

DOCKETED

Docket Number:	15-AAER-01
Project Title:	Appliance Efficiency Rulemaking for Toilets, Urinals, Faucets, HVAC Air Filters, Fluorescent Dimming Ballasts, and Heat Pump Water Chilling Packages
TN #:	204538
Document Title:	Pierre Delforge Comments: NRDC Comments on 15-day language for fluorescent dimming ballasts
Description:	N/A
Filer:	System
Organization:	Pierre Delforge
Submitter Role:	Public
Submission Date:	5/8/2015 10:50:31 AM
Docketed Date:	5/8/2015

Comment Received From: Pierre Delforge

Submitted On: 5/8/2015

Docket Number: 15-AAER-01

NRDC Comments on 15-day language for fluorescent dimming ballasts

Additional submitted attachment is included below.



NATURAL RESOURCES DEFENSE COUNCIL

NRDC Comments on 15-Day Language for Dimming Fluorescent Ballasts

2015 Appliance Efficiency Pre-Rulemaking Docket Number 15-AAER-1

May 8, 2015

Submitted by:

Pierre Delforge, Natural Resources Defense Council

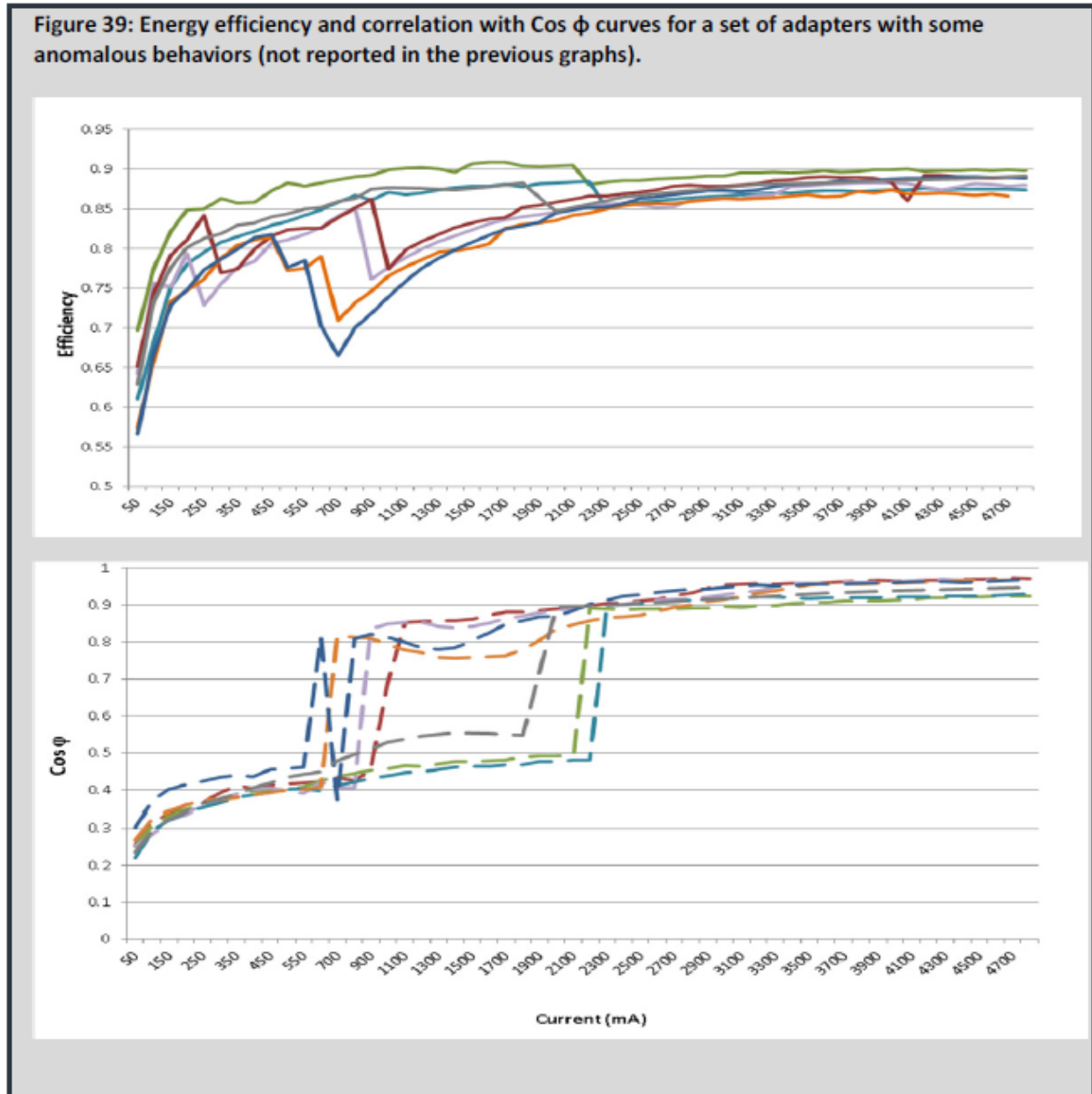
On behalf of the Natural Resources Defense Council and our more than 380,000 members and online activists in California, we respectfully submit these comments on the California Energy Commission's (CEC) 15-Day Language for dimming fluorescent ballasts.

