Before the Committee on Commerce, Science & Transportation
Subcommittee on Science, Technology, and Innovation
United States Senate

"Energy Efficiency Technologies and Programs"

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Introduction

Chairman Kerry, Ranking Member Ensign, and Members of the Subcommittee:

I am pleased to accept your invitation to testify on behalf of the Consumer Electronics Association (CEA). CEA is the principal U.S. trade association of the $155 billion consumer electronics industry. CEA's more than 2,100 members are involved in the design, development, manufacturing, distribution and integration of audio, video, in-vehicle electronics, wireless and landline communication, information technology, home networking, multimedia and accessory products, as well as related services that are sold through consumer channels. CEA's members include large and small manufacturers as well as many leading retailers. CEA also produces the nation's largest annual trade event, the International CES. We commend the Subcommittee for holding this hearing on the important issue of energy efficiency and appreciate the opportunity to provide the views of our membership.

Our members design, make and sell the products and services that keep us connected, informed and entertained. Our companies drive the U.S. economy and ensure that America remains the world's innovation leader.

The hallmarks of our industry are dynamism and rapid change. This constant innovation, complemented by voluntary programs and initiatives, is the primary driver of improved energy efficiency in our industry. In order to meet consumer expectations, it is essential that our products use electricity efficiently and effectively. Efficient use of energy minimizes heat generation, the prime enemy of component performance and longevity. Energy efficiency is also essential to minimizing costs associated with design and components, such as heat sinks. Beyond improvements in design, there also are ongoing industry trends which naturally drive, support and sustain the increasing energy efficiency of electronics. These trends include convergence, miniaturization, portability and the transition from analog to digital technology.

CEA's members are committed to energy efficiency and conservation.

For many years, the consumer electronics industry has worked cooperatively with government agencies in pursuit of successful voluntary, market-oriented programs and initiatives, such as Energy Star, which highlight and support energy efficient product design and purchasing. To date, the Energy Star program for consumer electronics and residential office equipment has saved 18.8 billion kWh of energy and avoided emissions totaling 3.8 million metric tons of carbon equivalent. Recently, consumer electronics manufacturers have focused on new industry-led standards at the national, regional and

international levels that relate to and support energy efficiency. Together, these voluntary initiatives have transformed the market and delivered more energy efficient electronics to consumers and businesses.

As the consumer electronics industry's principle trade group, CEA has taken a comprehensive, multi-faceted approach to addressing energy efficiency for our industry sector. Specifically:

1. CEA conducts research and analysis to ensure that policy makers and the public have accurate information.

Many estimates of consumer electronics energy consumption still rely on data developed in the late 1990s. Yet, consumer electronics products have changed dramatically over the last decade, and their energy consumption characteristics have improved, particularly due to innovation as well as the success of the Energy Star program. To provide better data to policy makers, CEA commissioned a recently completed independent analysis of consumer electronics energy use that covered all significant energy-using product categories in our industry. This landmark study provides a more refined assessment than prior studies, particularly for product usage. The full report, titled "Energy Consumption by Consumer Electronics in U.S. Residences," is available on CEA's website at www.ce.org/energy. Among the findings are the following:

- Excluding digital televisions (DTVs), residential consumer electronics consume 11% of residential electricity and 4% of total U.S. electricity;

- Annual residential consumer electronics electricity consumption equals 147 TWh, excluding DTVs;
- There has been dramatic growth in the installed base of products, especially PCs, computer monitors, set-top boxes and DVD players;
- Active-mode power consumption varies with device type and has increased for TVs and PCs but decreased for computer monitors;
- With the exception of complex set-top boxes, standby power consumption has generally decreased, a testament to the effectiveness of the Energy Star program.

As indicated, the only significant category excluded from this study is digital televisions. The existing standard for measuring TV energy consumption in on-mode is outdated and inappropriate for measuring power consumption for today's digital televisions. To address this issue, an international industry standards development committee involving a wide variety of private and public sector stakeholders recently completed the draft of a new standard that will provide a fair measurement of TV energy use across all types of DTV displays. Simultaneously, CEA initiated a project to collect TV power consumption data using the new international draft standard so that CEA's overall energy use study can be updated this summer. The DTV data also will be provided to support the Energy Star program, which is revising its specification for televisions.

