

Memorandum

To: United States Department of Energy

From: Pierre Delforge, Natural Resources Defense Council

Date: September 28, 2016

Re Ex-Parte Communication

On Thursday, September 15, 2016, representatives of the Natural Resources Defense Council (NRDC) and the Appliance Standards Awareness Project (ASAP) held a meeting and conference call with a representative of the Department of Energy to discuss the Framework Document for Computer and Battery Backup Systems, Docket Number EERE-2014-BT-STD-0025 (RIN # 1904-AD04), 79 Fed. Reg. 41656.

The following individuals were present in the room:

Jeremy Domm, DOE
Pierre Delforge, NRDC

And on the phone:

Andrew DeLaski, ASAP
Chris Granda, ASAP

Participants discussed the opportunity to include active mode in the test procedure for computers, in order to better align measured computer energy use with real-world use. Testing by the California IOUs, NRDC and Aggios, as represented in the attached presentation, found significant differences between energy use in idle mode as measured by the ENERGY STAR v6 test procedure, and real-world energy use. This results in potential misinformation of computer purchasers on the energy use and associated cost of computers, and it could also lead manufacturers to invest in energy efficiency improvements that do not yield the most energy savings in real-world use. Participants discussed potential approaches for addressing this issue.

Respectfully submitted, s/

Pierre Delforge
Natural Resources Defense Council

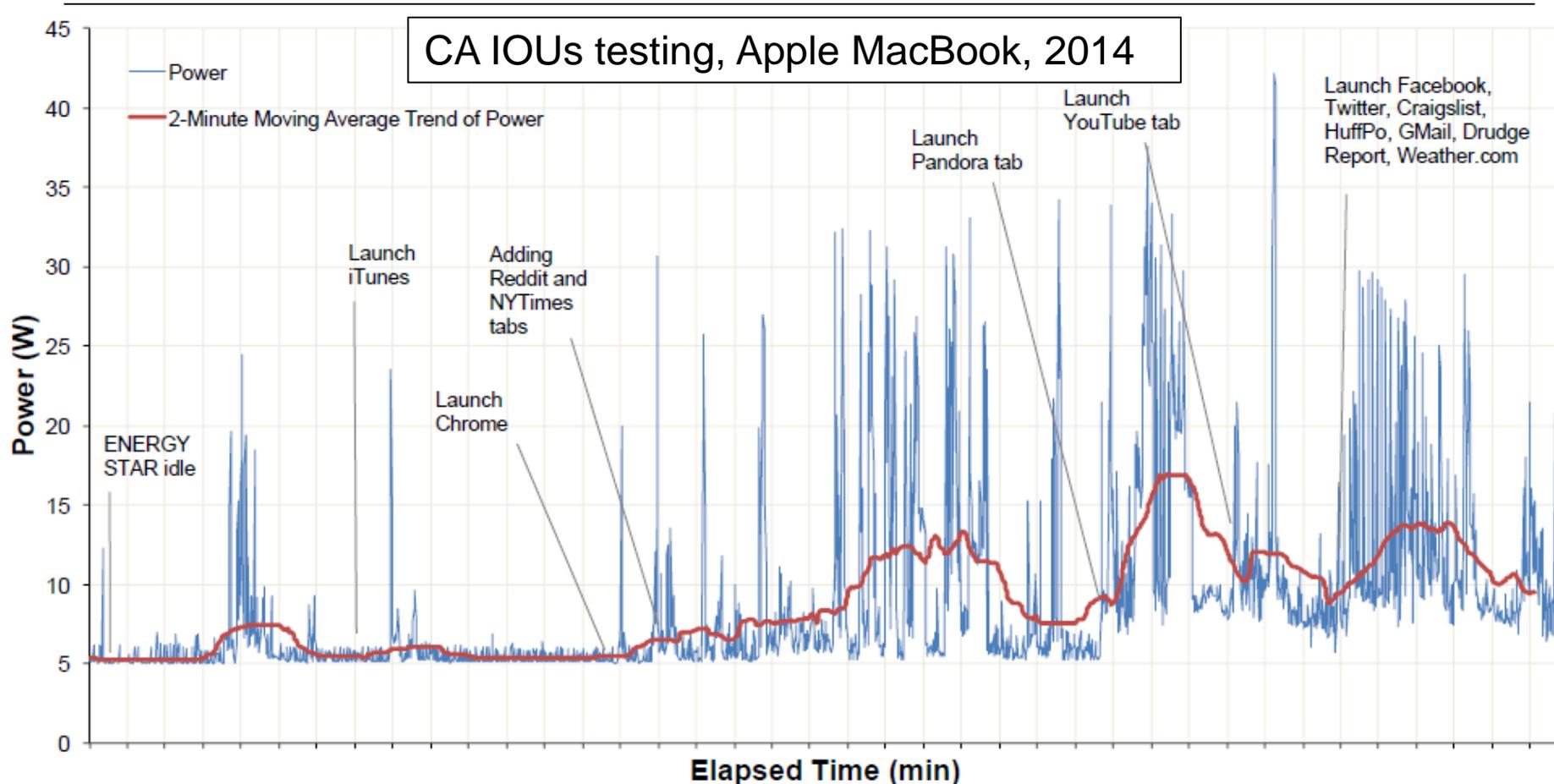


COMPUTER ACTIVE MODE TEST PROCEDURE



SEPT. 15, 2016

Idle mode no longer representative of active use or even real-world idle



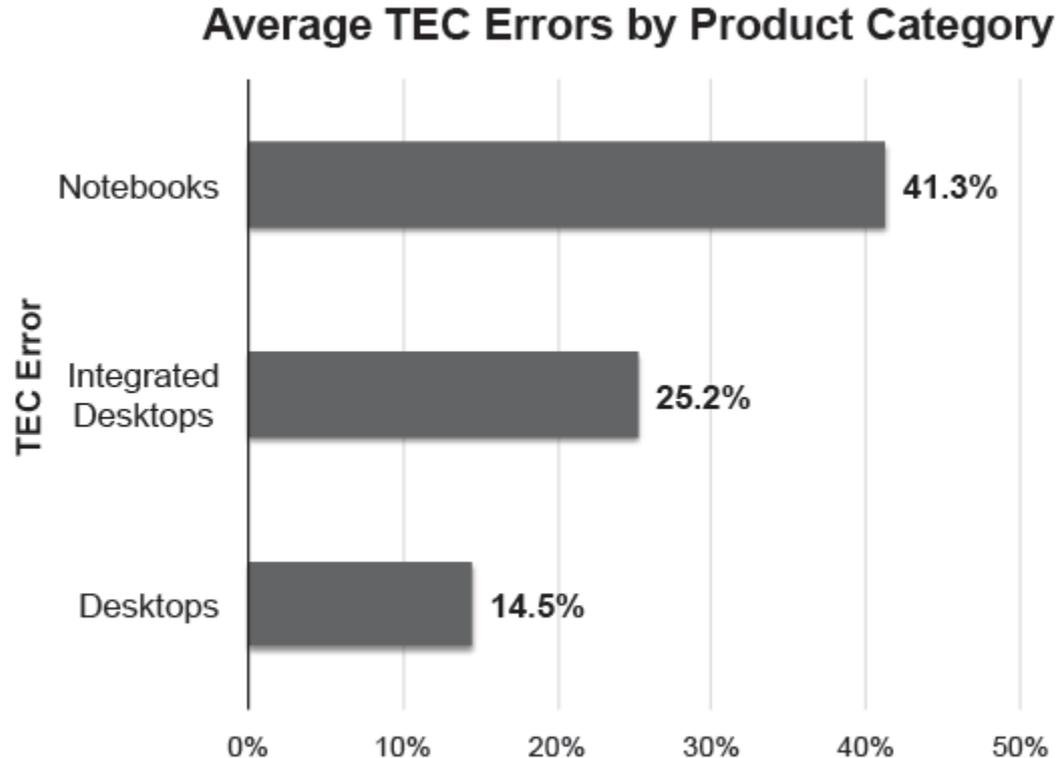
- Laptop idles at 5 watts (ENERGY STAR test procedure), but averages 10 watts and more in real-world idle and light active use

Source: CA IOUs Comments on CEC docket: Computers - Real World Adjustment Factor Report



Delta is getting larger as computers are better able to scale power down from active to idle

