Docket # 15-BSTD-01

2016 Building Standards Update

WHY TRY TO PROMOTE AUTOMATIC DEMAND RESPONSE FOR LIGHTING? SO MUCH IS UNKNOWN REGARDING 2017 – 2020

August 30, 2015

Greetings

Why has the CEC been trying to promote automatic demand response for lighting, especially since lighting is becoming so low wattage?

For some buildings that may work okay, but in the big picture addressable electric car chargers and HVAC units can be much more cost effective for automatic demand reduction.

Even without any push from Title 24, with good LED task lights, for ambient lighting we can easily get down to .3125 WSF in open offices with 25W LED troffers or troffer kits in an 8' x 10' grid. That could be dimmed 10% for automatic demand response, but let's compare that with others.

- Addressable 3KW electric car charger with connected electric car batteries sheds the demand equivalent of 3000/.3125/.1 = 96,000 SF of lighting, which at 1 lighting fixture covering 80 SF, is equivalent to 1200 dimming lighting fixtures and controls.
    - Electric car batteries could also help feed the grid.
- Addressable 5 ton HVAC unit at 1 KW/ton sheds the demand equivalent of 5000/.3125/.1 = 160,000 SF of lighting, which at 1 lighting fixture covering 80 SF, is equivalent to 2000 dimming lighting fixtures and controls. Each 5-ton HVAC may cover 2000 SF.
    - An option with HVAC is making ice during nonpeak times, which would really reduce peak load.

Instead of trying to focus on automatic demand reduction with lighting, the CEC may be better off copying what Maui is already doing in its JUMPStartMaui program, with partners from State of Hawaii and Japan.
www.jumpsmartmaui.com
https://www.youtube.com/watch?v=PiHRNXuuZhs&feature=youtu.be

I have PV on the roof, Nissan Leaf electric car and have signed up for JUMPStartMaui's phase 2, which is getting a free 220V fast and smart charger installed in the garage. Peak load is 5 – 9 PM here. When the car is plugged into the charger during peak load and if the grid needs the power, the smart charger will drain the car's battery down to 30%, and then after 9 PM, the charger will automatically fully charge the car, so it is totally ready in the morning.

On Maui, every parking lot with at least 100 parking spaces needs at least grade 2 chargers, which are 220V and fast.

JUMPStartMaui has been installing grade 3 chargers, which are 440V and very fast, across the island. These can typically provide a full charge within 15 – 30 minutes.

Why isn't the CEC taking the lead in something good like this, instead decimating the lighting retrofit industry with Title 24, when the most retrofits and most energy savings would happen with no Title 24 or something similar to how most people dealt with the previous version?

Don't try to fix something if it is not broken, and the previous Title 24 was not broke.

The current 15-day language is no-where good enough to really get the lighting retrofit industry back to where it was before this Title 24 took effect.

With general lighting, human centric lighting, controls, IoT, micro-grids, green power, etc. evolving so rapidly how can the CEC properly design the 2016 Title 24, which may run from 2017 – 2020?

The CEC does not have to, because the private sector can do a much better job as various developments happen.

With the upcoming advancements with green power and micro-grids, efficiency will probably become much less important, because power should become quite cheap.

Here is an example of a new green power technology installed in Hawaii. It is the largest ocean thermal energy conversion plant, using deep cold water and warm surface water to generate 24/7 power.
http://mauinow.com/2015/08/21/state-celebrates-largest-ocean-thermal-energy-conversion-plant/
Why didn't the CEC do something similar earlier?

The lighting industry and end-customers no longer needs Big Brothers, such as the CEC, so why doesn't the CEC save California tax dollars by getting out of the way or use those tax dollars to do something good, like smart electric car and charging systems, green power or efficient salt to fresh water technology?

You can email or call me at 10 AM or later Pacific Time during daylight savings time, which is 7 AM or later here in Hawaii. Thanks for your consideration.

Stan Walerczyk

Stan Walerczyk, HCLP, CLEP
Principal of Lighting Wizards
Officer of Human Centric Lighting Society
http://lightingwizards.com/
http://humancentriclighting.org/
stan@lightingwizards.com
808-344-9685