Standard & Labeling for Home Appliances

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ENERGY CONSCIOUS

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1. Outline of standard & labelling program

Standard & Labeling (S&L)

Standard

1. Minimum Energy Performance Standard (MEPS)

Most countries

- ✓Minimum energy efficiency standard value of appliances
- ✓Suppliers can‘t sell the products whose energy efficiency values do not meet the MEPS.

2. Top Runner Standard

Japan

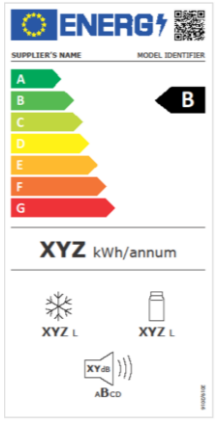
Label (Energy label)

Label indicating the energy efficiency performance of the product

(Example)

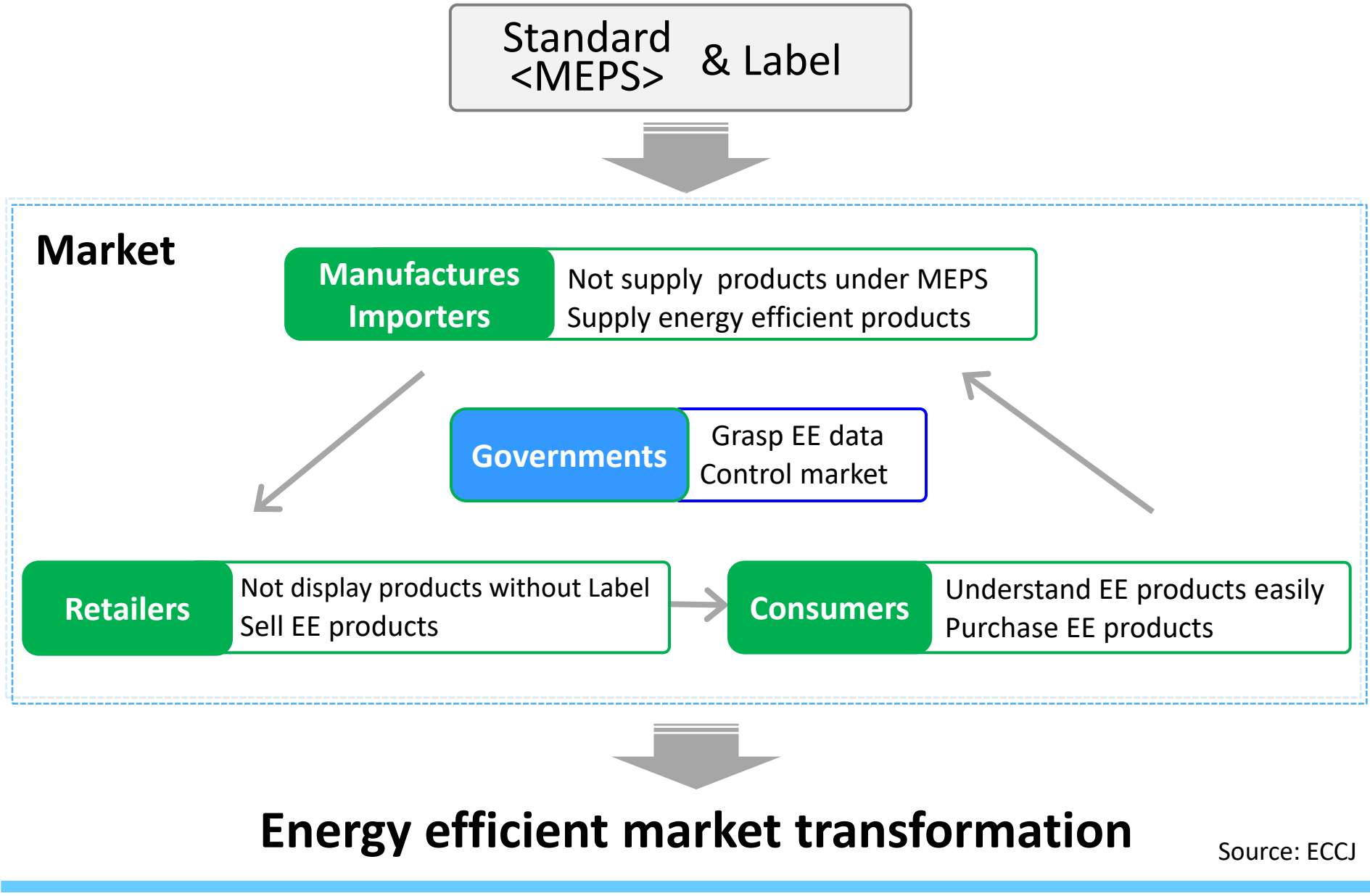
Japan

EU



Malaysia

Market transformation by S&L



Source: ECCJ

2. Energy efficiency standard (Top runner program)

Examples of the energy standard

- The energy standard values are set by categories classified by kinds of products, sizes, etc.

（Example）

Lighting bulbs
(Incandescent, Fluorescent, LED)

