

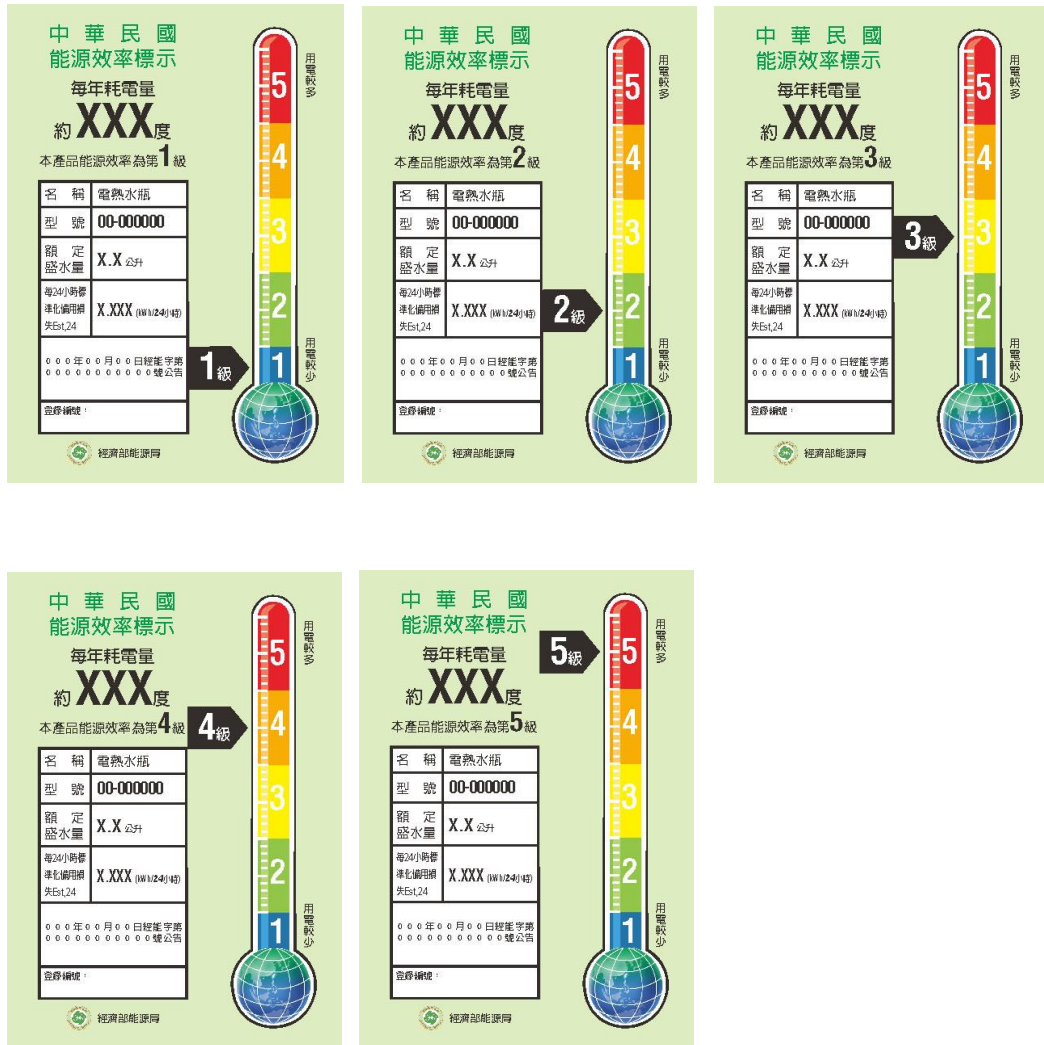
Requirements on Minimum Energy Performance Standard and Energy Efficiency Rating Labelling and Inspection for Electric Storage Tank Water Heaters (Amendment Draft)

Subject: Amendment to the Requirements on Minimum Energy Performance Standard and Energy Efficiency Rating Labelling and Inspection for Electric Storage Tank Water Heaters

Basis: Paragraph 4, Article 14 of the Energy Management Act

Announcement :

1. Application Scope : The Electric Storage Tank Water Heaters stated in this Announcement refer to those meeting the definition of Electric Storage Tank Water Heaters as defined in CNS 11010, and promulgated by the Bureau of Standards, Metrology and Inspection (BSMI) of the Ministry of Economic Affairs (MOEA) as products requiring inspection before marketing.
2. Test Method : In accordance with CNS 11010.
3. The testing and calculation of Electric Storage Tank Water Heaters shall comply with the following requirements :
 - (1) The Capacity of inner tank of Electric Storage Tank Water Heaters shall be tested in accordance with CNS 11010. The measured value of Capacity of inner tank rounded off to the first decimal place and the allowance between the rated and tested values for capacity of the inner tank shall be $\pm 3\%$ for inner tanks with the volume below or equal to 100L, and $\pm 2\%$ for those with the volume above 100L.
 - (2) The Standardized Standby Loss of every 24 hours ($E_{st,24}$) of Electric Storage Tank Water Heaters shall be tested in accordance with CNS 11010. The measured value of $E_{st,24}$ rounded off to the fourth decimal place shall not be higher than the Minimum Energy Performance Standard (MEPS) of Electric Storage Tank Water Heaters (see Table 1), and shall be less than or equal to 105% of the declared value of products.
4. Labelling Scheme for Energy Performance and Energy Efficiency Rating
 - (1) The minimum size of displayed label shall be: 120mm (height) \times 80mm (width). The samples and specifications are provided as follow:



(2) The Energy Efficiency Rating Label shall include the information listed as below:

- (i) Name of the product (Electric Storage Tank Water Heaters).
- (ii) Model number of the product.
- (iii) Rated capacity of inner tank (Liters).
- (iv) Standardized Standby Loss of every 24 hours $E_{st,24}$ (kWh/24 h).
- (v) Energy Efficiency Rating classified in accordance with the “Energy Efficiency Rating Standards for Electric Storage Tank Water Heaters” of Table 2.
- (vi) Annual electricity consumption (kWh), which is calculated by the Standardized Standby Loss of every 24 hours value (kWh/24 h) \times 365 days/year.
- (vii) The year and the number of announcement of the applied Energy Efficiency Rating Standards for Electric Storage Tank Water Heaters.
- (viii) Registration number of the product.

(ix) Other texts designated by the Central Competent Authority.

(3) The display or post of the label

While displaying or marketing Electric Storage Tank Water Heaters, the firms shall display, post or disclose the Energy Efficiency Rating Label on the front of the products, and shall not hide, destroy or adopt other means to render the labelling not recognizable by the consumers. While manufacturing or importing the products, the firms shall display or attach the Energy Efficiency Rating Label in/on the product instruction/manual or place the label in a prominent area on the front of the products.

(4) Energy efficiency rating

The products shall be classified for Energy Efficiency Rating based on the labeled $E_{st,24}$, and shall be labeled on the Energy Efficiency Rating Label.

(5) Market Inspection

The Central Competent Authority may apply random inspection per annum while applying the inspection of the Energy Efficiency Rating Labelling. The samples for random inspection shall be designated by the Central Competent Authority, and shall be delivered by the firms to the designated inspection laboratories for testing within the required term. The amount of samples for random inspection shall be decided based on the total amount of products marketed by the manufacturers or the importers of the previous year. In principle, one unit shall be sampled for inspection for 2,500 units. If the total amount is less than 2,500 units, one unit shall still be sampled for inspection. Nonetheless, the Central Competent Authority may adjust the amount of samples and the sampling ratio for random inspection according to actual needs.

Table 1 MEPS for Electric Storage Tank Water Heaters

Rated Capacity of inner tank, V (Liters, L)	The Standardized Standby Loss of every 24 hours $E_{st,24}$ (kWh/24 h)
Less than 60 liters	$0.1105 + 0.0470 \times V^{2/3}$
Above 60 liters	$0.17 + 0.0434 \times V^{2/3}$

Table 2 Energy Efficiency Rating Standards for Electric Storage Tank Water Heaters

Energy Efficiency Rating	The Standardized Standby Loss of every 24 hours, $E_{st,24}$ (kWh/24 h)	
	Rated Capacity of inner tank, $V < 60$ liters	Rated Capacity of inner tank, $V \geq 60$ liters
Class 1	$E_{st,24} \leq 0.0715 + 0.0304 \times V^{2/3}$	$E_{st,24} \leq 0.11 + 0.0281 \times V^{2/3}$
Class 2	$0.0715 + 0.0304 \times V^{2/3} < E_{st,24} \leq 0.0845 + 0.0359 \times V^{2/3}$	$0.11 + 0.0281 \times V^{2/3} < E_{st,24} \leq 0.13 + 0.0332 \times V^{2/3}$
Class 3	$0.0845 + 0.0359 \times V^{2/3} < E_{st,24} \leq 0.0932 + 0.0396 \times V^{2/3}$	$0.13 + 0.0332 \times V^{2/3} < E_{st,24} \leq 0.1433 + 0.0366 \times V^{2/3}$
Class 4	$0.0932 + 0.0396 \times V^{2/3} < E_{st,24} \leq 0.1018 + 0.0433 \times V^{2/3}$	$0.1433 + 0.0366 \times V^{2/3} < E_{st,24} \leq 0.1567 + 0.0400 \times V^{2/3}$
Class 5	$0.1018 + 0.0433 \times V^{2/3} < E_{st,24} \leq 0.1105 + 0.0470 \times V^{2/3}$	$0.1567 + 0.0400 \times V^{2/3} < E_{st,24} \leq 0.17 + 0.0434 \times V^{2/3}$