As noted above, standby power consumption has not decreased for the category of set-top boxes, which includes cable and satellite set-top devices. Currently, there is no Energy Star program covering set-top boxes. CEA believes this product category represents an

important opportunity for Energy Star, and CEA is working with the U.S. Environmental Protection Agency which this spring began development of a new Energy Star specification for set-top boxes.

In addition to our energy use analysis, CEA commissioned another study, to be completed this week, which examines the energy-saving and emissions-reducing benefits of using consumer electronics products for telecommuting and e-commerce. Telecommuting reduces energy consumption associated with transportation to and from the office and, in some cases, a portion of the energy associated with commercial office space. The draft final version of this study estimates that telecommuting today reduces energy consumption by an amount equivalent to the annual electricity consumption of between approximately 0.8 million and 1.1 million U.S. households.

2. CEA has been a leader in developing industry standards supporting energy efficiency.

The industry standards setting process is an important forum for developing standards relevant to energy efficiency. CEA, an American National Standards Institute-accredited standards development organization, has developed two voluntary industry standards related to energy use in set-top boxes. As noted earlier, CEA and its members also have supported the development of a new international industry standard for measuring power consumption for today's digital televisions, as the current decades-old standard is inappropriate for today's DTVs.

3. CEA informs consumers about the energy use of consumer electronics.

CEA believes that our industry has a responsibility to inform consumers about the energy use of their products. This year, CEA launched a new consumer education initiative built on myGreenElectronics.org, a comprehensive resource focused on the energy-conscious and environmentally responsible use of consumer electronics at all phases of a product's life cycle. The energy efficiency portion of the site presents common-sense consumer tips for saving energy with electronics. Additionally, CEA added an energy-use calculator to myGreenElectronics.org which allows consumers to calculate and understand, in terms of watts and dollars, how much is required on average to power their electronic products. Finally, the website includes a tool that enables consumers to search for products for which energy efficiency is a selling point.

4. CEA showcases and promotes energy-efficient products.

CEA has used the International CES as a platform to highlight the importance of energy efficiency and conservation, including displays of energy efficient products and technologies; conference sessions on energy efficiency and public policy; and an eco-design award for environmentally-friendly products.

In addition, CEA organized an energy efficiency product technology demonstration on Capitol Hill on May 16, 2007, which highlighted energy efficiency and innovation in several product categories, including desktop and laptop computers, cable set-top boxes, and televisions.

The best way to encourage improved energy efficiency in the consumer electronics industry is through the Energy Star program.

The market for consumer electronics is dynamic, highly competitive and characterized by rapid innovation, significant time-to-market pressures, rapid rates of market penetration, and rapid transition from one technology to another. Consumer electronics products are vastly different by design, function, consumer use and performance than the residential, industrial and commercial appliances and electro-mechanical equipment that have been subject to the U.S. Department of Energy standards and rulemaking process.

Unlike residential, industrial and commercial appliances, which tend to be designed for a single purpose, consumer electronics typically offer several features and functions and are used in at least three ways that distinguish them from appliances. First, people use consumer electronics to communicate with one another; they also use consumer electronics for entertainment; and, finally, people use consumer electronics to receive and store information.

In light of these characteristics and considerations, the best public policy for encouraging and supporting energy efficiency in the consumer electronics industry is the Energy Star program. This government-industry partnership program, which covers more than a dozen major categories of electronics, provides the necessary flexibility, market-orientation, competitive incentive and consumer recognition that support energy efficiency for our dynamic industry. Most importantly, Energy Star has a long and established track record of success.

As a voluntary, consumer-oriented program, Energy Star has resulted in significant energy savings and reduced greenhouse gas emissions.

The consumer electronics industry is a strong supporter of the voluntary, market-driven and national approach to saving energy represented by the federal Energy Star program (www.energystar.gov). This successful government-industry effort, which benefits from strong participation by manufacturers, captures a broad range of consumer electronics and creates a competitive incentive for energy savings. The Energy Star program, coupled with the natural trends toward energy efficiency in electronics design, provides consumers with the products and features they demand, along with a logo recognized by almost two-thirds of consumers.