Category Light source color	Standard value (lm/W)
Daylight, Neutral, White	110.0
Warm white, Incandescent	98.6

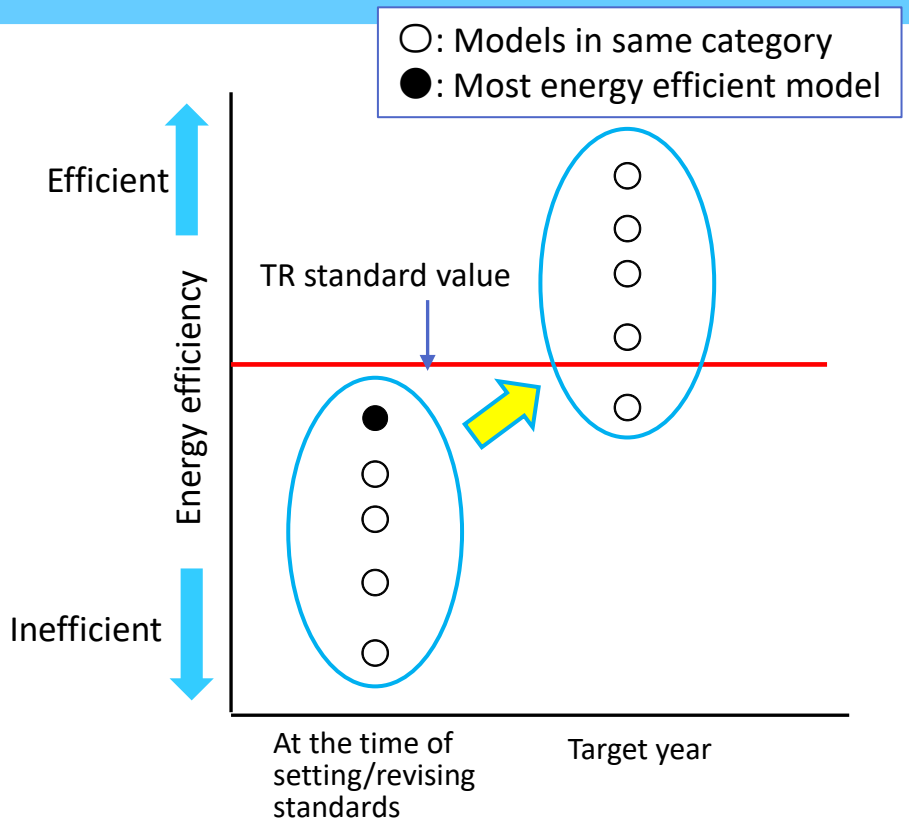
Television

Category		Standard value (kWh/y)
Panel type	Number of pixels	
Liquid crystal	less than 2K	0.00407A+30.08
	2K or more but less than 4K	0.00605A+56.13
	4K or more	0.00728A+62.99
Organic EL	-	0.02136A-16.40 *A<4,258 → 75.0

A: Screen area (unit: square centimeters)

Top runner program

- **Standard value is set based on the most energy efficient model** in the market at the time of developing the standard value. Moreover, the expected improvement by the technological development in a few years is also taken into consideration.
- **Achievement of the standard is judged in "Target year",** which is 3 to 5 years later.
- In judging, **domestic shipment-volume weighted average energy efficiency** is used. It is calculated category by category for **each manufacturer and importer**.



