Revisions of the Ministerial Ordinance and the Notification
of the Ministry of Economy, Trade and Industry (METI)
under the Act on the Rational Use of Energy

Energy Efficiency Division
Agency of Natural Resources and Energy
Ministry of Economy, Trade and Industry

1. Background

Under the Act on the Rational Use of Energy (Law No. 49 of 1979; hereinafter referred to as the "Energy Efficiency Law"), the Minister of Economy, Trade and Industry shall establish and publicize standards for manufacturers/importers (hereinafter referred to as the "manufacturers, etc."), with regard to the improvement of the energy efficiency performance for the respective equipment which is specified in Cabinet Order under the Energy Efficiency Law including televisions.

In addition, the energy efficiency standards shall be established taking into consideration the highest level of energy consumption performance of the respective specified equipment and other related factors (as it is called the "Top Runner Program").

The Minister proposes new energy efficiency standards for televisions to promote rationalization of energy use pertaining to televisions in Japan in order to cope with the recent increase of energy consumption in the household sector, climate change, and so forth.

2. Outline of amendment

(A) Scope

Televisions：liquid crystal televisions（LCD TV）, organic electroluminescence televisions（OLED TV）

(B) Energy consumption efficiency and measurement method

The energy consumption efficiency shall be the "annual power consumption" and shall be the numerical value (kWh / year) calculated by the following formulas.

【TVs with built-in recording devices】

$$E＝\{(P_o－P_A／4)×(t_o－t_{orec})＋(P_{orec}－P_A／4)×t_{orec}＋P_{rec}×t_{rec}＋P_{epg}×t_{epg}＋P_s×(24×365－t_o－t_{rec}－t_{epg})\}／1000$$

In this equation, E, Po, P_A, Porec, Prec, Pepg, P_s, to, torec, trec, and tepg each represents the following numerical values.

E: Annual power consumption (kWh / year)

Po: Power consumption during operation (W)

P_A: Reduced power consumption by power saving function, etc. (W)

Porec: Power consumption during operation and recording (W)

Prec: Power consumption during recording (W)

Pepg: Power consumption at the time of EPG data acquisition (W)

P_S: Standby power consumption (W)

to: Annual standard operating time (h / year) 1861.5 (5.1 hours × 365 days)

torec: Annual standard operation and recording time (h / year) 146 (0.4 hours × 365 days)

trec: Annual standard recording time (h / year) 146 (0.4 hours × 365 days)

tepg: Annual standard EPG acquisition time (h / year) (depending on the device)

【TVs other than TVs with built-in recording devices】

$$E = \{(Po - P_A / 4) \times to + Pepg \times tepg + P_S \times (24 \times 365 - to - tepg)\} / 1000$$

In this equation, E, Po, P_A, Pepg, P_S, to, and tepg each represents the following numerical values.

E: Annual power consumption (kWh / year)

Po: Power consumption during operation (W)

P_A: Reduced power consumption (W) by power saving function, etc.

Pepg: Power consumption at the time of EPG data acquisition (W)

P_S: Standby power consumption (W)

to: Annual standard operating time (h / year) 1861.5 (5.1 hours x 365 days)

tepg: Annual standard EPG acquisition time (h / year) (depending on the device)

(C) Target fiscal year

    FY2026.

(D) Category and targeted standard value

    The categories and targeted standard values are as follows.

Table 1. Targeted standard values for Televisions

Category name	Category	Targeted standard value(kWh / year)

a	LCD TVs less than 2K	$0.00407A+30.08$
b	LCD TVs 2K or more and less than 4K	$0.00605A+56.13$
c	LCD TVs 4K or more	$0.00727A+62.99$
d	OLED TVs	$0.02136A\text{-}16.40$ ※75.0 if A <4,258

A: Screen area (square centimeter)

<u>(E) Method to determine achievement</u>

　Energy consumption efficiency of the equipment shipped in each fiscal year after the target year, which is weighted with the number of units shipped for each category, should not exceed the value of the energy efficiency standard, which is weighted with the number of units shipped for each category. However, the following two exceptions are provided.

① Consideration of additional functions
　If the category has not reached the energy efficiency standard, and the annual power consumption of each product, which was weighted with the number of units shipped by the category, does not exceed the energy efficiency standard by subtracting the estimated annual power consumption of each additional function shown in the table below, it can be considered that the consumption efficiency does not exceed the energy efficiency standard in the category.

Name of additional function	Estimated annual power consumption（kWh/year）
Built-in 2K tuner (2 or more)	2.8
Built-in 4K tuner (2 or more)	5.5
Built-in recording device (HDD 3.5 inch)	11.0
Built-in recording device (HDD 2.5 inch)	4.8
Built-in recording device (SSD)	3.7
Built-in Blu-ray disc recorder or DVD recorder (complying with 4K or more)	23.9
Built-in Blu-ray disc recorder or DVD recorder (complying with less than 4K)	16.7
Double speed Video display (complying with 4 K or more)	18.3
Double speed Video display (complying with less than 4K)	17.0

② Consideration of 8K equipment

If the TV is classified as liquid crystal 4K or higher and organic EL and does not achieve the energy efficiency standard, it can be considered that its energy consumption efficiency does not exceed the energy efficiency standard if its annual power consumption of each category, which is weighted with the units shipped, excluding 8K equipment, does not exceed the energy efficiency standard obtained by the weighted mean of the number of units shipped in the category.

4. Proposed date of entry into force

Around May of 2021*

*Target fiscal year for achieving the new standard is set to be FY2026.