2014 IOU testing results on sample of computers*



- Energy use under real-world test conditions is 15-40% higher than that measured using ENERGY STAR test procedure

Idle mode no longer appropriately differentiates computers on efficiency

- NRDC-Aggios project, 2015: Apple iMac **200% to 300%** more efficient than Lenovo equivalent with ENERGY STAR test procedure, but only **38%** more efficient in “real-world idle” conditions



Apple iMac 21.5”



Lenovo B40-30

Source: NRDC-Aggios comments on CEC docket: All-In-One Computer Idle Power Analysis, May 2016

Impacts: potentially misleads computer buyers and policy makers, also misdirects manufacturer efficiency investments

1. Buyers and policy makers: significantly underestimates real-world computer energy use and savings potential of ENERGY STAR models

- User cost savings
- Cost-effectiveness, policy prioritization and coverage

2. Manufacturers: potentially misdirects efficiency investments

- Directs manufacturers to invest in design improvements that may not save expected energy in real-world use (design to flawed test)
- May leave real savings opportunities on table (opportunity cost)

Proposed solution: video streaming and web browsing active mode benchmark

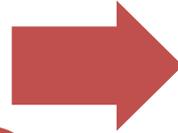
Video streaming and web browsing can capture the essence of both “real-world idle” and “light active” states

- Include social media and web-based email activities, as well as open but inactive browser windows
- Do not include office productivity software use (office suite, client-based email), but maybe reasonable proxy (to be validated)

Proposed approach: ENERGY STAR

PRE-v7

- Develop active mode benchmark
- In addition to, not replacement of, short and long idle (backward compatibility)



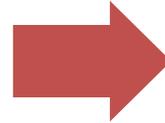
V7

- Active: test and list
- Idle: updated levels, leveraging CEC framework

Proposed approach: DOE

Test procedure

- Develop active mode benchmark for ENERGY STAR v7



Data collection

- ENERGY STAR v7