

Comments on Proposition 39

Docket number 13-CCEJA-1

The Proposition 39: California Clean Energy Jobs Act -2013 Program implementation draft guidelines fall far short of optimal solutions and additionally there are conflicts with upcoming codes.

We believe that the recommendations need to be:

1. Technology neutral
2. Performance based
3. Application focused

Specifically considering: classroom lighting: The Pier Lighting Research on classroom lighting completed in 2005 set the ground work for classroom lighting the next generation of California classrooms.

http://www.archenergy.com/lrp/advlight_luminaires/project_4_5_impacts.htm

Today's lighting technologies have significantly advanced the ability to provide better lighting for classrooms than simply putting in 28 watt T-8 lamps in an old light fixture. The research that quantified lighting control systems modeled along the California High Performance Schools criteria are how savings are really achieved. It would be a shame to just have the project examples listed below when there is so much higher, level improvements to be done. Prop 39 offers a chance to update lighting fixtures that were installed decades ago with affordable, high performing lighting fixtures that will last. By re-lamping only, you delay the inevitable task of replacing these outdated luminaires that will continue to deteriorate and will inevitably require replacement.

<u>Lighting Priority</u>	<u>Project Example</u>	<u>Page # Reference</u>
1	Retrofit existing 4 foot and 8 foot T12 fluorescent fixtures with 28-watt T8 lamps.	36
1	Retrofit existing first-generation 32-watt T8 fixtures with 28-watt T8 lamps.	36

Our suggestion would be very similar to the recommendation for Heating, Ventilation and Air Conditioning on Page 37 -

<u>Lighting Priority</u>	<u>Project Example</u>	<u>Page # Reference</u>
1	Replace older (15 years or more) classroom lighting with a CHPS minimum system with a lighting efficiency of 85 lumens per watt.	

We do not think that retrofitting existing first generation 32 Watt T-8 fixtures with 28 Watt T-8 lamps is a good recommendation.

Entire fixture replacements will have greater savings, longer life, less maintenance, better suited for controls. Furthermore with the low wattage 28 watt lamps we may see problems (short life, low efficacy, flickering, poor starting) particularly with the further recommendation of controls in the document. In addition codes and

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standard are advancing dimming and the 2014 title 24 will require it. Most likely future retrofits will be heavily impacted by this recommendation which will require dimming and or switching controls, 28 watt lamps are generally not recommended for controls systems, dimming or occupancy sensors systems. Industry dimming standards (NEMA LL9, IEC 60081) are only for full wattage lamps and so the CEC school recommendation is now in conflict with the dimming efforts the commission has worked so hard on. The industry generally supports full wattage lamps with the addition of controls---you then can specify a lower ballast factor to get your wattage. It's generally understood that your saving will be on the control side here. *Please remove the 28watt lamp recommendation)*

We do not think that Retrofit existing 4 foot and 8 foot T12 fluorescent fixtures with 28-watt T8 lamps is a good recommendation

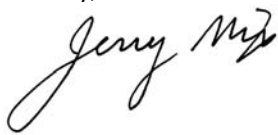
Again - we need to change this- recommend LED conversion kits for 2x4 fixtures, and or entire fixture replacements, again will produce greater savings, longer life, less maintenance, better suited for controls. A significant number of these fixtures will be 20+ years old, and were not designed to maximize the lighting performance and energy efficiency offered by T8 lamps and ballasts. In addition, multiple components on these fixture would have dramatically degraded decades after installation – paint finish, optical quality, reflectivity all are impacted. Further, seismic safety of older fixtures should be carefully reviewed. In addition to replacing the ballast/lamps, you would need to clean the fixtures, replace yellowed or damaged optics, replace lamp holders, and verify hardware integrity at the very least. At this point it will be better to consider an LED system and/or a new fixture.

Replace standard high-bay metal-halide gymnasium fixtures with fluorescent T5 or T8 high-output (HO) fixtures

This recommendation needs to be technology neutral as there are good LED and induction systems that are cost effective and work well. This recommendation should read; Replace standard high-bay metal-halide gymnasium replace with high efficacy fluorescent, LED, or induction with integrated controls

For Proposition 39 there is a need for an education and training program that advances technology neutral “best practices” and one that is based on industry input and experience that will give you great results.

Sincerely,



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