

Tier 2 Advanced Power Strip Follow Up



Martin Vu
March 2015

California Technical Forum (CALTF)



- A collaborative of experts who use independent professional judgment and a transparent, technically robust process to review and issue technical information related to California's integrated demand side management portfolio.
- A 29 member body supporting the development and approval of utility workpapers that support energy savings claims reported to the CPUC.

Objective: Seeking TF approval of Tier 2 APS WP

- Update on SDG&E Commercial Field Trial Study
- TF January Feedback and WP Follow Up
- CALPLUG's Tier 2 APS Roadmap and Definition
- Seeking Approval from TF for Tier 2 APS
 - Things for the TF to Consider
- CALTF's Approval of Tier 2 APS

SDG&E Commercial Field Trial

4

DATASET	Monitored Time [Days]	Weekly Active Usetime [Hours]	Baseline Annual Usage [kWh]	Annual Energy Savings [kWh]	% Savings
Office Settings	12	19.6	621.5	494.0	79.5%
Computer Lab Settings	13	28.3	342.9	253.5	73.9%
Combined	13	24.0	479.5	371.4	77.5%

For the PC trial, confidence intervals for the annual baseline consumption and savings are as follows:

- 90% confidence interval for baseline consumption: (367kWh, 585kWh)
- 90% confidence interval for savings: (238 kWh, 434 kWh)
- TRC 4.81

Go-to-market Roadmap for Emerging Technologies

Manufacturers

SIEMENS

embertec[®]
ENERGY EFFICIENCY TECHNOLOGIES

TrickleStar
Conserving energy. Improving life.

valta

smartenit[®]
Making your world smarter and greener

Neutral 3rd Parties

WECC

STEP I
Volume 0 - 1

From ideas to Prototypes

II
1 - 10

Live tests and Simulations

III
10 - 1000

Pilot study and Field Test

IV
1000 - 1M

Promotion and Scale-up

CALIFORNIA
TECHNICAL FORUM

CalPlug
CALIFORNIA PLUG LOAD RESEARCH CENTER

Utilities

SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL Company

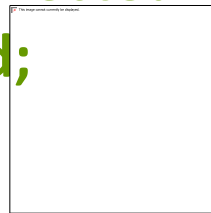
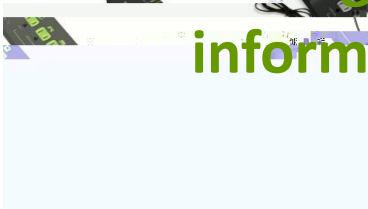
LA
DWP
Los Angeles
Department of
Water & Power

PG&E

ANAHEIM
PUBLIC UTILITIES
ASSOCIATION/STUDIOS

CalPlug's Draft Definition for Tier 2 APS

- **Tier 2 Advanced Power Strips are recommended to have the following features:**
 1. Usage Sensing – to provide at least one method to sense and determine consumer utilization and usage pattern;
 2. Advanced Power Analysis – to perform advanced power analysis in addition to voltage and current sensing. These power measurement and analysis may include, true RMS power, power factor analysis and other load signature detection.
 3. Control Algorithms - to perform automated power management of connected devices based on data and information acquired;



Tier 2 Advanced Power Strip Follow Up



Martin Vu
February 2015

Things for the TF to Consider

8

- **Technical specifications requirements that impact ability to achieve energy savings**
 - Lack of national standard such as ENERGY STAR
 - CALPLUG's Tier 2 definition
- **Validating energy savings claims**
 - CALPLUG's roadmap
 - Other methods (lab only, modeling)
- **Representativeness of field trial data of target population**
 - Low Income versus affluent/energy aware customers
- **Future Baseline Data Collection Calibration**
 - Quantity, timing, and scope
 - Persistence Surveys
 - ✦ Customer satisfaction

CALTF's Approval of Tier 2 APS



- Approved CALPLUG's Go-2-Market Roadmap
- Approved a more narrower Tier 2 APS definition until future field trials are complete
- Approved workpaper based on Santa Cruz and SDG&E field trials
 - Annual Average Energy Savings: 246 kWh/AV environment
 - DEER Average Peak Demand Reduction: 0.0252 kW
- Factored in a 28% Consumer Persistence In-Service Rate
- Will evaluate a revised wp 1 year from the approval date