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**ARRIS Group, Inc. Comments -- Docket Nos. 17-AAER-11 (STBs) and 17-AAER-12
(Low Power Mode & Power Factor)**

Additional submitted attachment is included below.



June 16, 2017

California Energy Commission
Docket Office, MS-4
1516 Ninth Street
Sacramento, CA 95814-5512

Re: Docket Nos. 17-AAER-11 (Set-Top Boxes) & 17-AAER-12 (Low-Power Mode & Power Factor)

ARRIS Group, Inc. (ARRIS) hereby submits its comments on the California Energy Commission's Invitation to Participate in the Phase 2 Appliance Efficiency Pre-Rulemaking for Set-Top Boxes, Low-Power Mode, and Power Factor. ARRIS shares the Commission's goal of achieving greater energy efficiency for household appliances and is committed to developing innovative energy-efficient equipment solutions. Our commitment to energy efficiency is an integral aspect of improving our offerings and meeting marketplace demand for greener products. The success of industry-led, voluntary initiatives to enhance energy efficiency for multichannel video programming distributor (MVPD) set-top boxes and small network equipment, for example, demonstrates that regulatory oversight is unnecessary, and may impose significant costs and impede innovation.

Set-Top Boxes

One example of ARRIS's commitment to energy efficiency is ARRIS's role as a founding member and signatory to the industry-wide Voluntary Agreement for Ongoing Improvement to the Energy Efficiency of Set-Top Boxes.¹ In December 2013, ARRIS joined the U.S. Department of Energy, the Natural Resources Defense Council (NRDC), the American Council for an Energy-Efficient Economy (ACEEE), the Appliance Standards Awareness Project (ASAP), the Consumer Electronics Association (CEA), and the National Cable & Telecommunications Association (NCTA) in announcing non-regulatory energy efficiency standards for MVPD set-top boxes under the Voluntary Agreement that saved consumers nearly \$1.2 billion in energy costs and avoided 6.5 million metric tons of CO₂ emissions in just three years.² The Voluntary Agreement makes set-top box energy efficiency more transparent, as it

¹ Voluntary Agreement for Ongoing Improvement to the Energy Efficiency of Set-Top Boxes (Jan. 1, 2014) ("Voluntary Agreement" or "Agreement"), <http://www.ncta.com/energyagreement>.

² See Press Release, NCTA, *Consumers Saved \$646 Million in 2015 from Energy Efficient Set-Top Boxes* (Aug. 9, 2016), <https://www.ncta.com/news-and-events/media-room/content/consumers-saved-646-million-2015-energy-efficient-set-top-boxes>. See also Press Release, U.S. Dep't of Energy, *U.S. Energy Department, Pay-TV Industry and Energy Efficiency Groups Announce Set-Top Box Energy Conservation Agreement; Will Cut Energy Use for 90 Million U.S. Households, Save Consumers Billions* (Dec. 23, 2013), <https://energy.gov/articles/us-energy-department-pay-television-industry-and-energy-efficiency-groups-announce-set-top>. Savings are projected to increase to nearly \$1 billion in 2016, and more than \$1 billion annually with full implementation of more rigorous standards that become applicable this year. See D+R International, *2015 Annual Report – Voluntary Agreement for Ongoing Improvement to the Energy Efficiency of Set-Top Boxes*, at 8, 22 (Aug. 8, 2016), <http://www.energy-efficiency.us/library/pdf/SetTopBox-AnnualReport-2015.pdf> (STB 2015 Annual Report).

calls for (i) service providers to submit annual confidential compliance reports to the Agreement's independent administrator; (ii) audits of compliance reports and/or field verification of actual set-top box performance; (iii) posting of set-top box energy efficiency on service providers' websites for subscribers to see; and (iv) creation of aggregate Annual Reports.³ These Annual Reports make valuable data available to the public, including the progress made on specific energy efficiency commitments and the impact on national energy consumption.⁴

The Voluntary Agreement's fundamental achievement is that it allows industry leaders to adopt an approach that ensures the realization of energy savings goals without stifling innovation.⁵ Counterpart agreements in the European Union (EU), Canada, and Australia have demonstrated that industry-initiated agreements have become an internationally-approved approach for delivering energy efficiency measures.⁶ The Voluntary Agreement has overwhelming industry support from the major manufacturers and service providers, as well as leading energy efficiency advocates.⁷

ARRIS respectfully requests that the Commission refrain from imposing separate standards for set-top box energy efficiency or additional reporting obligations, and instead endorse the successful Voluntary Agreement.

Low-Power Mode

While ARRIS generally supports an approach that minimizes power consumption of appliances when not in active use, low-power standards do not make sense for complex products and may come at the expense of usability for the consumer. In particular, applying the same standby or network standby limit to products without regard to their complexity causes design compromises which, in turn, often cause the end user to disable all power management so that the user can continue to use device features. ARRIS has experienced this issue in the EU, where

³ See Voluntary Agreement §§ 7.1, 7.4, 7.6, 7.8, 8. To ensure the integrity of reporting, field verification is carried out annually in between 80 and 100 homes, at least 12 percent of which must be located in California. See *id.* § 8.3.1.

⁴ See, e.g., STB 2015 Annual Report. MVPD-specific reports are also available. See CableLabs, Energy Reporting, <http://energy.cablelabs.com/>.

⁵ Importantly, the Voluntary Agreement accommodates innovation and changes in the marketplace by incorporating a new features process and allowing for annual review and revision of the Agreement. See Voluntary Agreement §§ 10, 11 & Annex 11.