Shipment-volume weighted average energy efficiency

$$\frac{\text{Model A}\left[\text{Energy efficiency} \times \text{The number of units shipped domestically}\right] + \text{Model B}\left[\text{Energy efficiency} \times \text{The number of units shipped domestically}\right]}{\text{The number of units shipped domestically} + \text{The number of units shipped domestically}}$$

Target products

Target products

Construction materials are underlined.

<in 1999>

1. Passenger Vehicles
2. Freight Vehicles
3. Air Conditioners
4. TV sets
5. Video Tape Recorders
6. Fluorescent Lamps *1
7. Copying Machines
8. Computers & Servers
9. Magnetic Disk Units
10. Refrigerators
11. Freezers

<Addition in 2002>

12. Space Heaters (using gas/oil)
13. Gas Cooking Appliances
14. Gas Water Heaters
15. Oil Water Heaters
16. Electric Toilet Seats
17. Vending Machines
18. Transformers

<Addition in 2006>

19. Electric Rice Cookers
20. Microwave Ovens
21. DVD Recorders

<Addition in 2009>

22. Routers
23. Switching Units

<Addition in 2013>

24. Multifunction Devices
25. Printers
26. Electric Water Heaters (Heat Pump Type)
27. AC Motors
28. LED Lamps & *1
29. Insulation Materials

<Addition in 2004>

30. Sashes
31. Double-glazed Glass

<Addition in 2017>

32. Showcase (for Cold or Frozen Food)

*1: Add LED equipment and incandescent bulb in 2019

Requirement for the target products

Requirements for the target products (Machinery & Equipment)

- They are used in **a large numbers** in Japan.
- They **consume a significant amount of energy** when they are used.
- Improvement of their energy efficiency is considered as particularly essential.

Requirements for the target products (Construction materials)

- They are used in **a large numbers** in Japan.
- They are mainly installed at parts of buildings where **significant level of thermal loss** is occurred.
- Improvement of their thermal loss prevention performance is considered as particularly essential.

Achievements in improvement

Examples of improvement rate of energy efficiency

Target Product		Evaluation index of energy efficiency	Improvement rate based on actual status
Air Conditioners (Home use, direct blow, Wall-hung)	Cooling capacity ≦ 4kW	APF (Annual Performance Factor)	16.3 % FY2005 ⇒ FY2010
	Cooling capacity > 4kW		15.6 % FY2006 ⇒ FY2012
TVs (LCD & Plasma)		Annual electricity consumption (kWh/y)	60.6 % FY2008 ⇒ FY2012
Refrigerators (Home use)		Annual electricity consumption (kWh/y)	43.0 % FY2005 ⇒FY2010
Freezers (Home use)		Annual electricity consumption (kWh/y)	24.9 % FY2005 ⇒FY2010

APF: Annual Performance Factor
A value obtained by dividing the cooling capacity (kWh) required for one year when using an air conditioner throughout the year under a certain modeled condition by the amount of power consumed (kWh) in that year.

