

A Feedback App that Improves Use of Computer Sleep Settings: Field Test Results



Dr. Joy Pixley

Dr. Sergio Gago Masague

Raquel Fallman

Sabine Kunrath

Dr. G.P. Li

**California Plug Load Research Center
University of California, Irvine**

www.calplug.org



Creating Connections. Powering Innovation. Boosting Efficiency.

**BECC 2018
Washington, DC**



Desktop Computers and Sleep

Why study desktop computers?

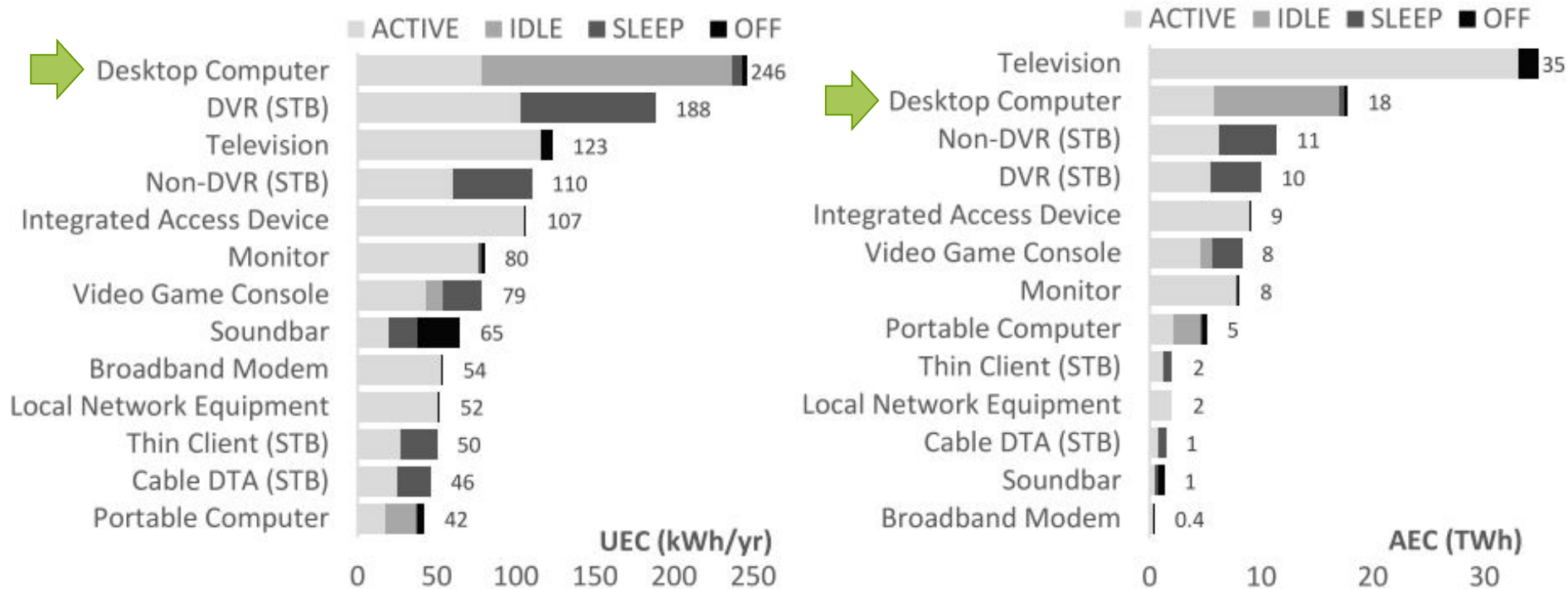


Figure ES-2. Unit energy consumption and annual energy consumption by mode for devices studied in depth.

