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Observations Related to TV Data in CECâ€™s MAEDbS

See attached

Additional submitted attachment is included below.

January 19th, 2025

California Energy Commission
715 P Street
Sacramento, CA 95814

RE: Observations Related to TV Data in CEC's MAEDbS

The Northwest Energy Efficiency Alliance (NEEA) respectfully files these comments in response to the California Energy Commission's Request for Information (RFI) on Administrative Updates to the Title 20 Appliance Regulations (Docket #25 AAER 01).

NEEA is an alliance of more than 140 utilities and energy efficiency organizations working on behalf of more than 13 million energy consumers to increase the adoption of energy-efficient products, services and practices. To do this, NEEA identifies and removes market barriers to energy efficiency to drive permanent change throughout the supply chain. This formalized, lasting approach is known as market transformation. Over the last 28 years, NEEA has developed a proven market transformation framework built on data, technical expertise, and reciprocal, long-lasting relationships with regional and national market actors and organizations. NEEA's market transformation activities over these 28 years have saved enough electricity to power over half a million homes each year. In recent years, NEEA has supported the development of similar market transformation frameworks in California and Minnesota.

NEEA is an active and grateful user of the CEC's Modernized Appliance Efficiency Database System (MAEDbS) and applauds the CEC for making such robust and detailed market information available for televisions, as well as other appliances. NEEA is also appreciative of CEC's ongoing efforts to maintain the accuracy and relevancy of the database for manufacturers and users of the database. NEEA has been actively evaluating and analyzing television entries in the CEC MAEDbS database to assess data quality, consistency, and accuracy to support our market transformation efforts related to televisions, as the CEC's data represents the best available data source for model and performance information for televisions. As part of these ongoing efforts, NEEA has identified several issues that could benefit from improved clarity around definitions, data entry instructions, and removing opportunities for error when providing submittals. The following sections summarize our observations and provide recommendations for improving the federally tested television portion of MAEDbS. This feedback pertains only to televisions certified under federal test procedures and does not address signage displays or other appliance categories.

1. **Display Technology Type field is often incorrectly entered**

NEEA's analysis of the MAEDBS database, as of 12/2/2025, shows three major areas of concern with the "1 Display Technology Type" field:

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- 22.6% of entries (2408 of 9061) have entered "Laser" in this field. All of these entries appear to come from the same vendor, indicating a potential issue with spreadsheet upload of parameters or manual data entry. Per NEEA's evaluation, none of these units are laser TVs.
- 37.5% of entries (3398 of 9061) have selected "LCD (fluorescent backlight)" as the technology type. This is occurring from 21 different manufacturers, covering 37 different brands. Fluorescent backlights in LCD displays have been obsolete for over a decade, making it unlikely that any such displays are being actively manufactured today. NEEA's review indicates that none of them use a fluorescent backlight.
- 8.0% of entries (731 of 9061) are marked as LCD with a standard LED backlight, such as "LED (VA)" or "LED (IPS/PLS)", but these models are QLED displays (LCD with quantum dot LED backlight).

Selection of the erroneous laser and fluorescent backlight values covers over 60% of entries in MAEDBS. The reason for the "Laser" selection is unknown. However, the "LCD (fluorescent backlight)" mis-selection has a straightforward explanation. Currently, the list of available values includes only one option labeled "LCD," while other LCD-based technologies are listed under the marketing term "LED," such as "LED (VA)." Vendors are likely choosing "LCD (fluorescent backlight)" simply because it is the only option that explicitly uses the term "LCD." Updating the naming conventions in the Display Technology Type field and/or better defining these options would resolve this issue. Similarly, quantum dot displays may be mislabeled because users assume "LED (VA)" is correct, without realizing that a separate option exists for displays using quantum dots.

To address this issue, we recommend some effort to help improve clarity of product definitions and help users select the correct values could be helpful. For example, we could not identify a location where the different television categories are clearly defined and described. Including such definitions in the appliance regulations themselves, as well as relevant submittal information (e.g., Appliance Submittal packets), could help address this issue.