Source: ”Energy Efficiency Performance Catalogue", METI

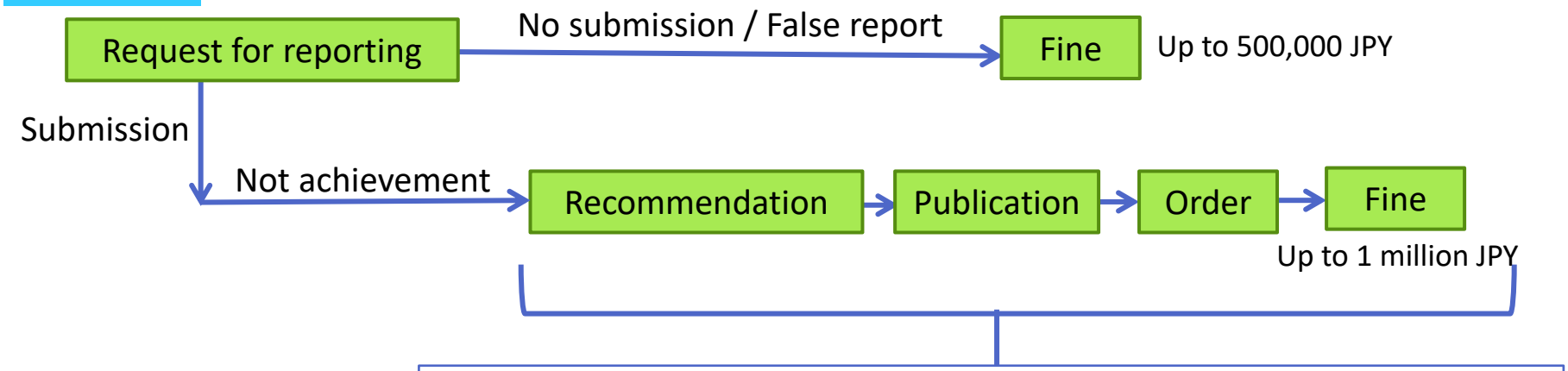
Reporting obligation and penalty

Manufacturers and importers have an obligation to **report shipment volumes and energy consumption efficiency of their products** at the target year.

The data are used
- to **judge the achievement status to the standards** in each manufacturer/importer

and
- to **review the improvement status of energy efficiency** of each target product.

Penalties



These steps apply only to manufacturers/importers whose shipment volume is over the specified levels.
E.g. (in units)
- AC: 500, TV: 10,000, Refrigerator (home-use): 2,000

Display obligation

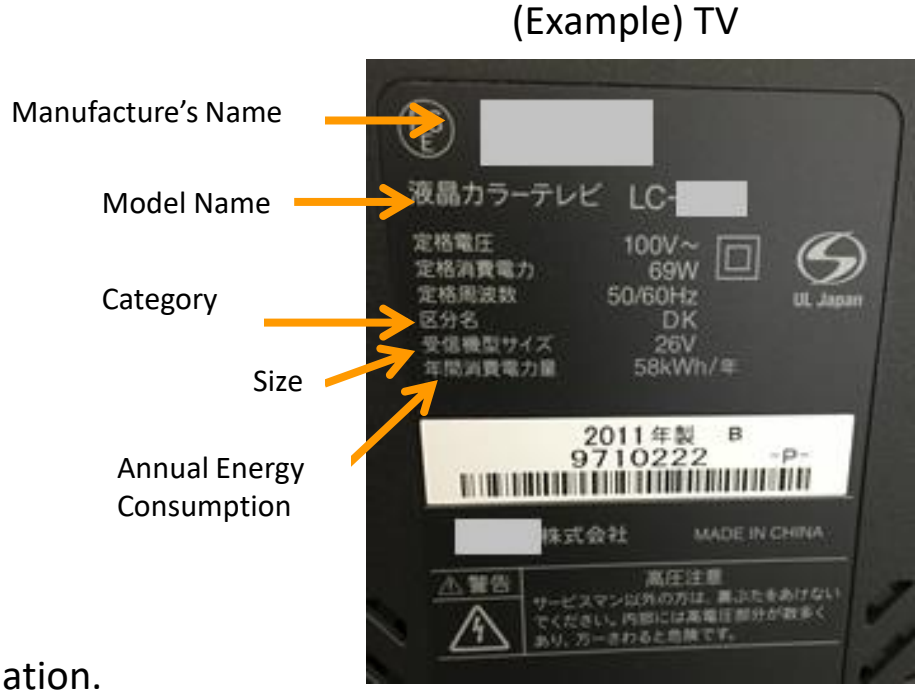
Manufacturers and importers are obligated to **display energy efficiency values and related information on product bodies, product catalogues, etc.**

Display Item Stipulated by each product

- Name of manufacturer / importer
- Product name / model number
- Name of energy efficiency standard category
- Energy efficiency
- Product information related to energy efficiency, etc.

