



Pacific Gas and
Electric Company®

A Sempra Energy utility®



SOUTHERN CALIFORNIA
EDISON®

Energy for What's Ahead®

October 29, 2020

Mr. James Kwon
ENERGY STAR for Consumer Electronics
U.S. Environmental Protection Agency
William Jefferson Clinton Building
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Topic: Draft 1 of the ENERGY STAR Version 9.0 Television Specification

Dear Mr. Kwon:

This letter comprises the comments of the Pacific Gas and Electric Company (PG&E), San Diego Gas and Electric (SDG&E), and Southern California Edison (SCE) in response to the United States (U.S.) Environmental Protection Agency (EPA) Draft 1 of the ENERGY STAR® Version 9.0 Television Specification (ES TV Specification).

The signatories of this letter, collectively referred to herein as the California Investor-Owned Utilities (CA IOUs), represent some of the largest utility companies in the Western U.S., serving over 32 million customers. As energy companies, we understand the potential of appliance efficiency standards to cut costs and reduce consumption while maintaining or increasing consumer utility of products. We have a responsibility to our customers to advocate for standards that accurately reflect the climate and conditions of our respective service areas, so as to maximize these positive effects.

We appreciate the opportunity to provide comments about Draft 1 of the ES TV Specification. We applaud and support EPA's effort to revise the existing TV specification, with the goal to make the updated specification more representative of average consumer use of the latest TV technologies. We strongly urge EPA to consider the following comments:

- 1. The CA IOUs note that the test method is not complete, nor will the test kit be available, and encourage EPA to provide sufficient time in the next comment period to allow stakeholders to conduct a thorough evaluation of the test method.**

In the webinar hosted by EPA on September 30, 2020, participants noted that several key test configurations that are critical to the successfully testing of TVs are not yet finalized. Outstanding areas for completion include the accuracy of the camera photometer in measuring screen-average luminance as defined in Section 4.4.1(i) as well as setting the distance between the camera photometer and the TV under test in Section 4.4.2. In addition, we understand that the test kit, including the test equipment and software that supports automatic testing, will not be available prior to the comment period deadline of October 29, 2020. Therefore, stakeholders cannot yet evaluate and provide feedback on the test method included in Draft 1 of the ES TV Specification.

We expect that the outstanding areas for completion will be finalized in Draft 2 of the test method and the test kits will be widely available by that time. We encourage EPA to provide ample time in the

comment period for Draft 2 of the ES TV Specification to allow stakeholders, including manufacturers and energy efficiency advocates, to be able to conduct thorough evaluations of the test methods, including laboratory testing.

2. The CA IOUs recommend that EPA include Over-The-Air (OTA) and Over-The-Top (OTT) video interfaces in the video input signal configuration of the test method.

In Section 4.4. of Draft 1 of the ES TV Specification, the video input signal configuration specified is based on Section 5.2 Video Connection Priority of the Federal Test Method,¹ where only wired video connections including High-Definition Multimedia Interface (HDMI), Component video, S-video, and Composite video are considered as video input signal interfaces.

We note that these days, many U.S. cable TV customers are unsubscribing from cable service (i.e., “cord-cutting”), in favor of on-demand content streaming over the internet. Instead of receiving video content from cable set-top-boxes via wired video interfaces, consumers are watching TV programs through Over-The-Air (OTA) broadcast and Over-The-Top (OTT) streaming services. More than three million cable subscribers in the U.S. cut their cable TV cord in 2016-2017 alone.² According to Nielsen’s May 2018 population estimates,³ OTA TV households in the U.S. grew from 12 million in 2014 to 16 million in 2018, representing approximately 14 percent of U.S. TV households. This represents a Compound Annual Growth Rate of six percent, which is significantly faster than U.S. annual household CAGR of around 0.9 percent from 2014 to 2018.⁴

Furthermore, consumer research from Parks Associates⁵ shows that 25 percent of U.S. broadband households use an antenna with OTA to watch local broadcast channels, up from 15 percent in 2018. The growth in OTA households is expected to be further boosted by the deployment of the next generation of digital broadcast TV standard, Advanced Television Systems Committee (ATSC) standard 3.0, which is expected to be available to more than 40 U.S. TV markets this year.⁶

Cord-cutting is also driving increased penetration of Smart TVs as consumers shift to OTT content, such as Netflix[®] and YouTube[®]. According to a Statista Smart TV market survey⁷, the total Smart TV household penetration in the U.S. increased rapidly from about 9 percent in 2012 to 60 percent in 2020. The network interfaces, such as Wi-Fi supported by Smart TVs, allow consumers to watch OTT content received directly from Local Area Network without the need of any additional devices, such as a set-top-box or a streaming device such as a Roku[®] stick.

In summary, the above data show that OTA and OTT video interfaces increasingly represent the average consumer use of modern TVs. Therefore, we recommend that the Final Draft of the ES TV Specification address the additional energy consumed by the TV tuner, and the radio frequency (RF) and wireless circuitry used by TVs accessing OTA and OTT content. To do so, we suggest incorporating OTA and OTT video interfaces in the input signal configuration of the test method. In support of our recommendation, we note that the latest Chinese energy efficiency requirements and

¹ [10 CFR 430, Subpart B, Appendix H. Uniform Test Method for Measuring the Power Consumption of Television Sets](#)

² [Cord cutting bad globally, but worst in the U.S.: HIS Markit](#)

³ [The Nielsen Local Watch Report: The Evolving Over-The-Air Home](#)

⁴ [US Census historical household data, Table HH-6](#)

⁵ [TV antenna usage in US broadband households jumped to 25% in 2019 and is expected to grow more as COVID-19 keeps consumers at home](#)

⁶ [ATSC 3.0 Deployments: Where and when will NextGen TV be available?](#)

⁷ [Smart TV market revenue in the United States from 2014 to 2025](#)

test method for TVs,⁸ specifies the RF input interface (i.e., OTA) as the preferred input signal interface.

