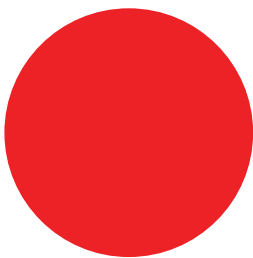
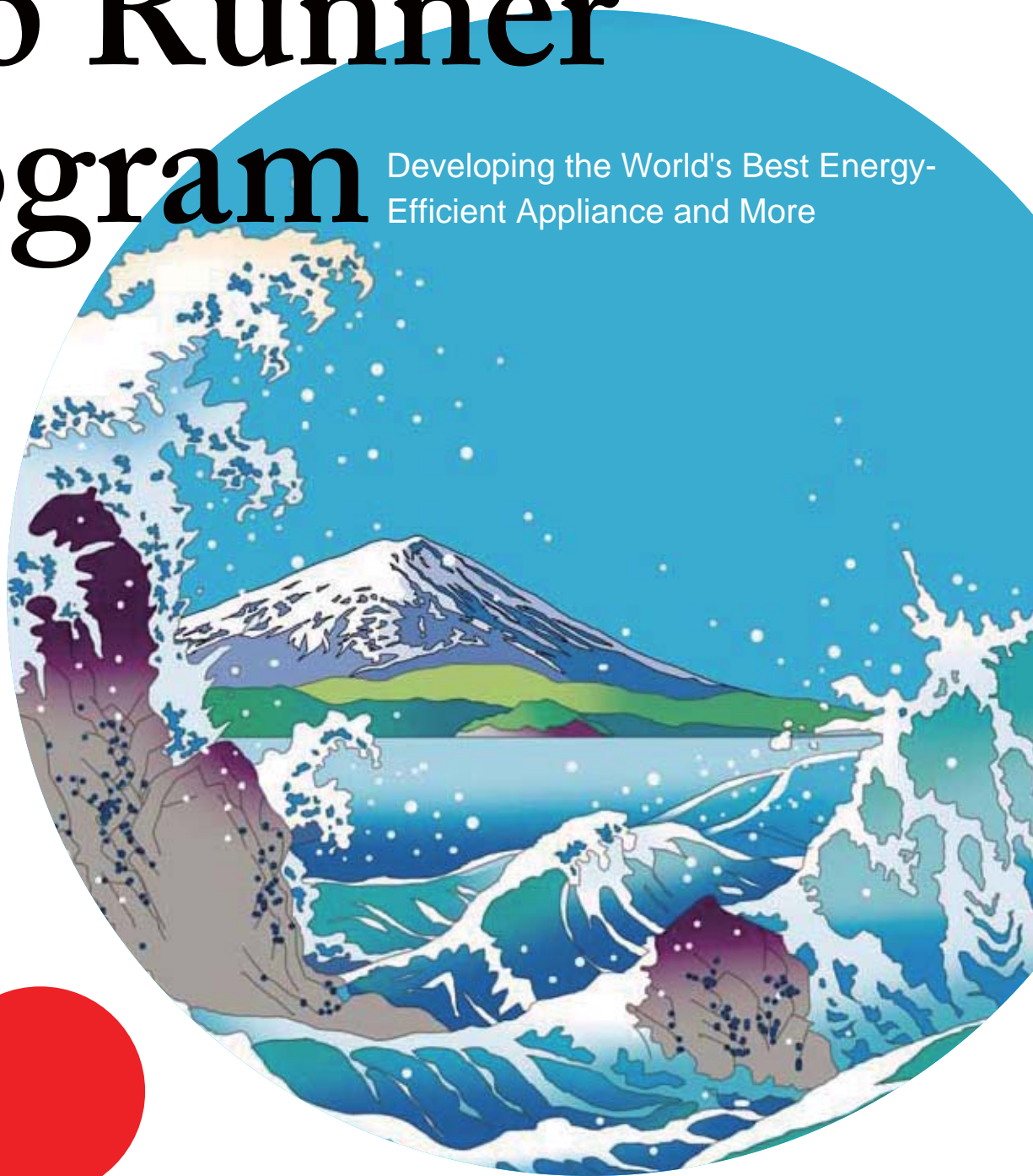
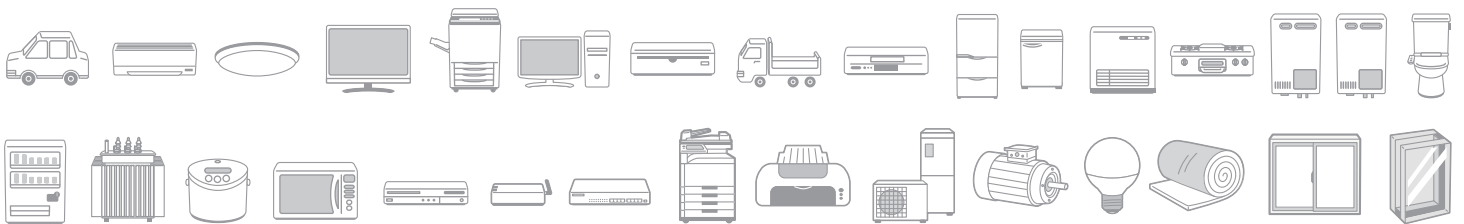