(Language: Japanese)

(Example) TV



Place to display Stipulated by each product

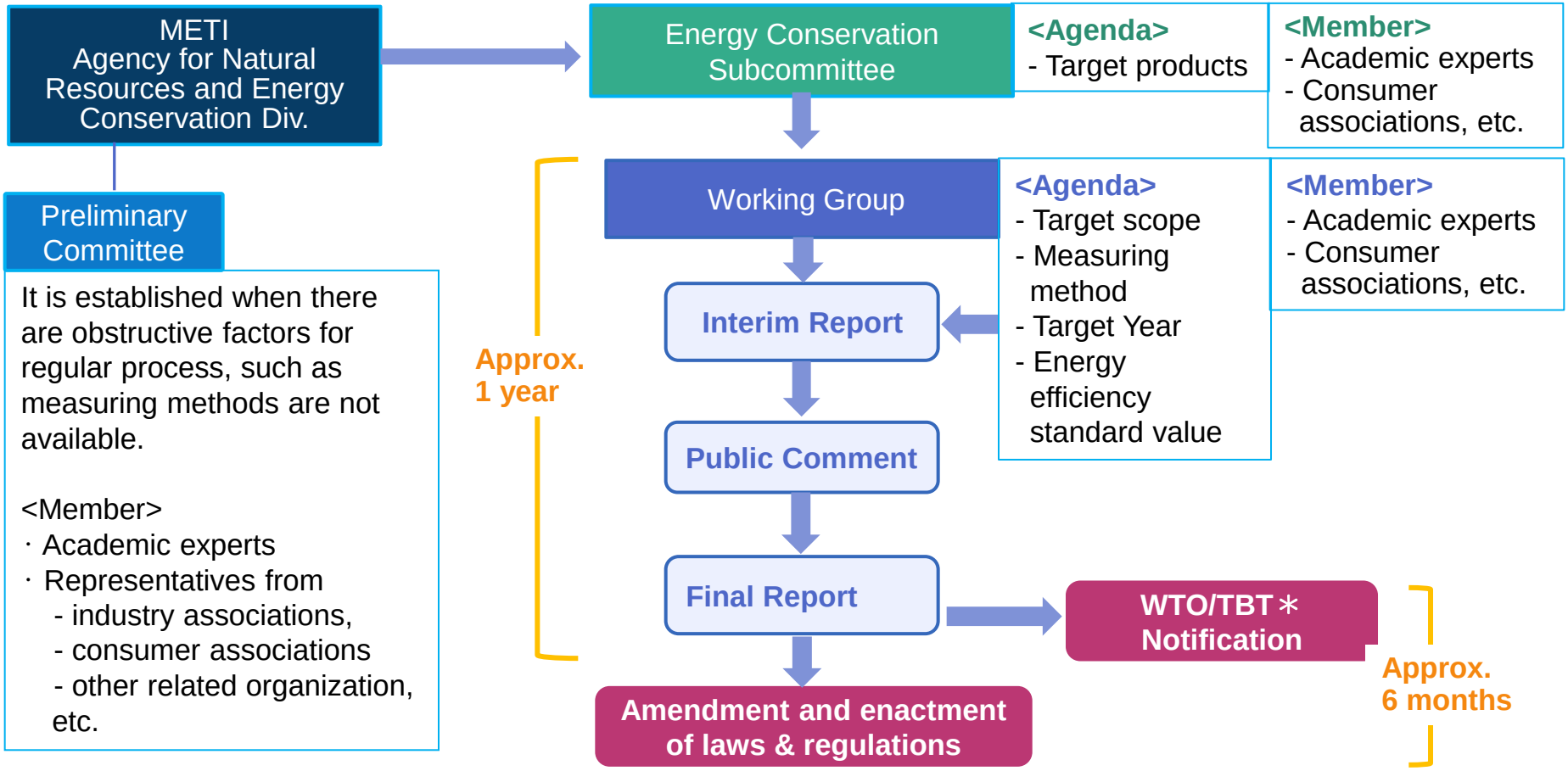
(Example of TV)
Any places where consumers easily find the information.

Penalty

Recommendation → Public disclosure → Order → Prohibition of sales

Procedure of the standards development

The standards are discussed at Working Group of each target product under “Energy Conservation Subcommittee”.