3. The CA IOUs support the additional Standby Mode tests included in Draft 1 of the ES TV Specification and recommend that EPA include wake time as a certification criterion.

According to a February 2019 IHS Markit survey,⁹ smart speaker penetration in U.S. broadband households has reached more than 20 percent. As such, we applaud EPA for including smart speakers as part of the Standby Mode test and encourage EPA to investigate the potential impact to TV energy consumption due to the inter-operation between Smart Speakers and Smart TVs.

We observe that Draft 1 of the ES TV Specification specifies a wake time measurement threshold of ten seconds when conducting the Standby Mode test without a Smart Speaker (see Section 4.6.1). However, Draft 1 of the ES TV Specification does not specify a wake time threshold when conducting the Standby Mode test with a Smart Speaker (see Section 4.6.2). We recommend that the Final Draft of the ES TV Specification include a wake time measurement threshold for the Standby Mode test with a Smart Speaker. Furthermore, we recommend that EPA include a wake time as a certification criterion for operation with and without a Smart Speaker. We expect that a prompt wake time will ensure consumer satisfaction with their ENERGY STAR-qualified TVs and reduce the frequency of users disabling the Standby Mode energy-saving features.

We note that a related ENERGY STAR program, Set-top Box Specification Version 5.1,¹⁰ specifies a wake time of 15 seconds for a set-top box to go from Sleep Mode to On Mode. We recommend that EPA adopt the same approach by specifying a specific wake time as a certification criterion, and we suggest ten seconds as an achievable criterion.

4. The CA IOUs recommend that the Final Draft of the ES TV Specification include a time limit for operation in Standby-Active, High Mode.

Section 3.2.5 of Draft 1 of the ES TV Specification currently specifies that the time period for a TV to enter Standby-Active, High Mode from Standby-Active, Low Mode or Standby-Passive Mode shall be less than or equal to 15 minutes. However, the total maximum time allowed to stay at Standby-Active, High Mode in a certain time period, such as 24 hours, is not defined. Therefore, a TV is allowed to enter Standby-Active, High Mode as many times as desired, as long as it does not exceed 15 minutes each time. Since energy use in Standby-Active, High Mode can be as much as 10-20 times higher than energy use in Standby-Active, Low Mode or Standby-Passive Mode, we recommend that the Final Draft of the ES TV Specification encourage Original Equipment Manufacturers to minimize the time spent in Standby-Active, High Mode. We note that for a related ENERGY STAR program, Set-top Box Specification Version 5.1,¹¹ Section 3.2.2 limits time in Standby-Active, High Mode to, on average, two hours for any 24-hour time period.

We recommend that the Final Draft of the ES TV Specification define a maximum time that a TV is allowed to stay in Standby-Active, High Mode in a 24-hour time period, and suggest two hours as an achievable limit.

⁸ [GB 24850-2020, Minimum allowable values of energy efficiency and energy efficiency grades for flat panel TVs and set-top boxes, July 23, 2020.](#)

⁹ [IHS Markit Survey: Smart Speaker Household Access Reaches 13 percent of Internet Users](#)

¹⁰ [ENERGY STAR Program Requirements for Set-top Box Service Providers](#)

¹¹ *ibid.*

5. The CA IOUs recommend that all HDR10-capable TVs meet the HDR10 On Mode power requirements regardless of whether HDR10 Preset Picture Setting (PPS) is supported.

The On Mode requirements of Draft 1 of the ES TV Specification Section 3.3.1 state that if a TV does not support HDR10 PPS, then the TV will not be subject to the HDR10 PPS test and is not required to meet the HDR10 PPS power requirements.

We note that there are some HDR10-capable TVs on the market that do not support any kind of HDR10 PPS, but HDR10 programming can be viewed via the TV's user setting. Therefore, these TVs could still be tested with the HDR10 test procedure and evaluated with the HDR10 On Mode power requirements. In the interest of ensuring that the Final Draft of the ES TV Specification is representative of average use, we strongly recommend that HDR10 On Mode power requirements be met by any TV that supports HDR10 content regardless of whether HDR10 PPS is supported.

6. The CA IOUs request that the Final Draft of the ES TV Specification include the most up-to-date International Electrotechnical Commission (IEC) reference for test clips used in On Mode tests.

The test clip specified in Draft 1 of the ES TV Specification Section 4.4.3 On Mode Tests (IEC 62087 Ed. 3.0 Blu-ray Disc Dynamic Broadcast-Content Video Signal) refers to the withdrawn standard IEC 62087 Ed. 3.0, which was published in 2011. We note that IEC 62087 Ed 3.0-2011 has been replaced by IEC 62087 Ed 1.0 2015-2016. We understand that there is no difference in the test clips between the two standards, but in the interest of clarity and to avoid confusion, we recommend that EPA refer to the latest IEC standard, which is IEC 62087 Ed 1.0 2015-2016.

In conclusion, we would like to reiterate our support of EPA's proposals outlines in Draft 1 of the ES TV Specification. We thank EPA for the opportunity to be involved in this process and encourage EPA to consider the recommendations outlined in this letter.

Sincerely,



Patrick Eilert
Manager, Codes & Standards
Pacific Gas and Electric Company



Karen Klepack
Senior Manager, Building Electrification and
Codes & Standards
Southern California Edison



Kate Zeng
ETP/C&S/ZNE Manager
Customer Programs
San Diego Gas & Electric Company