



KYLE PITSOR

Vice President, Government Relations

February 21, 2018

Online via: <https://efiling.energy.ca.gov/EComment/EComment.aspx?docketnumber=17-BSTD-03>

Mr. Payam Bozorgchami
California Energy Commission
Dockets Office, MS-4
Re: Docket No. 17-BSTD-03
1516 Ninth Street
Sacramento, CA 95814-5512

NEMA Comments on 45-day Express Terms 2019 CALGreen Voluntary Provisions Docket 17-BSTD-03

Dear Mr. Bozorgchami,

As the leading trade association representing the manufacturers of electrical and medical imaging equipment, the National Electrical Manufacturers Association (NEMA) provides the attached comments in on the 45-day CALGreen voluntary provisions issued January 18, 2018. These comments are submitted on behalf of NEMA Lighting Systems Division Member companies.

The National Electrical Manufacturers Association (NEMA) represents nearly 350 electrical equipment and medical imaging manufacturers that make safe, reliable, and efficient products and systems. Our combined industries account for 360,000 American jobs in more than 7,000 facilities covering every state. Our industry produces \$106 billion shipments of electrical equipment and medical imaging technologies per year with \$36 billion exports.

Our Member companies count on your careful consideration and we look forward to an outcome that meets their expectations. If you have any questions on these comments, please contact Alex Boesenberq of NEMA at 703-841-3268 or alex.boesenberq@nema.org.

Sincerely,

A handwritten signature in black ink that reads "Kyle Pitsor". The signature is written in a cursive, flowing style.

Kyle Pitsor
Vice President, Government Relations

NEMA Comments on 45-day Express Terms 2019 CALGreen Voluntary Provisions Docket 17-BSTD-03

General Comments:

NEMA disagrees with the proposal to restrict outdoor lighting to correlated color temperatures at or below 3000K as proposed in subject Express Terms. It has become popular to claim that 3000K or lower color temperatures are a cure-all for perceived problems stemming from light at night. Such a position is ill-informed and dismisses research that has proven that other color temperatures can be beneficial to human interaction or security. We list several of these below.

NEMA requests CEC to conduct a more formal review of the available studies and research reports to date regarding CCT and outdoor lighting, rather than simply move to 3000K as proposed in the CALGreen language.

1. A 2014 study done for the Northwest Energy Efficiency Alliance by Clanton Associates¹ indicates differences in human perception and reaction time for CCT's varying between 3500k, 4100k and 5000k for outdoor light sources. The variation in human perception and reaction to different CCTs indicates a need for further study and would seem to caution against precluding selection of CCTs above 3000K if situational needs dictate.
2. A 2017 Frequently Asked Questions presentation from the U.S. Department of Energy's Solid State Lighting Program² indicates several research studies and other references that suggest that shorter wavelength (i.e. higher CCT) visible light can improve detection and reaction times for many situations. These studies include roadway and outdoor lighting particular to vehicle-pedestrian interaction sites and that restricting CCTs for roadway and area lighting might increase the rate of human/vehicle collisions.
3. A hearing of the District of Columbia City Council from May 3, 2017³ provides several observations from local city planners and other studies which suggest that high-CCT lighting reduces vehicle-pedestrian collisions and improves crime prevention and crime investigation efforts by affording better color rendering to witnesses and CCTV systems. The reasonable conclusion is that high-CCT lighting allows for better identification of all objects, to the improvement of crime and safety.
4. At the February 6, 2018 CEC Hearings for the 45-Day Express terms, and in his written comments⁴, consultant Gary Flamm cited several concerns against limiting CCT of outdoor lighting. In particular, he notes a study⁵ performed by the Lighting Research Center of the Rensselaer Polytechnic Institute which explains several misconceptions about light at night and the effects of blue spectrum on humans and animals. We urge the CEC to study this carefully.

¹ <https://neea.org/docs/default-source/reports/seattle-led-adaptive-lighting-study.pdf?sfvrsn=4>

² <https://energy.gov/sites/prod/files/2017/03/f34/Street%20Lighting%20and%20Blue%20Light%20FAQs.pdf>

³ http://dc.granicus.com/MediaPlayer.php?view_id=2&clip_id=3942

⁴ [Gary Flamm Comments Proposed maximum Correlated Color Temperature \(CCT\) for outdoor lighting](#)

⁵ <http://www.lrc.rpi.edu/resources/newsroom/AMA.pdf>

5. The Illuminating Engineering Society has made several public statements against restriction of outdoor lighting CCTs to lower levels⁶.
6. LAM Partners Inc, an architectural firm, caution against jumping to conclusions about the correct CCT for street lighting or taking guidance against high-CCT lighting too seriously.⁷
7. A Google search will turn up numerous similar statements from other respected entities.
8. NEMA recommends that CEC should not propose to restrict outdoor lighting to CCTs below 3000K.

NEMA Proposal: Strike language proposed to clause A5.203.1.1.1 of CALGreen as shown below, to restore the original language.

“A5.203.1.1.1 Outdoor lighting. Newly installed outdoor lighting power shall be no greater than 90 percent of the Allowed Outdoor Lighting Power., ~~and shall have a color temperature no higher than 3000K.~~”

⁶ <https://www.ies.org/policy/position-statements/ies-position-statement-ps-09-17-background/>

<https://www.ies.org/policy/position-statements/ies-board-position-on-ama-csaph-report-2-a-16-human-and-environmental-effects-of-light-emitting-diode-led-community-lighting/>

⁷ <http://www.lampartners.com/2016/06/29/is-led-street-lighting-bad-for-your-health/>