Top Runner Program

Developing the World's Best Energy-Efficient Appliance and More



JAPAN



経済産業省
資源エネルギー庁

Ministry of Economy, Trade and Industry
Agency for Natural Resource and Energy

Top Runner Program

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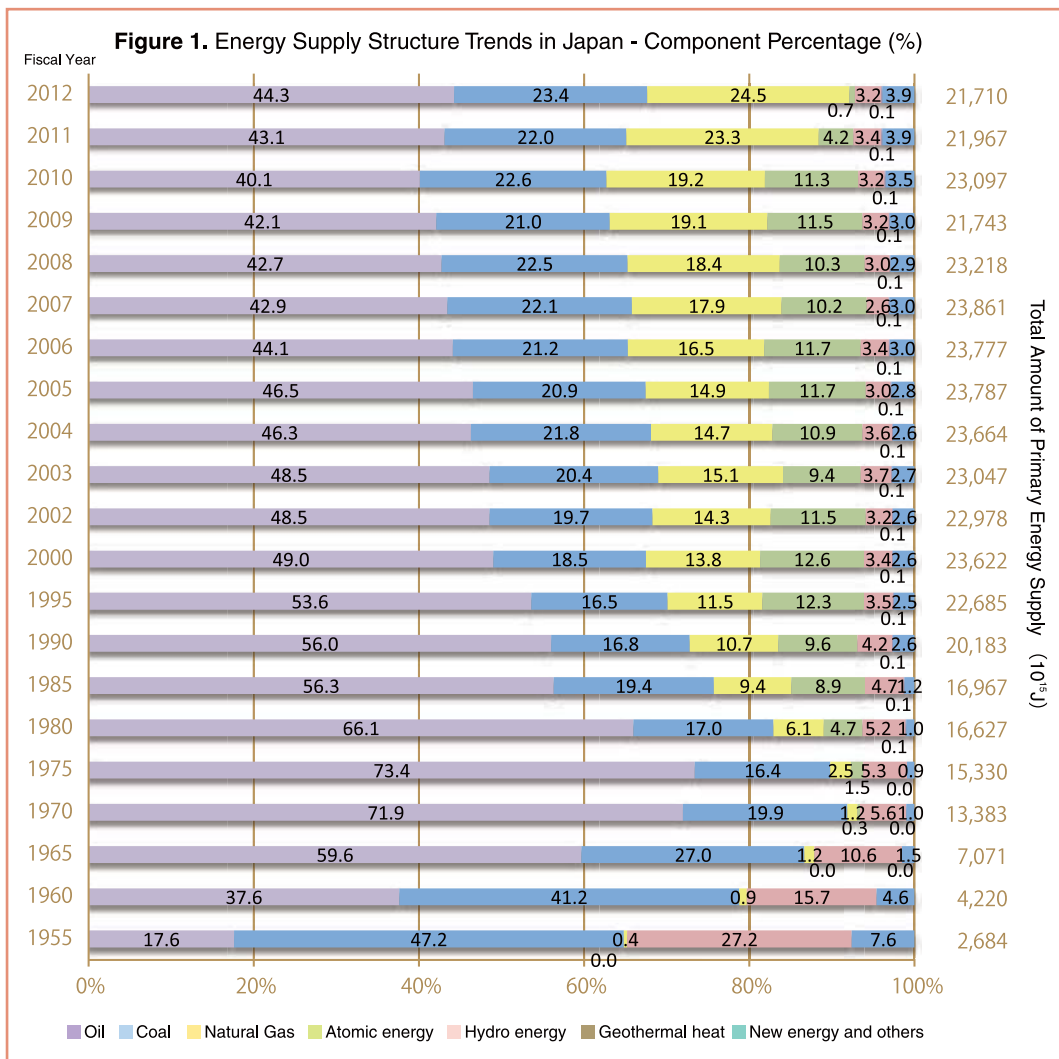
CHAPTER 1 Introduction

1.1 Japan's Energy Supply and Demand Issues and Energy Conservation Measures

Along with water and food, energy is an essential element of the foundation of modern society.

Japan's energy consumption expanded rapidly along with economic development following the Second World War. In the fiscal year 2000, Japan's energy consumption was approximately nine times greater than in fiscal 1955, just after the end of the war. In addition, Japan's energy consumption has increased significantly, by approximately twofold, since fiscal 1970, just prior to the oil crisis. On the other hand, Japan has almost no domestic energy resources and the country relies on overseas energy sources for the bulk of its needs. Japan's energy supply structure is characterized by an intrinsic fragility.

The turmoil caused by the first and second oil crises of the 1970s had a great impact on Japan's subsequent energy policies. The country expended great efforts to make certain it secured a stable supply of energy. As a result of this, while there had been a rapid shift from the use of coal as an energy source to oil as part of a change in energy supply sources up to then, a shift toward energy supply source diversification was adopted.