Energy Star is clearly the best policy approach to saving energy in the consumer electronics sector, and it has resulted in significant energy savings and reduced greenhouse gas emissions. As noted earlier, the Energy Star program for consumer electronics and residential office equipment has saved 18.8 billion kWh of energy and avoided emissions totaling 3.8 million metric tons of carbon equivalent, according to the U.S. Environmental Protection Agency's latest annual report on Energy Star. In addition, according to EPA, consumer electronics accounted for 31 percent of energy saved by all residential products in the Energy Star program. Finally, consumer electronics including computers and monitors represent 55 percent or 1.1 billion of the two billion purchases of Energy Star products since 1992.

While continuing to target and reduce power consumption of products in low-power standby mode, Energy Star is evolving to address active mode power consumption.

For most of its history with consumer electronics, the Energy Star program has focused on reducing standby-mode power consumption. Recently, Energy Star has begun to take a more holistic view of a product's energy use by considering active-mode electricity use as well. The Energy Star specifications for computers and imaging equipment take into account both active and standby mode power consumption. The revised Energy Star specification for televisions as well as the new Energy Star specification for set-top boxes also will take into account active mode energy use in addition to standby. For these and other consumer electronics products, the consideration of active mode power use presents new challenges related to operating modes, product features, and consumer usage patterns. CEA and its members will continue to work closely with EPA to ensure outcomes that achieve energy savings while protecting innovation and consumer choice.

Despite its success, the Energy Star program is threatened by unnecessary regulation at the state level.

In 2005, the California Energy Commission (CEC) imposed unprecedented regulations limiting the energy consumption of several categories of consumer audio and video products as well as external power supplies, also known as AC power adapters, which are used with a wide range of consumer and commercial products. We support the CEC's focus on energy use, but we are very concerned about the CEC's specific approach.

To support its regulations for consumer audio and video products, the CEC relied on outdated and inaccurate information about energy consumption which led to erroneous conclusions about cost-effectiveness and energy savings. Moreover, for one particular product category not yet on the market in the U.S., digital television converter boxes, the CEC relied on claims that tens of thousands of units were already in the hands of California consumers.

Of particular concern relevant to Energy Star is that the CEC's new mandatory regulations for consumer audio and video products and external power supplies are based on the voluntary thresholds established within the Energy Star program. Though the Energy Star specifications on which the CEC based its regulations have been superseded by new Energy Star specifications in several cases, they were never intended as nor negotiated to be mandatory limits after any set period of time. For external power supplies, the CEC's mandatory regulations are identical to the voluntary Energy Star specifications for this same category. These voluntary criteria for power supplies had just been negotiated by Energy Star program representatives and industry several months prior to the CEC's action which made them mandatory.

The success of the Energy Star program is in fact due to its voluntary nature. Energy Star program criteria are the result of broad industry participation, careful negotiation, and recognition of market and technological facts and limitations. Contrary to the spirit and purpose of the Energy Star program, the California Energy Commission, in its revised Appliance Efficiency Regulations, created mandatory regulations based on voluntary

specifications. The CEC's action threatens to undermine the future success of the Energy Star program itself. Once the voluntary Energy Star program criteria are viewed as potential mandates, uncertainty among manufacturers increases, and the negotiations leading to the program criteria would be altered. In a recent CEA member survey, more than half of respondents indicated that mandatory standards based on Energy Star program criteria would discourage future participation in the Energy Star program. In this way, the CEC's mandatory standards for consumer audio and video products and external power supplies will weaken the national Energy Star program, with unfortunate consequences for consumers and manufacturers, as well as energy savings in general.

In light of these issues and concerns, CEA has urged the CEC to withdraw its regulations for consumer audio and video products and recognize the success of voluntary programs such as Energy Star, which better support energy efficiency in the consumer electronics market.

Conclusion

In many ways, electronics are part of an energy savings solution. Many home networking products help save energy by providing increased control over home heating, cooling and lighting systems. Information technology and telecommunications products allow teleworking and remote access to information and entertainment content, both of which save fuel and reduce greenhouse gas emissions. In addition, electronics are key enabling technologies that drive energy efficiency in various other industrial sectors such as automobiles and manufacturing.

This committee's focus on energy efficiency is important and necessary. As policy makers consider programs and policies that support the efficient use of energy, we urge Congress to support innovation and promote consumer-oriented initiatives like Energy Star which are the keys to energy efficiency achievements for the consumer electronics industry.

Thank you again for the opportunity to share CEA's position on this important public policy issue. I look forward to addressing any questions you may have.