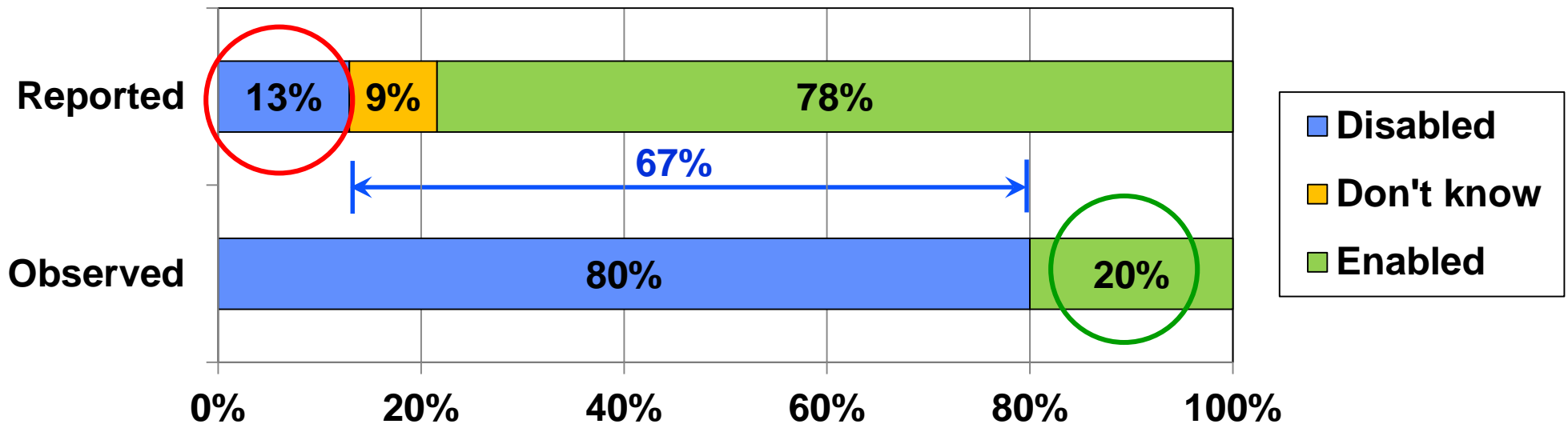
Source: Urban, Roth, Singh and Howes 2017. Fraunhofer USA. "Energy Consumption of Consumer Electronics in U.S. Homes in 2017"



Desktop Computers and Sleep

Problem: Despite sleep settings options, desktops are left on and idle.

Are Computer Sleep Settings Enabled?



Solution: New interface that gives users feedback and encouragement.

Power Management User Interface

The screenshot shows a web-based interface for power management settings. The window title is "PMUI". The main header is "pmui Sleep Settings". A left sidebar contains navigation options: "Sleep Settings" (selected), "Reports", "Usage Report", "Time Spent Idle", "Patterns Over Time", and "FAQ". The main content area is titled "Sleep Settings" and is divided into two sections: "Computer" and "Display".

Computer
Computer goes to sleep after

How can I reduce my computer's idle time?

