Family Water Use Efficiency Study.” Aquacraft.
Percent of plot size irrigated for single family homes	39%	DeOreo et. al, 2011. “California Single Family Water Use Efficiency Study.” Aquacraft.
Annual water use baseline, single family residential	29.7 gallons/year-sf	DeOreo et. al, 2011. “California Single Family Water Use Efficiency Study.” Aquacraft.

Annual water use baseline, multifamily residential	41 kgal/household	Hanak and Neumark, 2006. "Lawns and Water Demand in California." Public Policy Institute of California.
Commercial and industrial landscape water use	1 million acre-feet/year	Pacific Institute, 2014. "Urban Water Conservation and Efficiency Potential in California."
Expected growth of California non-residential construction, 2017	2.0%	US Census, 2013. Assumption based on California firm growth