New display technologies are also emerging, particularly LCDs with RGB LED backlights, which offer meaningful performance and efficiency improvements. Some of these models are already registered in MAEDBS, but the current field structure does not distinguish them from standard LED-backlit LCDs. Adding one or more new Display Technology Type options would allow MAEDBS to accurately track the energy performance of these displays.

Possible clarifications to naming conversations are displayed in the table below.

Current Name	Recommended New Name	Notes
CRT - CRT	CRT - CRT [No change]	No displays entered with this selection currently
DLP - DLP	DLP - DLP	No displays entered with this

Current Name	Recommended New Name	Notes
	[No change]	selection currently
L - Laser	L - Laser [No change]	2408 displays have this selected incorrectly
LCDFB - LCD (fluorescent backlight)	LCDFB - LCD with fluorescent backlight	3398 displays have this selected incorrectly
LCoS - LCoS	LCoS - LCoS [No change]	No displays entered with this selection currently
LEDIPSPLS - LED (IPS/PLS)	LCDIPSPLS - LCD (IPS/PLS) with LED backlight	
LEDTN - LED (TN)	LCDTN - LCD (TN) with LED backlight	
LEDVA - LED (VA)	LCDVA - LCD (VA) with LED backlight	
MICLED - Micro-LED	MICLED - Direct View Micro-LED	
MINLED - Mini-LED	MINLED - Direct View Mini-LED	
OLED - OLED	OLED - OLED [No change]	
P - Plasma	P - Plasma [No change]	No displays entered with this selection currently
QLED - QLED	QDLCD - LCD with quantum dot LED backlight ("QLED")	
[N/A]	LCDRGB - LCD with RGB LED backlight	Displays are currently entered in MAEDBS what would qualify under this category
[N/A]	LCDFSC - LCD with RGB LED field sequential color backlight	No field sequential color displays available today, but the first FSC models are expected in 2026

Another option could be to consolidate some of the less common technologies into an "Other" category to prevent them from being selected erroneously. For example, LCoS (a projector technology), DLP, Plasma and CRT have no entries currently, and 100% of the Laser and LCD (fluorescent backlight) entries are incorrect. Further, breaking the current names into different categories could help users select the appropriate category. For example, options could be provided for: technology type (LCD, OLED, DVLED, Other), LCD type (TN, IPS/PLS, VA, Other), quantum dots (yes/no), and backlight type (white, blue, RGB, other). In this case, we would still recommend clearly defining and explaining the different categories.

2. **HDR flag set to FALSE, but HDR data entered**

Over 10% of MAEDBS entries (909 of 9061) have the "6 High Dynamic Range 10 (HDR10 Capable)" field set to False, but power and luminance data have been entered for these units anyway. When limits are established for On Mode power, the presence of HDR support will need to be clearly understood as it factors into the On Mode power equation. Inaccuracies could lead to incorrect compliance determinations once those limits take effect. Additionally, ways of improving the accuracy of the HDR flag itself may need to be considered, as the vast majority of TVs in the database (86%, or 7791 of 9061) indicate HDR support, and most models on the market today are HDR capable. Including some sort of error-checking within the data entry template itself, similar to the U.S. Department of Energy's submittal templates, could help assuage this issue. In this care, we would recommend an error show when HDR is false and data is entered anyways, or greying out those cells if HDR is false.

3. **Default SDR data and default HDR data are often identical, indicating possible copy-and-paste errors**

In 3.4% of MAEDBS entries (307 of 9061), the default SDR and default HDR data for power and/or luminance are exactly the same. This could indicate data being accidentally entered into the wrong fields by the vendor. As this is an unlikely occurrence, we recommend some form of data quality assurance in the MAEDbS template be considered to better control for erroneous values. Similar to the above recommendation, an error or suggestion to check the data could show when HDR and SDR data are identical.

These recommendations will streamline data entry for manufacturers, strengthen the overall quality of MAEDBS submissions, and support the long-term accuracy and reliability of the database as new display technologies continue to emerge. Thank you for your consideration of this feedback, and please do not hesitate to contact us if you would like to discuss these requests in greater detail.

Sincerely,

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