

**Architectural** *Lighting*

March 20, 2007

Mr. Gary Flamm  
Lighting Program lead  
California Energy Commission  
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Dear Mr. Flamm:

I am writing in concern for the changes being considered for the lighting chapter of Title 24. I am much in favor of the government taking an active role in reducing energy and I believe Title 24 has been successful in forcing energy savings. I am in hopes that California can continue to lead the country as an advocate for green building design.

As principal of Ann Kale Associates, a nationally recognized lighting design firm, I have worked on several hundred projects where energy savings was a primary goal. When New York City adopted its first energy conservation protocol in the 1990's five public projects were selected to serve as examples of good energy saving design – three of the projects were designed by Ann Kale Associates.

I have two concerns with Title 24:

**One**

I have always found the practice of using LPD an inefficient method in reducing energy. The goal is simple: reduce energy. Electric energy consumption is measured by wattages X hours. LPD measures only potential energy and says nothing of how long the energy is used. By not including hours of use we eliminate the largest component of wasted energy.

As a lighting designer I can design open corporate space at 1 watt per sq. ft., but only the consumer can truly determine whether the lighting needs to be on or off throughout the course of the day and night. For example, if a space is occupied 10 hours a day but the lighting is allow to be on for 12 we have 20% power wasted. How many hours a week does the average office stay on after most or all workers have left? Title 24 calls for automated controls but has little say in how the controls are set and no say in how they are maintained. It also has very little to say about how much energy is consumed through plug-in power. Only the electric utility company knows how much power is used each month. This makes them the perfect enforcer of energy savings legislation.

Turning lights off in unoccupied space or dimming lamps down to sufficient illumination levels is the single most important item in saving energy. We know this to be true from a 1993 study Ann Kale Associates did for Bankers Trust. The reports included four facilities that totaled over 3.5 million sq. ft. of office space. This finding came at a time when retrofitting inefficient T12 fluorescent lamps and magnetic ballasts to more efficient T8 lamps and electronic ballasts represented big energy savings. The incentive for turning lights off or down can easily be enforced by charging more for power when the consumer

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exceeds their allowance. The energy company has the incentive to complicate their billing system because they are making more money.

If the CEC were to provide consumers with an electric allowance billed at normal rate, then increase the rate for all power consumed above their allowance I'm sure we would see an increased awareness of consumer waste followed shortly by energy savings. All consumers respond to cost and the onus is placed on the consumer to maintain lighting efficiency.

**Two**

Title 24 should not be making lamp source choices for the designer and the consumer. A 37 watt MR16 halogen lamp will do many jobs more efficiently than a 20 watt metal halide. The MR16 is offered in 4 different beam spreads, not 2. It can be dimmed and most importantly, it can be turned on and off quickly. It can also be used for emergency lighting. Title 24's insistence in the LPD forces consumers to use metal halide when it is not the best lamp choice and at considerable initial cost to the owner.

Another example of Title 24 making lamp choices for the consumer is in the residential section. The code really translates into forcing the use of fluorescent lighting. Though fluorescent is a good light source in many instances, the Title's mandate in kitchens does not always save energy. By using too much fluorescent light the consumer is allowed to use the amount on halogen or incandescent lighting needed for the desired effect. I learned this only too well when I designed my own kitchen. I met Title 24 by placing fluorescent uplights on top of my cabinets. I was then allowed to use a high level of halogen downlights and still meet code. But in the end I use very little energy to light my kitchen because I have a large skylight that provides me with an abundance of wonderful daylight.

I'm all for energy savings, I simply want the consumer and designer to be the ones who determine how to best achieve it. Title 24 should provide us with an electric allowance per sq. ft. The owner and designer should be allowed to determine where the lighting is needed or not needed. If I go to bed by 9pm every night and turn off all the lights, isn't that more in the interest of saving energy than the house that meets Title 24 but leaves the lights burning most of the night? Don't we want to encourage those who never turn off their lights to do so? Simply installing automatic off devices in bathrooms doesn't come close to meeting our goals. Why not encourage the consumer to turn lights off throughout the entire house by enforcing the same penalty for using more power per sq. ft. than their allowance? In turn, there could also be an incentive for consumers to lower their electric bills by giving them a special deduct for under utilizing their electric allowance. By charging them less than the standard electric rate the payback time to install photo-voltaic panels would be shorter and thereby all the more attractive.

I hope you will consider these suggestions. I am happy to discuss them further with you and your agency.

Best regards,

A handwritten signature in black ink that reads "Ann L. Kale". The signature is fluid and cursive, with a long horizontal stroke at the beginning.

Ann L. Kale  
Ann Kale Associates