NRDC generally strongly support the adoption of CEC's proposed standards for fluorescent dimming ballasts and air filter labeling. The energy consumption in dimmable fluorescent ballasts and their attached lamps is expected to increase 15-fold to nearly 3,600 GWh/y by 2020 by displacing fixed output ballasts, based on DOE market projections adapted to California and accounting for the effect of Title 24. Of that energy, 20 percent on average is wasted in the ballast itself before ever reaching the fluorescent lamp, and California Investor-owned utilities (IOUs) test data shows differences in efficiency of 5 to 10 percent between dimming ballasts of equivalent function. This makes the efficiency of dimming ballasts an important opportunity for energy efficiency standards.

While we support the adoption of the standards as proposed in the 15-day language, we offer recommendations for future clarifications and enhancements, and encourage the commission to amend the standards at the earliest opportunity in order to improve their effectiveness and maximize energy savings.

CEC should set power factor requirements at 50 and 80 percent of arc power, not just at 100 percent – Not setting power factor requirements at output levels lower than 100 percent opens the door for a potential loophole in the standards, where some ballasts could be designed to turn off power factor correction in order to more easily achieve efficiency requirements at lower output levels, offsetting some of the efficiency savings. This is not just a theoretical possibility, as this behavior was actually observed in external power supplies and documented in

a 2012 GeSI-ITU study¹. Figure 39 illustrates how switching off power factor correction at lower output levels affects efficiency. Allowing dimming ballast manufacturers to do this would offset some of the gain from efficiency standards, particularly in office buildings where the length of wiring causes power factor losses to be significant².



¹ GeSI-ITU 2012: An Energy-Aware Survey on ICT Device Power Supplies

http://www.itu.int/dms_pub/itu-t/oth/4B/01/T4B010000070001PDFE.pdf

² Power Factor Correction: An Energy Efficiency Perspective, [http://standby.iea-](http://standby.iea-4e.org/files/otherfiles/0000/0041/AGO_G3A_PowerFactorCorrection_FINAL_2011_0617-M.pdf)

[4e.org/files/otherfiles/0000/0041/AGO_G3A_PowerFactorCorrection_FINAL_2011_0617-M.pdf](http://standby.iea-4e.org/files/otherfiles/0000/0041/AGO_G3A_PowerFactorCorrection_FINAL_2011_0617-M.pdf)

All ballasts tested by the IOUs were able to achieve a power factor of 0.9, demonstrating that this requirement is feasible and cost-effective today. CEC should specify a 0.9 power factor requirement at all three arc power test points in order to ensure that this level of power factor is not sacrificed for cost-cutting purposes, and that expected energy savings from the standards are effectively realized.

Thank you for your consideration of NRDC's input.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read 'Delforge'.

Pierre Delforge
Director, High Tech Sector Energy Efficiency
Natural Resources Defense Council
111 Sutter St, 20th Floor
San Francisco, CA 94104
(415) 875-6100
pdelforge@nrdc.org