

**DOCKETED**

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*Comment Received From: Steve Schmidt*  
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## **Broaden Procedure to Include Dumb Devices Too (Revised)**

My apologies. My prior submission included errors and formatting problems. Attached is an improved replacement.

*Additional submitted attachment is included below.*

## Broaden Procedure to Include Dumb Devices Too

Home Energy Analytics (HEA) uses smart meter data to identify high “Home Idle Loads” and help CA residents reduce this wasted energy through simple measures. In 2015 we collaborated with the NRDC and Stanford University to investigate these Home Idle Loads and found the average California home has around 220 watts of continuous electric use (in this use, "continuous" means usage that appears in every hour of smart meter data). This study<sup>1</sup> encompassed over 100,000 homes in a number of different geographical locations across the state.

HEA was also awarded an EPIC grant to help characterize and log these idling power “hogs” as part of the “Plug Load Database” (PLDB) in EPC-15-025.

The NRDC provided detailed and important comments on this working draft. For example, they wrote: “Some products need to provide their primary service 24/7 and don’t have a low- power mode. For example, a security camera needs to record and transmit data 24/7.” This statement highlights the issue HEA would like to comment on: the huge set of existing products (plug loads, or MELs) that appear to be excluded from the scope of this LPM testing.

HEA encourages the CEC to include existing "dumb" (non-connected) devices in the analysis of "consumer electronics and appliances in their standby, idle, or in general LPM". There is no current standard for measuring these devices, yet they represent a huge amount of the "MELS" category of residential energy use in existing homes.

Such devices include:

- Continuous hot water recirculation pumps (30-90 watts);
- Heated towel racks (50-140 watts);
- Heated tile bathroom floors set to “off”, but maintaining a minimum temperature;
- Empty or little-used refrigerators;
- Pet water dishes with UV sterilization lamps;
- Heated baby wipe dispensers;
- Digital picture frames;
- Whole-home lighting systems;
- Whole-home audio systems;
- And many others.

For our EPIC project HEA has developed a smart phone app (Dr Power by HEA) which helps users identify devices that contribute to their Home Idle Load. The app currently covers 96 such device categories. These categories are listed below.

Respectfully submitted,

Steve Schmidt  
Home Energy Analytics

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<sup>1</sup> Report available here: <https://www.nrdc.org/resources/home-idle-load-devices-wasting-huge-amounts-electricity-when-not-active-use>

## List of device categories that contribute to Home Idle Load:

Nightlight, always on  
Smoke alarm or Carbon Monoxide (CO) detector  
Ground Fault Interrupt outlets, usually near sinks  
Surge protector for sensitive electronics, always on  
TV, purchased since 2011  
Bluetooth or other wireless enabled LED light bulb  
Electric wine opener, always plugged in  
Outdoor light controlled by motion sensor  
Home automation smart outlet or other device (X10, Control4)  
Electric doorbell with transformer  
Digital water faucet, always plugged in  
Electronic light switches that can be remotely controlled  
Cordless phones, always plugged in and charging  
Electronic alarm clock or radio, always plugged in  
Charger always plugged in, for mobile electronic devices  
Energy monitoring device, always on  
Internet enabled thermostat  
Rechargeable or electric toothbrush, always plugged in  
Printer and/or copy machine, inkjet, always on  
Skype hardware or other VOIP phone system  
Electric piano or other electronic musical instrument, always on  
Weather station and monitor, always on  
Tankless water heater with electronics, always on  
Toilet seat with electronics and heater, always on  
Traditional furnace with electric plug (often for thermostat)  
Portable laptop computer (not a tablet or phone)  
Microwave oven with electronics and clock, always on  
Copier/Printer/Scanner/Fax machine, always on  
Treadmill or other exercise device with electronics, always on  
Invisible pet fence with electronics, always on  
Automated landscape irrigation system  
Emergency lights always plugged in (not necessarily on)  
High end coffee maker with advanced electronics, always on  
Modern furnace with advanced electronics, always on  
High end clothes dryer with advanced electronics, always on  
High end washing machine with advanced electronics, always on  
DVD player, always on  
Pool equipment controller, always on  
Water softener, always on  
Landscape lighting controller, always on  
Garage door opener with remote control  
Power conditioner for sensitive electronics or audio equipment  
Mechanical paper shredder, always on  
Advanced electric water heater, with electronics always on  
Networking equipment including routers, wifi, hubs; always on  
Digital picture frame continuously showing photos  
Battery charger for drill-driver or other handyman tool, always on  
Smart (connected) slow cooker, BBQ grill, etc; always on  
Computer laser printer, always on

Fax machine, always on for incoming faxes  
Electric Vehicle Supply Equipment (EVSE)  
High end dishwasher with advanced electronics, always on  
HEPA air cleaner or other air filter, always on  
Video Cassette Recorder left in standby mode  
TV, purchased between 2005 and 2011  
Audio system for TV, computer, CDs, tuner, amps, etc  
Digital Video Recorder, always on  
Rechargeable handheld vacuum cleaner  
Medical equipment running continuously (CPAP, dialysis, etc)  
Heat pump system for space heating or cooling, with electronics  
Network storage device on a home area network  
Uninterruptible Power Supply for electronics  
Small fountain running continuously  
TV, larger than 50" diagonal (unregulated in CA)  
Server type computer & monitor left in standby mode; not laptop  
Radon gas ventilation system (usually in the crawlspace)  
Cable modem for TV, internet or phone service  
Continuous fan for cooling, drying, ventilation or exhaust  
TV, purchased prior to 2005  
Standard home security system with backup battery  
Any type of light (indoor or outdoor) which is always on  
Dorm fridge, mini fridge, compact fridge  
Outdoor fish pond with recirculating pump  
Any type of aquarium with a filter pump, lighting and/or heater  
Instant hot water dispenser, usually in kitchen  
Stereo amplifier or other components that are always on  
Electronic game console like PlayStation, Xbox 360, Wii, etc.  
Heat Recovery Ventilator running continuously  
Standalone freezer  
Gaming machine or larger compute server, always on  
Continuous hot water recirculating pump that provides instant hot water to all faucets  
Radiant heating that uses pumps to move heated water  
Standalone wine storage cooler  
Wall mounted or freestanding electric towel warmer  
Whole-house audio system with centralized rack of equipment  
Large standalone ice maker, including "clear ice" variety  
Large fountain running continuously  
Large integrated home cinema or theater  
Heat pump running 24 hours per day for weeks at a time  
Separate room for wine storage with climate control  
Advanced home security system with cameras  
Heated bathroom or kitchen tile flooring  
Air conditioner running 24 hrs/day for weeks at a time  
Whole-house lighting with central control & power system  
Whole-house battery backup with charger, for power outages  
Normal kitchen refrigerator

[end]