＊World Trade Organization／Technical Barrier to Trade Agreement

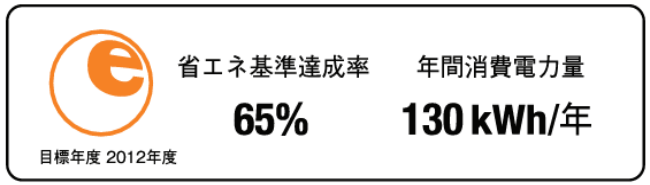
3. Labeling program

Labeling program

There are 2 kinds of labeling programs in Japan.

Energy Conservation Labeling Program (Voluntary)

Started in 2000



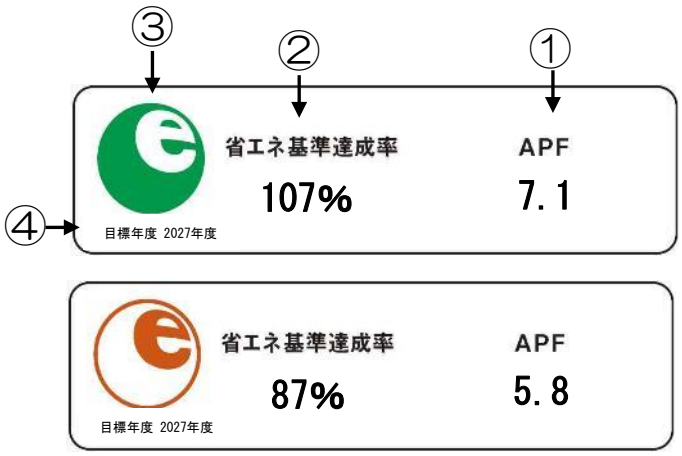
Retailers' Labeling Program (Voluntary)

Started in 2006, revised in 2020

Energy conservation labeling program

Energy conservation labeling program is a voluntary program based on JIS standards, which stipulates display items, etc. This label is mostly used by manufacturers (importers) in their product catalogues.

Example of EC Label for AC



① **EE value**
Energy efficiency value (APF, lm/W, etc) or Annual energy consumption (kWh/y)

② **EE standard achievement ratio**

EE standard value (cooling capacity: under 2.8kW): APF 6.6

→ EE standard achievement ratio: 7.1/6.6*100=107%

③ **EE&C mark**

If EE standard achievement ratio is 100+% then the color is Green, otherwise Orange.

④ **Target fiscal year**

Target fiscal year of the applied EE standard.

Target product

Air conditioner, Refrigerator, TV, Lighting equipment, etc. (22 products)

Feature

- It shows **how much the product is better or worse in terms of energy efficiency comparing to the standard.**
- **3rd party certification is not required.**

Source: ECCJ

Retailers' labeling program

Retailers are required to make efforts to **provide information of energy efficiency with comparative labels** in their shops including online shops.
The program was revised in November 2020.

Target product

Air conditioner, Refrigerator, Freezer, TV, Lighting equipment, Electric toilet seat, Water heater