1 min 3 mins 10 mins 20 mins 30 mins Never

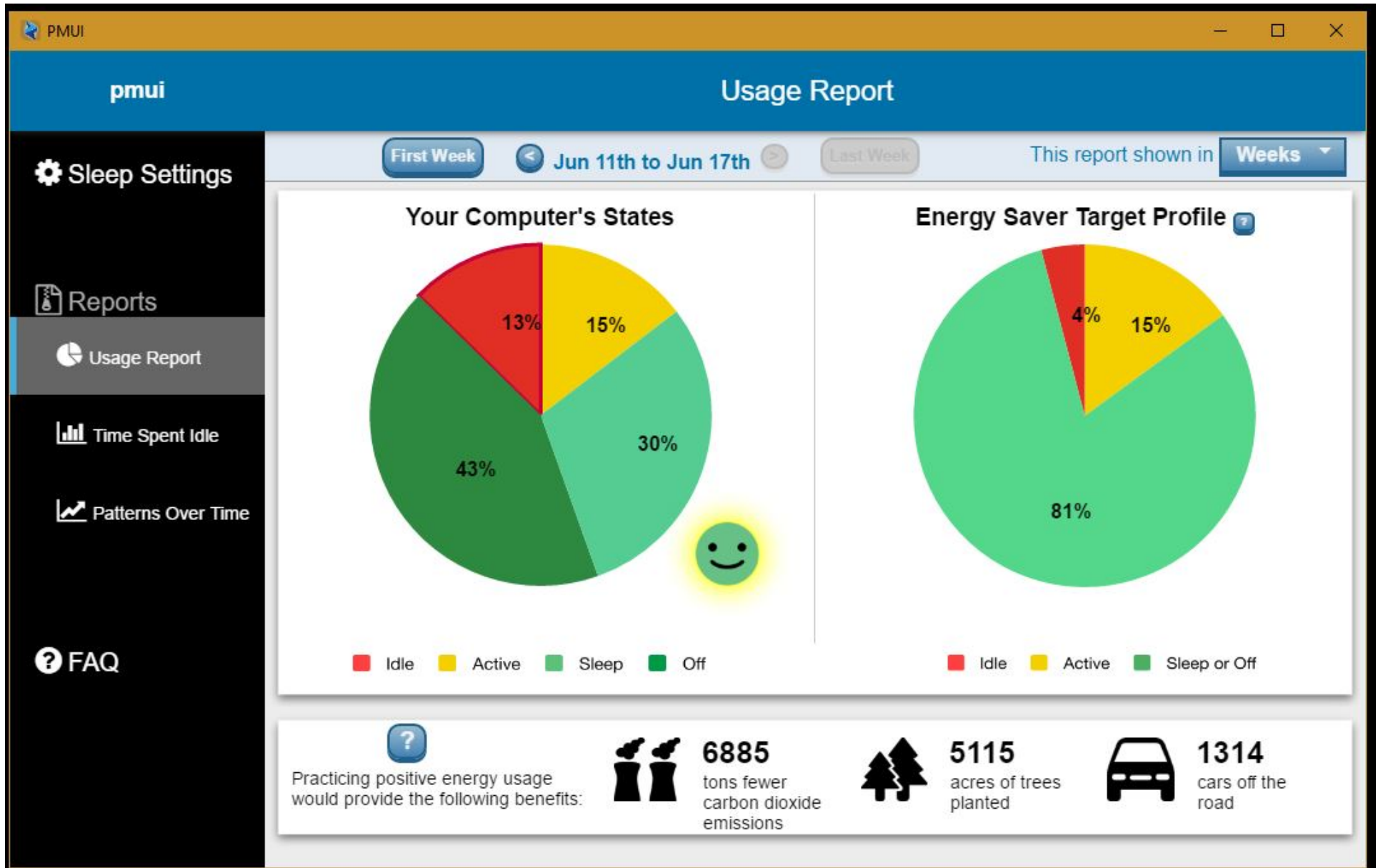
Display
Display goes to sleep after

1 min 2 mins 3 mins 5 mins 10 mins Never

To temporarily disable your sleep settings, click this box:

1 hour

Power Management User Interface



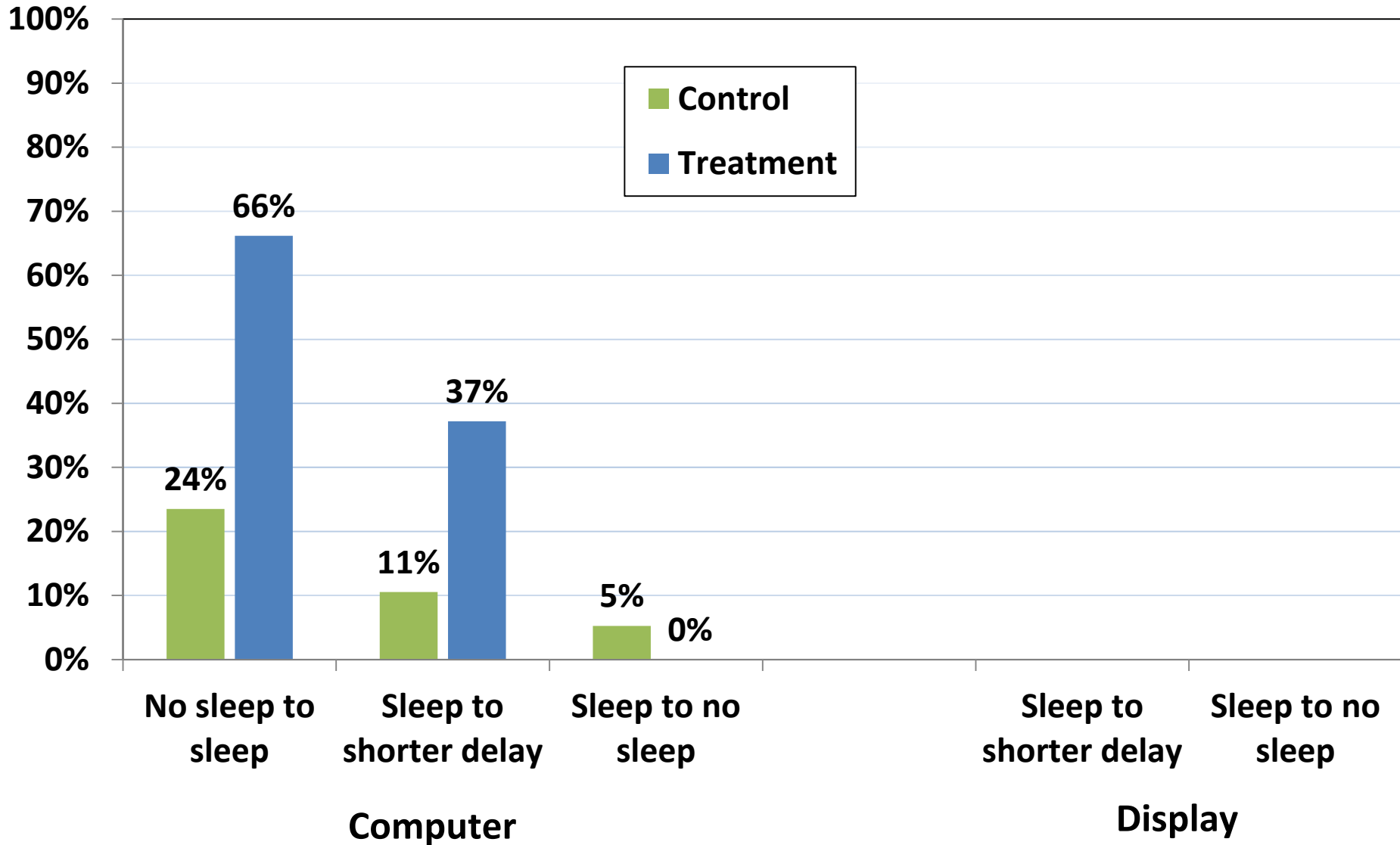
Field Test

- **Sample: 407 university staff members with desktops**
- **75% treatment versus 25% control group**
- **1 month baseline, 2 months experimental**

