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California Energy Commission

**DOCKETED**

**12-AAER-2A**

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VIA EMAIL AND FIRST-CLASS MAIL

May 9, 2013

California Energy Commission

Dockets Office, MS-4

Re: Docket No. 12-AAER-2A

1516 Ninth Street

Sacramento, CA 95814-5512

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Re: Comments of TiVo Inc. in response to the Invitation to Participate in the Development of Appliance Energy Efficiency Measures, Docket No. 12-AAER-2A

To The Commission:

TiVo Inc. (“TiVo”) appreciates the opportunity to file these comments in response to the Commission’s Invitation to Participate in the above-entitled matter. TiVo played a large part in inventing digital video recorders (DVR), and in developing the market for retail DVRs. At the same time, we are working toward innovating new features and increasing the energy efficiency of entertainment and television reception for consumers. TiVo is both a small business, and by far the largest producer of set-top boxes sold at retail and therefore will likely be significantly and vitally affected by any contemplated regulation adopted on set-top boxes.

### **Product Lifetime**

Consumer electronics devices evolve very quickly as a result of the constant innovation and change in the consumer electronics industry. As a result, the products that are available at electronics stores varies significantly from year to year. However, set-top boxes – particularly ones sold at retail, as may TiVo products are – are complex devices which take a large amount of engineering to bring to market.

TiVo’s products have, in the past, typically been introduced with a two-year product cycle. That is, about every other year TiVo has introduced new product(s) and phased-out old products. The Commission should note that this may be significantly longer than non-retail devices, such as those sold directly to cable and satellite operators. In particular, any significant change in requirements to

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TiVo's future products that requires any significant changes to product design must be well-described and final *more than* two years in advance of the effective date of those requirements.<sup>1</sup>

Notwithstanding development cycles and product innovations, TiVo's products, once installed in consumers' homes typically remain installed, connected and used for more than five years.<sup>2</sup>

### Product Development Trends

The set-top box marketplace is in the midst of a transition from one-box-per-TV to a multi-room environment. Traditionally, one set-top box has been necessary per television. Over the past few years, set-top box manufacturers and service providers have begun transitioning to configurations where there is one high-capability set-top box in the home, and one or more "thin" clients, smartphones, tablets, PCs and other devices.

For example, TiVo recently introduced the TiVo Mini, a thin client that is able to connect to recent TiVo Premiere set-top boxes.<sup>3</sup> Moreover, TiVo is aggressively promoting a "whole home" experience.<sup>4</sup>

The Commission should take caution when attempting to set energy efficiency regulations, so as to avoid a perverse incentive *away* from a whole-home environment. Because a multi-room-capable set-top box is designed to serve several clients simultaneously, it is necessarily more highly-featured and more power consumptive than a single-television set-top box. However, this *does not* mean that such a box is adverse to energy efficiency. To the contrary, the Commission should consider the total power consumption *per household*, including the set-top box, thin clients, smartphones and other devices.

The transition to whole-home devices comprises a net decrease in power consumption which the industry has developed without regulatory interference, and the Commission should avoid setting energy efficiency regulations which would serve to hinder the development and deployment of whole-home set-top boxes.

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<sup>1</sup> In fact, if you consider that TiVo may be halfway through a two-year development cycle for example, regulatory changes that require significant product changes are unlikely to be achievable within *three* years – finishing the existing product development cycle without the regulatory-related changes (12 months), plus one whole two-year cycle.

<sup>2</sup> See TiVo 10K filed March 15, 2013 at p. 42 (66 month period used to recognize product lifetime subscription revenues) available at <http://investor.tivo.com/phoenix.zhtml?c=106292&p=irol-sec>.

<sup>3</sup> See the TiVo Mini product page at <http://www.tivo.com/products/tivo-mini/index.html>.

<sup>4</sup> See the TiVo Whole Home page at <http://www.tivo.com/products/tivo-wholehome/index.html>.

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**Power Management and Wake From Sleep**

Power Management and Wake From Sleep functions are intertwined with set-top box features, particularly for recording devices such as TiVo sells. Often desirable features are in conflict, which necessitates making a trade-off during product design. One such conflict is between the time it takes for a set-top box to transition from standby to active modes – it is desirable to have the lowest possible power consumption in standby and the quickest transition to active mode. For TiVo’s products, we have found that the lower the power consumption in standby, the longer transition to active takes. Of course, a long transition to active would be very disruptive to consumer expectations. Consumers expect to be able to turn on their television equipment and be able to watch/record television without delay.

With this conflict in mind, we suggest that any efficiency regulations considered should allow for a “scheduled standby” mode, similar to programmable HVAC thermostats. This feature allows the set-top box to be programmed to go into a deeper sleep (with the attendant longer transition to active period) during days and times when the set-top box is unlikely to be in use – such as between midnight and 6 A.M., or weekday days.

**Competition and Small Businesses**

The television equipment and television service provider businesses are dominated by several very large companies. For example, Comcast and Cisco each have a market capitalization over one hundred billion dollars (\$100,000,000,000.00) and tens of thousands of employees. In contrast, TiVo is a California-based business with around 650 employees. In fact, TiVo may be the only small business with a significant presence in the set-top box business.

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TiVo is committed to serving the needs of our customers with product features, energy efficiency and environmental stewardship. We look forward to working with the Commission in this rulemaking process.

Sincerely,

/s/

Matt Zinn  
Senior Vice President, General Counsel,  
Corporate Secretary and Chief Privacy  
Officer

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