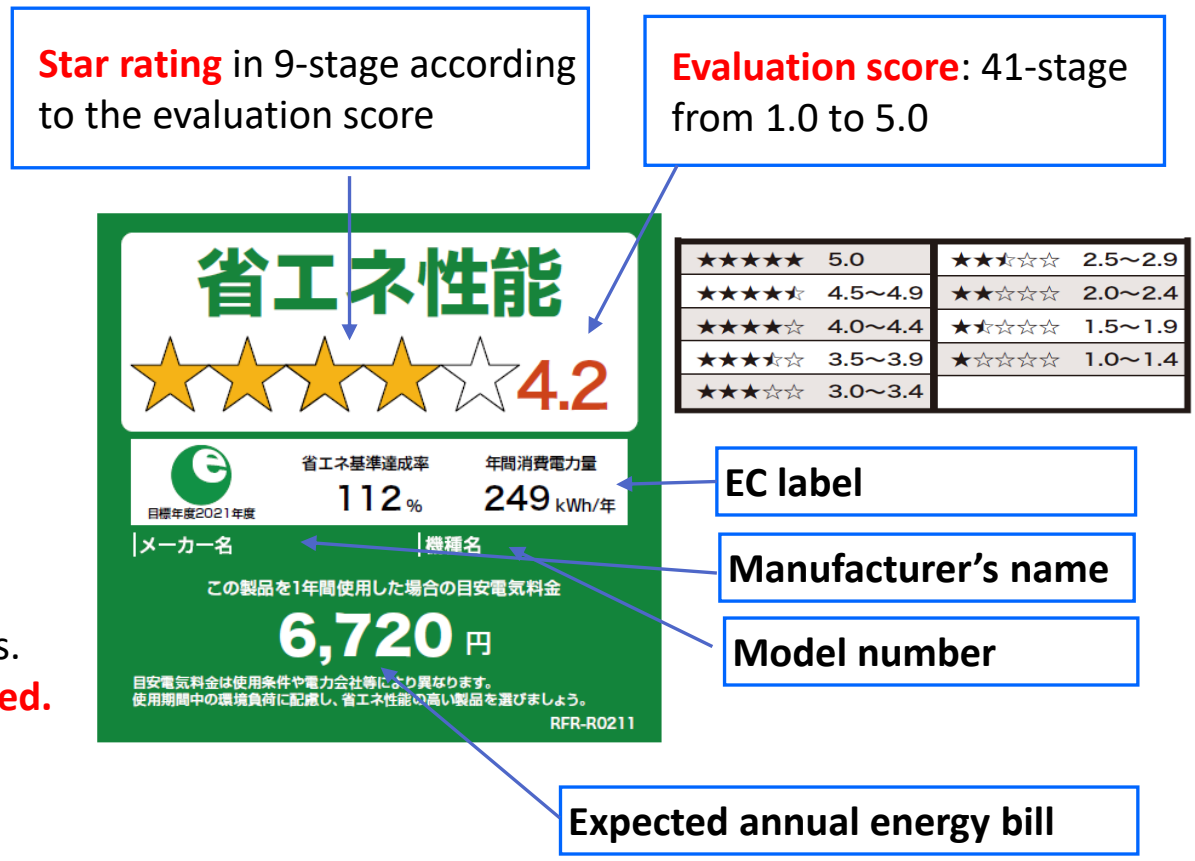
Display place

Product body or near product
*Internet shop: near product on pages where the product is shown

Feature

- ☐ It is voluntary displayed by retailers.
- ☐ **3rd party certification is not required.**

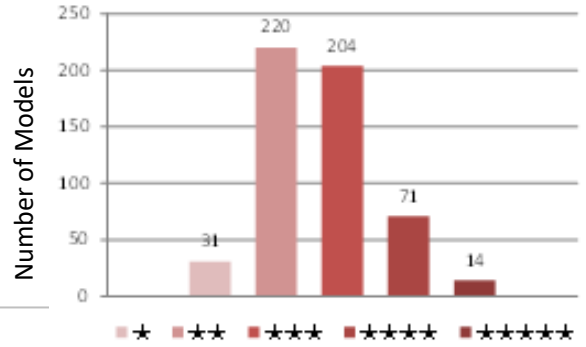
Example of the label for refrigerator



Achievements in improvement

< TV: Star Rating & Model Distribution as of Oct. 2010>
Evaluation standard was newly set (revised) at that time.

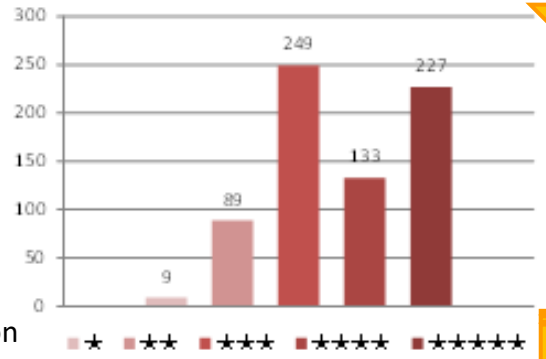
Star Rating	EE Standard Achievement Rate	# of models	Ratio
★★★★★	155% & above	14	2.6%
★★★★	128% ～ below 155%	71	13.1%
★★★	100% ～ below 128%	204	37.8%
★★	70% ～ below 100%	220	40.7%
★	below 70%	31	5.7%
Models with achivement rate of 100% & above			53.5%