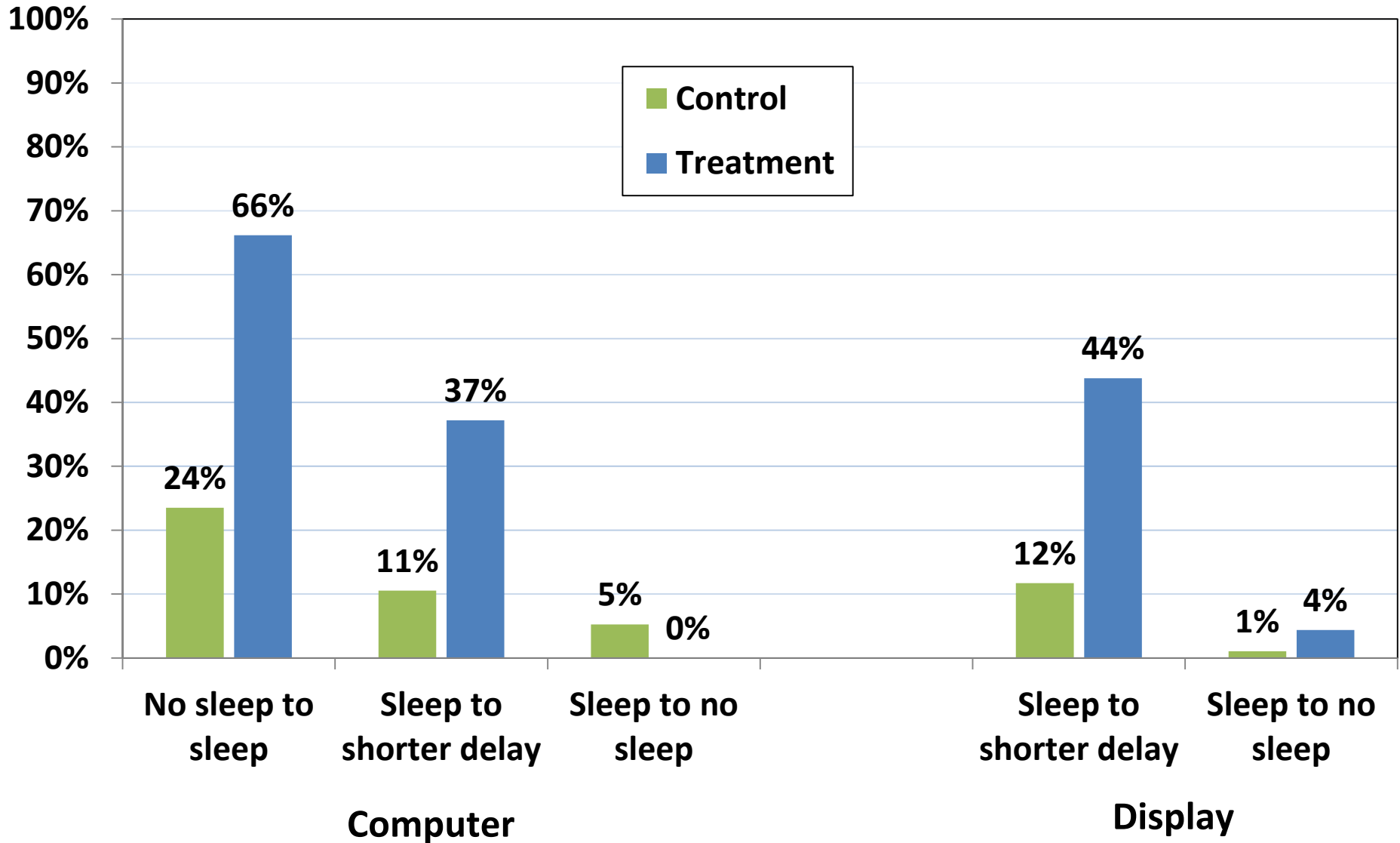
How many had sleep enabled initially?



