DOCKETED

Docket Number:	14-AAER-02
Project Title:	Computer, Computer Monitors, and Electronic Displays
TN #:	204786
Document Title:	AMD Comments on Computer, Computer Monitors, and Electronic Displays
Description:	N/A
Filer:	System
Organization:	AMD/Donna Sadowy
Submitter Role:	Public
Submission Date:	5/29/2015 4:06:45 PM
Docketed Date:	5/29/2015

Comment Received From: Donna Sadowy
Submitted On: 5/29/2015
Docket Number: 14-AAER-02

AMD Comments on Computer, Computer Monitors, and Electronic Displays, Docket #14-AAER-02

Additional submitted attachment is included below.

May 29, 2015

Commissioner Andrew McAllister
California Energy Commission
1516 Ninth Street
Sacramento, California 95814

Re: Docket Number 14-AAER-2: *Analysis of Computers, Computer Monitors and Signage Displays*

Dear Commissioner McAllister,

AMD has a forty-six year history of investment and growth in the State of California's vibrant technology industry, which is led by our global headquarters and research and development site in Sunnyvale, California. With a deep appreciation for that history, I write about a matter that bears on future competition, innovation and consumer choice within California. Mindful that these items lead to the creation and retention of California jobs, not to mention the global competitiveness of California and the nation, AMD is respectfully identifying factors it believes important to consider in conjunction with the subject proceeding above. I am incorporating herein the white paper, entitled *AMD's Commitment to Accelerating Energy Efficiency*, available at *http://www.amd.com/Documents/energy-efficiency-whitepaper.pdf*, and would request its inclusion in the proceeding's record.

AMD applauds the California Energy Commission's leadership in promoting energy efficient technology and environmental sustainability. From the beginning of this proceeding, our respective experts have engaged in a constructive dialogue. We thank you and your team's countless hours of work, openness and commitment to address the complex technical issues reflected in the current draft regulation.

AMD's Commitment to Designing Energy Efficient Technology

As a supplier of processors for personal computers (PCs) and other products based, in part, on the x86 microprocessor architecture, AMD is committed to working with Original Equipment Manufacturers (OEMs) and technology partners to develop and deploy energy efficient technology for meeting the needs of individual and commercial consumers. From 2008 to 2014, the typical use energy efficiency of AMD's mobile platform silicon efficiency increased by a factor of 10[i], and AMD is continuing to implement energy efficiency improvements through architectural enhancements, design innovation and power management technologies with a goal to achieve 25x typical energy efficiency improvement for our Accelerated Processing Unit (APU) platforms by 2020.[ii]

Our OEM customers face multiple and complex decisions when configuring systems that meet both the performance and power requirements of California consumers. As noted in the enclosed white paper, **AMD agrees with the Commission's use of typical energy consumption as the appropriate model for evaluating computers**. New processor power management technologies that enable a "race to idle" continue to reduce the time that PCs must spend running active applications, and also allow the IT industry to move forward and reduce PC power in the absence of an industry agreement on a standardized benchmark that can be used to measure computer performance.

Benefits to Consumers Through the Differentiated Systems of Notebook PCs and Desktop PCs

Two primary classes of PCs have existed for more than two decades with distinct benefits and interests for consumers: Notebook (Laptop) PCs and Desktop PCs. Over this time, AMD and the PC industry have focused vast amounts of effort and resources on reducing idle and key usage scenario power consumption in

an effort to enable all day battery life and more for Notebook PCs. The energy efficiency of Desktop PCs has benefited from the energy reduction technologies developed for Notebook PCs.

Desktop PCs have been and will continue to be the point of innovation for the most performance demanding new usage scenarios, such as university and laboratory research, technical development and industrial manufacturing. Two examples where Desktop PCs will again lead in new innovation are Virtual Reality and Microsoft™ Windows™ 10 and DirectX12™. Both of these developments can make greater use of far more compute processor unit (CPU) and graphics processor unit (GPU) capability than any Desktop PC today can offer. Notebook PCs have also led the PC industry in innovation to achieve thinner and lighter form factors. Desktop PCs traditionally have been more configurable, expandable, and up-gradable than Notebook PCs. These and other factors have led to the development of different peripheral component technologies for Notebook and Desktop PCs, each optimized for the target system.

AMD urges the Commission to consider the multiple consumer and use case driven reasons that customers use to decide in purchasing a variety of different classes of Notebook and Desktop PC systems, and that systems with different capabilities will have different idle power efficiency capabilities. AMD will continue to drive for increased energy efficiency in all classes of systems. **As the Commission moves forward and considers the need for a regulatory standard, AMD urges the Commission to ensure that any regulation facilitates consumer choice and innovation.**

Benefits to Consumers Through Competition Among Microprocessor Vendors

Since its introduction, the PC has propelled development and unprecedented growth in industries devoted to engineering, design and entertainment. It has also generally enhanced the productivity of all types of business. We believe the global success of the PC is due in large part to innovative uses, adaptable and interoperable capacities, and affordability spurred by fair and open competition among vendors.

As the Commission moves forward and considers the need for a regulatory standard, AMD urges the Commission to avoid unintentionally excluding from the marketplace any of the very limited number of microprocessor vendors. Within the x86 architecture market for compute processor units (CPUs) and system on chips processor units (that AMD calls APUs for Notebook and Desktop PCs), there are only two primary vendors that supply California consumers: AMD and Intel. Likewise, within the market for discrete graphics processor units (GPUs) for Notebook and Desktop PCs, there are only two primary vendors that supply California consumers: AMD and NVIDIA. Competition among vendors spurs innovation and is critical to feeding California's technology-driven economy. Of equal importance, it promotes competitive pricing.

Again, we thank you and the Commission's team for your leadership on this matter, and AMD remains available to you.

Sincerely,

/s/ Susan Moore

Susan Moore
Corporate Vice President, Public Affairs

[i] Taking the ratio of compute capability as measured by common performance measures such as SpecIntRate and PCMark, divided by typical energy use as defined by E_{TEC} (Typical Energy Consumption for notebook computers) as specified in Energy Star Program Requirements Rev 6.0 10/2013

[ii] Ibid.