< TV: Star Rating & Model Distribution as of Oct. 2013>

Star Rating	EE Standard Achievement Rate	# of models	Ratio
★★★★★	155% & above	227	32.1%
★★★★	128% ～ below 155%	133	18.8%
★★★	100% ～ below 128%	249	35.2%
★★	70% ～ below 100%	89	12.6%
★	below 70%	9	1.3%
Models with achivement rate of 100% & above			86.1%

Increased by 30 points & over

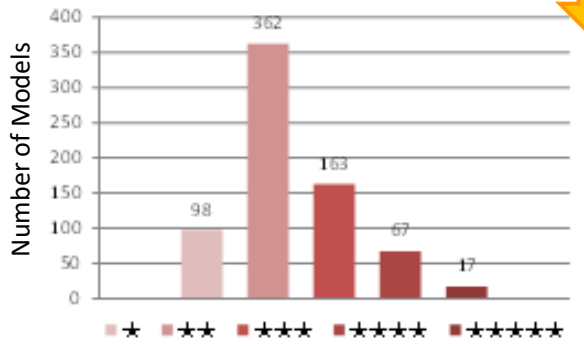


Requirement of revision of rating standards

Revision of Evaluation Standard

< TV: Star Rating & Model Distribution as of Oct. 2013>
Evaluation standard was newly set (revised) at that time.

Star Rating	EE Standard Achievement Rate	# of models	Ratio
★★★★★	246% & above	17	2.4%
★★★★	198% ～ below 246%	67	9.5%
★★★	149% ～ below 198%	163	23.1%
★★	100% ～ below 149%	362	51.2%
★	below 100%	98	13.9%
Models with achivement rate of 100% & above			86.1%



Source: ECCJ

Law for preventing inaccurate indication and Information

Law against Unjustifiable Premium and Misleading Representations (Consumer Affairs Agency)

Target

Indication on products, packages, flyers, pamphlets, manuals, posters, newspapers, magazines, TV commercials, websites, etc.

Summary

Bans on inaccurate indication (actions that make items appear “better” than they really are)

Responses for illegal actions

Investigation → Order → Fine or imprisonment

Fine of up to 3 million yen or imprisonment of up to 2 years

Reporting contact offices

Consumer Affairs Agency and Fair Trade Commission have **reporting contact offices for gathering information on inaccurate indication from the public.**

Database in retailers' labeling program

To support the implementation of Labeling Program, METI runs a database system, where manufacturers & importers input their products' energy efficiency data & other related information.

Manufacturers & Importers

Input energy efficiency data, etc.

Database

http://seihinjyoho.go.jp

Retailers

Print labels

METI

Download product information

- For market surveillance
- For reviewing & revising the standards

Products list
"Energy Efficiency Performance Catalogue"

Data provision

Website "Shinkyu-san" (Estimation of replacement)
(Ministry of Environment)
https://ondankataisaku.env.go.jp/shinkyusan/

Source: ECCJ

Incentives for dissemination of energy efficient products

Examples of incentive program for dissemination of energy efficient products

Target	Incentive program	Organizer	Implementation year
Manufacturer	**Award system for products** “Energy Conservation Grand Prize” Promoting manufacturers to develop energy conservation technologies	METI (currently ECCJ)	1998 -
Retailer	**Award & certification for stores** “Excellent stores for promoting energy efficient products” Promoting retailers to provide information on energy efficient products to promote its sales	METI	2003-2011
Consumer	**Eco-point program (Subsidy)** (For purchasing 5 or 4-star products) Promoting consumers to replace home appliances with energy efficient products	MOE, METI, etc.	2009-2011

4. Key to success for effective standard & labeling program

Key to success for effective standard & labeling program in development and operation

1. Setting of **the appropriate standard values and rating standards**
   Ex. No bias in model distribution in each rating

2. **Periodic review and revise** of the standard values and rating standards

3. Expansion of target products

4. **Mechanisms to collect market data** for the review and the revision

5. **Measures for ensuring reliability** of indication contents

6. Good relationship with stakeholders
   (Manufacturers, importers, retailers, relating associations, etc.)

7. **Harmonization in regions and the world**
   (Ex. Harmonizing evaluation index and test standards, utilizing mutual recognition)

8. Incentives

9. **Consumer's awareness raising** of energy conservation and the labels

Thank you for your attention.