Field Test Results

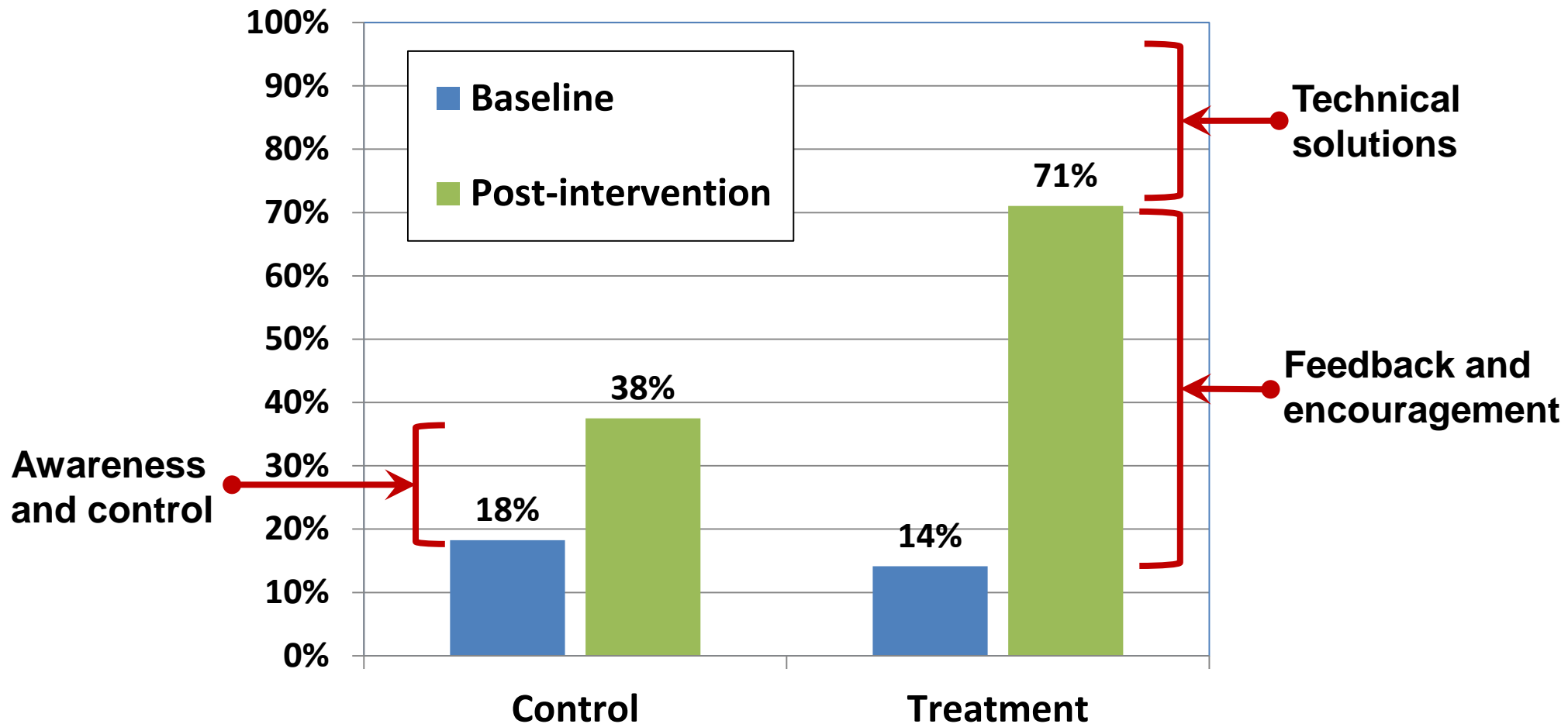


Field Test Results



Conclusion: Feedback Works

Computers with Sleep Enabled



Questions?

Thank you!