⁶ See Voluntary Industry Agreement to Improve the Energy Consumption of Complex Set Top Boxes within the EU (June 19, 2013), <http://cstb.eu/wp-content/uploads/2015/06/Voluntary-Industry-Agreement-CSTBs-V-3-1-Final.pdf>; Canadian Pay-TV Set-top Box Energy Efficiency Voluntary Agreement (Jan. 12, 2017), <http://www.energyefficiency-va.ca/wp-content/uploads/2017/01/STB-CEEVA-Final-January-12-2017.pdf>; Subscription Television Industry Voluntary Code for Improving the Energy Efficiency of Conditional-Access Set Top Boxes (Aug. 2014), https://www.astra.org.au/images/pages/STV_STB_Energy_Efficiency_Code_v4_August_2014.pdf.

⁷ Other signatories include MVPDs (Comcast, AT&T/DirecTV, Dish Network, Charter/Time Warner Cable/Bright House, Verizon, Cox Communications, Altice, and CenturyLink), equipment manufacturers (Technicolor and EchoStar Technologies), and advocates for energy efficiency and the environment (NRDC, ACEEE, and ASAP). See Energy Efficiency Voluntary Agreements, <http://www.energy-efficiency.us/>.

regulations provide the same allowance for a high-definition DVR set-top box as for a simple thin client; the thin client can achieve low power with limited compromises in functionality, while a DVR cannot.

The Voluntary Agreement approach provides a more effective way to reduce energy usage across different types of devices, addressing the entire use cycle of energy consumption, not just standby consumption. In addition to the set-top box Voluntary Agreement discussed above, ARRIS is a signatory to the Voluntary Agreement for Ongoing Improvement to the Energy Efficiency of Small Network Equipment (SNE Voluntary Agreement).⁸ The SNE Voluntary Agreement has resulted in substantial reductions in energy use by modems and other SNE. Nearly 90 percent of home Internet modems, routers, and other equipment purchased in 2015 met the new energy efficiency standards, and the average maximum energy level permitted by the new commitments represented approximately an 18 percent reduction in energy usage from other recently-deployed models.⁹

Importantly, the SNE Voluntary Agreement sets standby power allowances based on the functionality embedded in a product, providing more complex multifunctional devices a higher allowance than simpler products. This layered approach is based on the successful Energy Star programs and is better suited to complex technological products that tend to require “always on” features. ARRIS encourages the Commission to refrain from adopting low-power standards, and endorse the SNE Voluntary Agreement because it maintains the minimum functionality needed to ensure customer satisfaction while maximizing power savings.

Power Factor

As the Commission recognizes in its discussion around the Power Factor issue, most products that consume more than 50 Watts are regulated at the federal level, and are outside the scope of this proceeding.¹⁰ To the extent the Commission is proposing to impose broad Power Factor standards on devices that are not federally regulated, such an approach would run counter to the energy efficiency goals of the Commission and would not result in savings for consumers. Households typically include both products with a capacitive input (*i.e.*, devices with switch

⁸ Voluntary Agreement for Ongoing Improvement to the Energy Efficiency of Small Network Equipment (as amended July 27, 2016), <http://www.energy-efficiency.us/library/pdf/SNE-VoluntaryAgreement.pdf>. Like the set-top box Voluntary Agreement, the SNE Voluntary Agreement includes reporting requirements and makes energy efficiency data available to the public. See 2015 Annual Report – Voluntary Agreement for Ongoing Improvement to the Energy Efficiency of Small Network Equipment (Aug. 8, 2016), <http://www.energy-efficiency.us/library/pdf/SNE-AnnualReport-2015.pdf>.

⁹ *New Energy Conservation Agreement for Home Internet Equipment Paying Early Dividends for Consumers*, Business Wire, Aug. 9, 2016, <http://www.businesswire.com/news/home/20160809006083/en/Energy-Conservation-Agreement-Home-Internet-Equipment-Paying>.

¹⁰ California Energy Commission, Phase 2 Pre-Rulemaking Invitation to Participate Presentation, Slide 95 (May 11, 2017), http://docketpublic.energy.ca.gov/PublicDocuments/17-AAER-05/TN217523_20170510T135340_Invitation_to_Participate_Presentation.pdf. In addition, the only other major jurisdiction with a broad Power Factor correction law is the EU, and the EU limit applies only to products over 75 Watts. At the most recent review, the EU rejected calls to change the scope of the law to include products that consume less than 75 Watts.

mode power supply units, such as set-top boxes), and products with an inductive input (*i.e.*, products with motors, such as HVAC, refrigerators, and washing machines). These two categories of devices must be considered in tandem, on a whole-home basis, to get a meaningful and accurate measure of Power Factor for the home. In general, in-home usage of the two types of devices tend to balance out the Power Factor for the home – devices with inductive inputs typically have higher power consumption than devices with capacitive inputs.

However, focusing just on non-federally-regulated devices (*i.e.*, devices with capacitive inputs, but not devices with inductive inputs) would have a distorting effect on the overall Power Factor for the home. In other words, the Power Factor for the home would be worse than if devices with inductive inputs were also considered. This would lead to utilities having to generate more energy than needed for the home, while having no impact on the customer's energy usage. It would also lead to higher retail equipment costs for consumers. Specifically, ARRIS estimates a retail cost increase of approximately \$3.00 for products subject to Power Factor standards.

For these reasons, ARRIS requests that the Commission decline to set Power Factor standards or impose additional reporting obligations.

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ARRIS appreciates this opportunity to comment and looks forward to further discussions with the Commission. Please contact me if you have any questions regarding this matter.

Sincerely,

/s/ Jason E. Friedrich

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