

## DOCKETED

<b>Docket Number:</b>	14-AAER-02
<b>Project Title:</b>	Computer, Computer Monitors, and Electronic Displays
<b>TN #:</b>	211144
<b>Document Title:</b>	Notice of Availability Supplement to Revised Staff Report
<b>Description:</b>	For Computers, Computer Monitors, and Signage Displays
<b>Filer:</b>	Harinder Singh
<b>Organization:</b>	California Energy Commission
<b>Submitter Role:</b>	Commission Staff
<b>Submission Date:</b>	4/19/2016 1:37:18 PM
<b>Docketed Date:</b>	4/19/2016

**CALIFORNIA ENERGY COMMISSION**1516 Ninth Street  
Sacramento, California 95814Main website: [www.energy.ca.gov](http://www.energy.ca.gov)

## Notice of Availability

### Supplement to the Revised Staff Report for Computers, Computer Monitors, and Signage Displays Docket No. 14-AAER-2

This document supplements the revised staff report for computers, computer monitors, and signage displays, posted on March 30, 2016. This document clarifies and corrects the revised staff report to enhance stakeholder understanding of the draft regulation.

#### 1. Storage Adder:

Table V-4 of the proposed regulations contains adders for storage and is shown below.

**Table V-4**  
**List of Potentially Applicable Adders**

<u>Function</u>	<u>Desktop and Thin-Client Adder (kWh/yr)</u>	<u>Notebook Adder (kWh/yr)</u>
<u>Memory (per module)</u>	<u>2.5</u>	<u>2.5</u>
<u>Energy-Efficient Ethernet</u>	<u>0.9</u>	<u>0.9</u>
<u>Storage</u>	<u>3.5-inch Drive: 26</u> <u>2.5-inch Drive: 4.5</u> <u>Solid-State Memory: 0.5</u> <u>Other: 26</u>	<u>2.6</u>
<u>Expandability Score</u>	<u>For ES &lt;200: 0</u> <u>For ES ≥ 200: (ES-200)/20</u>	<u>N/A</u>

The storage adder is intended to apply only to hard drives beyond the first. Specifically, each hard drive beyond the first would be eligible for the appropriate allowance. The staff report contains a description of a “primary hard-disk” which is the hard-disk that would not receive an adder. The primary hard-disk is the one on which the operating system is installed. Staff seeks feedback on whether to add a definition of “primary hard-disk” should be added into the draft regulations.

## 2. Integrated Display Adder:

The revised staff report, on page 32, discusses adders for integrated displays. In the 2015 staff report, integrated display adders were aligned with ENERGY STAR® Version 6.1. Display efficiency has significantly advanced since the inception of the ENERGY STAR adders in 2012. To adjust for improvements in technology, the revised staff report proposed to reduce the adder by 20 percent, consistent with staff's proposal for stand-alone displays.

The formula in the proposed regulatory language on page 45 of the revised staff report does not currently reflect a 20 percent reduction in the adder. To capture this reduction, the formula that staff intends to propose is the following:

$$\underline{[8.76 * 0.35 * (1+EP) * (3.2*r + 0.04*A)]}$$

## 3. Correction Regarding ENERGY STAR

Page 17 of the revised staff report discusses ENERGY STAR's current specification for computers as specifying a "c-score." This reference should be "p-score" instead and it is calculated by multiplying CPU's clock speed in gigahertz by the number of cores.

## 4. Notebook Duty Cycle

The proposed regulations include updates to the duty cycle for notebooks used to calculate annual energy use to determine compliance. The updates refer to Table 3 of the ENERGY STAR specification, which is the table that contains the duty cycles for desktops, thin-clients, and integrated desktop computers. However, it is not the intent of staff to propose this calculation methodology for notebooks. Staff intends for the duty cycle to be consistent with Table 4 of the ENERGY STAR specification, which contains the ENERGY STAR duty cycle for notebook computers.

## 5. Computers with high expandability score

The proposed regulation intends to have both desktop computers with an expandability score greater than 750 and workstations to both meet the same requirements. To implement this, staff incorporated the high expandability score desktop computers into the definition of a workstation. This is done solely to make the same requirement apply to these high expandability computers, and not to make any other adjustment to the scope of workstation.