Dr. Joy Pixley

jpixley@uci.edu

California Plug Load Research Center

California Institute for Telecommunications and Information Technology

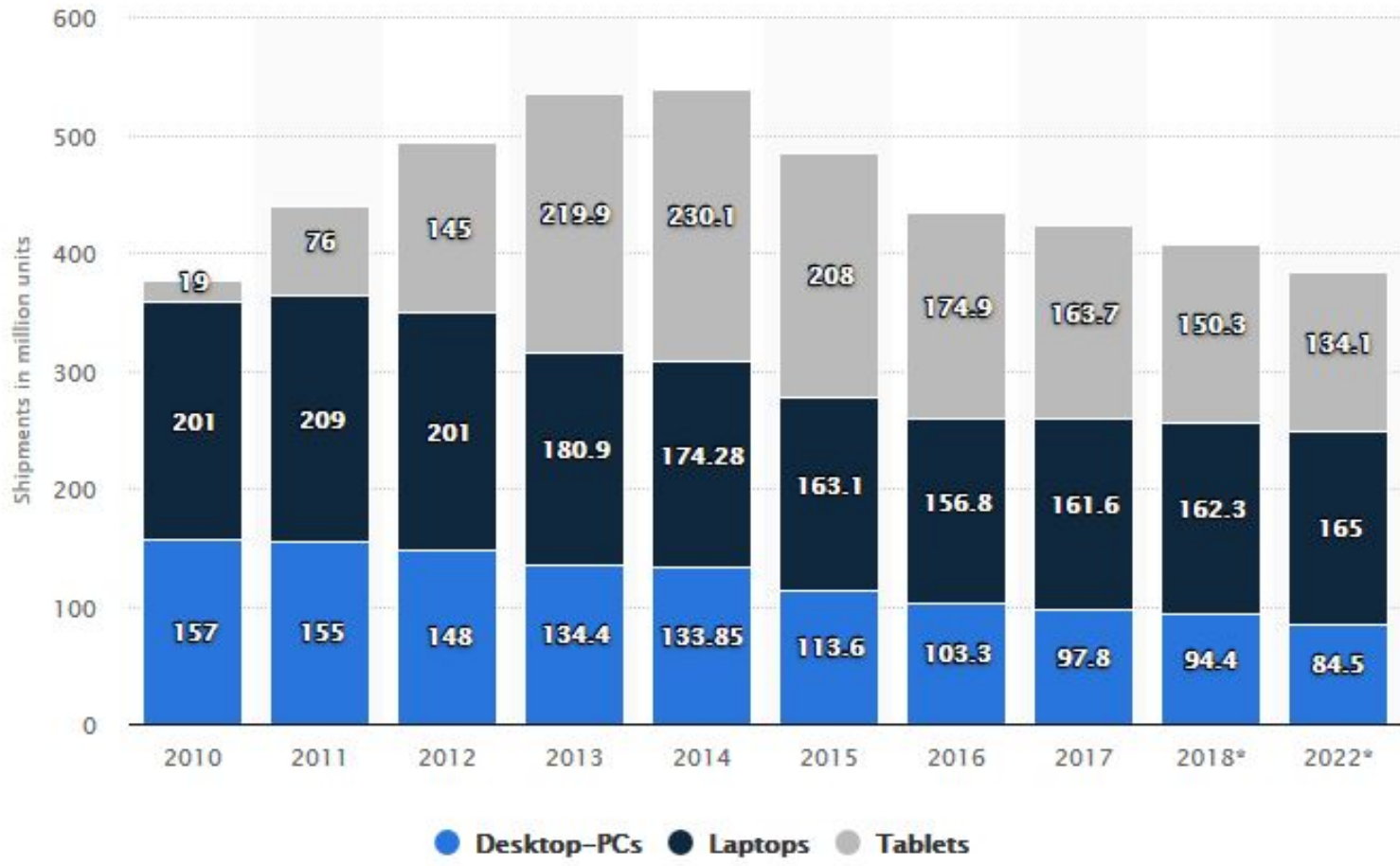
University of California, Irvine



Creating Connections. Powering Innovation. Boosting Efficiency.



Trends in Desktop, Laptop, and Tablets Sales



Additional Information: Worldwide; 2010 to 2018

© Statista 2018

Source: IDC

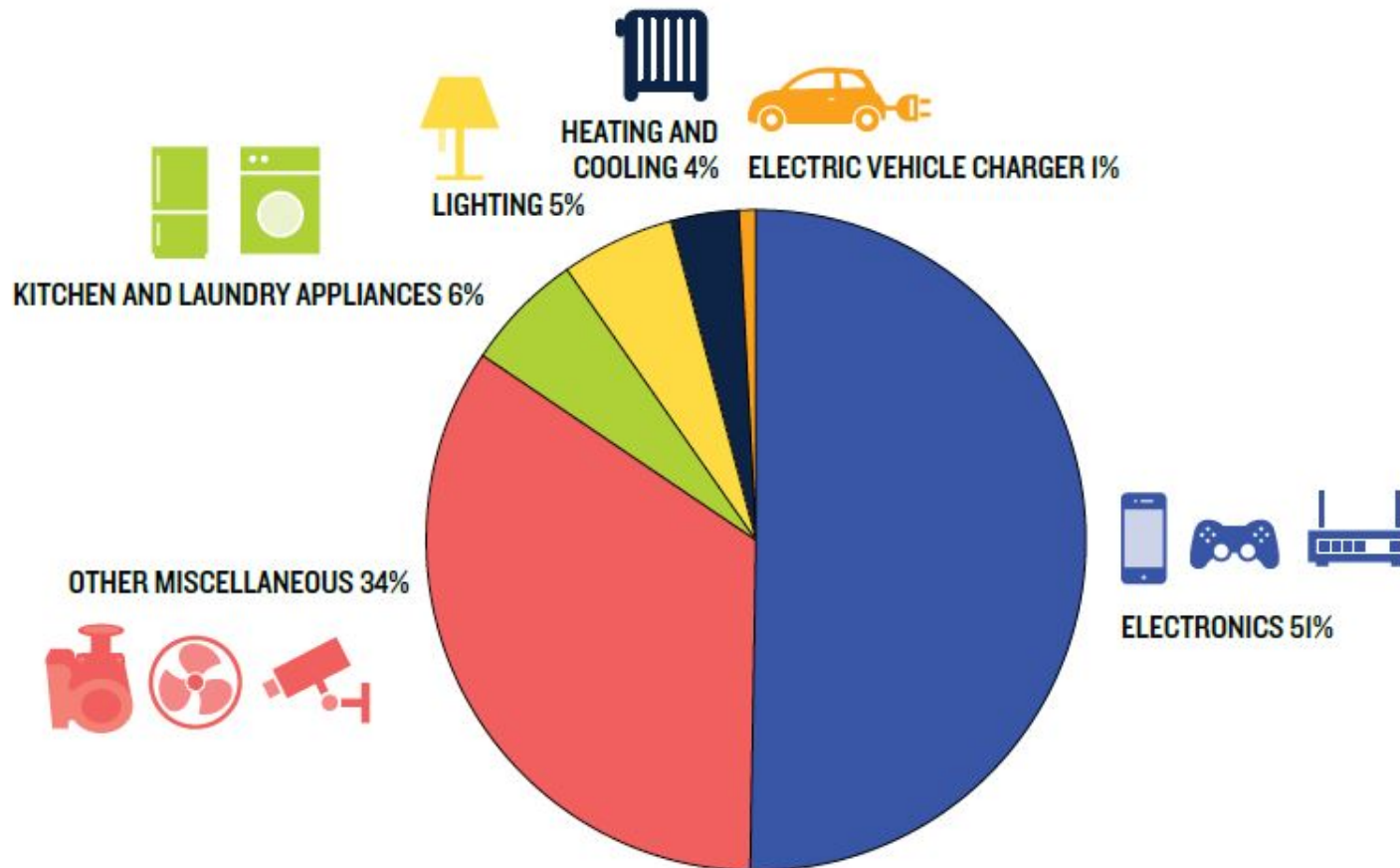


Creating Connections. Powering Innovation. Boosting Efficiency.



Always-On Plug Loads

Figure 10: Idle (Always-On) Loads by Major Product Category in 10 Homes Audited



Source: Delforge, Schmidt and Schmidt. 2015. NRDC. "Home Idle Load: Devices Wasting Huge Amounts of Electricity when Not in Active Use."



Creating Connections. Powering Innovation. Boosting Efficiency.