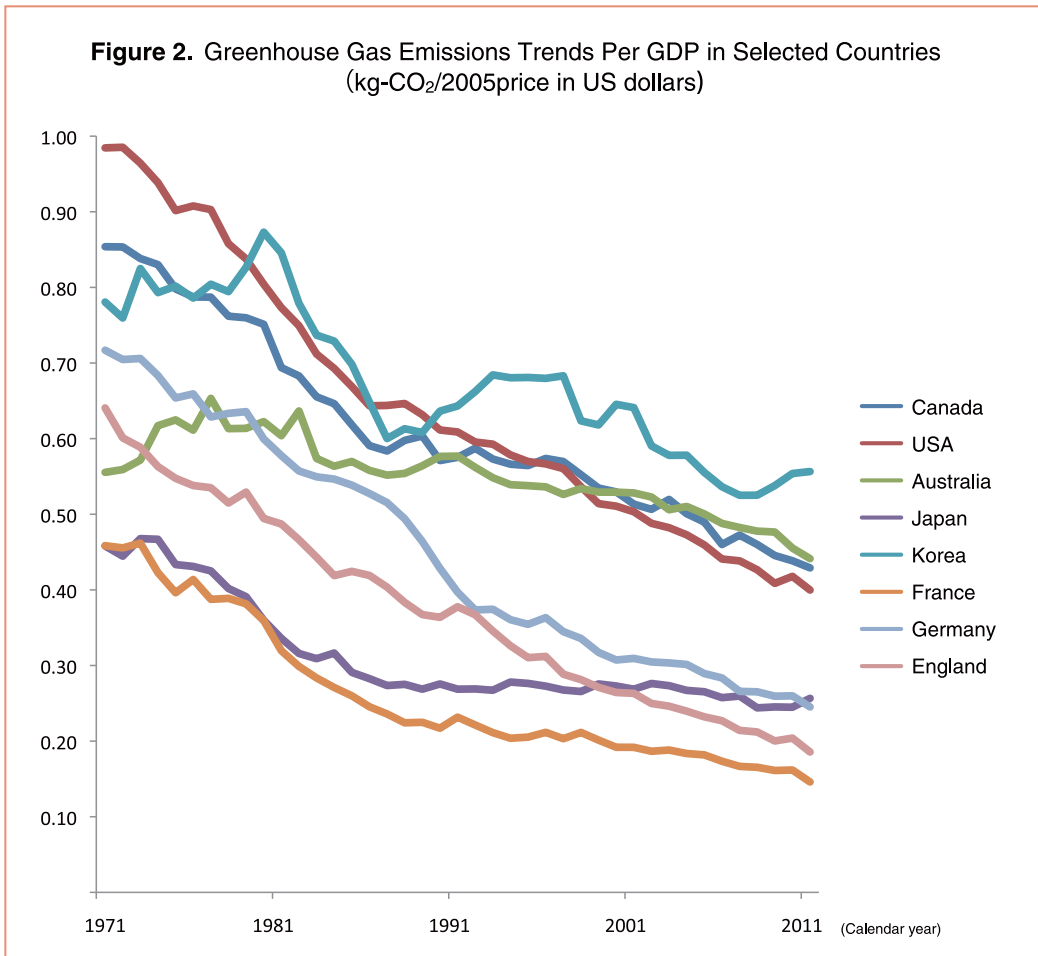


Sources: Com Prehensive Energy Statistics

Japan's primary energy supply, which represents the energy demand for the overall country, including the energy conversion sector, had remained almost unchanged since fiscal 2000, but significantly dropped in fiscal 2009 due to the impact of the recession

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caused by the global financial crises. Fiscal 2010 ushered in a temporary increase due to an economic comeback, but the supply decreased once again in fiscal 2011 due to the effects of events such as the Great East Japan Earthquake. In fiscal 2012, the supply decreased along with final energy consumption due to factors such as a drop in manufacturing activity, advances in energy conservation and electricity saving, and a decrease in heating demand due to a warmer winter compared to the previous fiscal year. Additionally, the sequential shutdown of domestic nuclear power stations following the Fukushima Daiichi Nuclear Power Plant accident resulting from the Great East Japan Earthquake caused a significant decrease in nuclear power and, conversely, an increase in oil, coal, and natural gas.



On the other hand, the two oil crises focused the public interest on rational methods of energy use and the industrial sector, strongly concerned about energy costs, developed energy conservation rapidly. Acknowledging this trend, Japan enacted the "Law Concerning the Rational Use of Energy" (Energy Conservation Law) in 1979 and this provided a legal basis for energy conservation activities, as well as strengthening and promoting assistance policies. Thanks to the progress that this law stimulated, Japan has achieved a manufacturing system that features the world's most advanced rates of energy consumption efficiency.

In addition, with issues such as acid rain, concern about global environmental problems has begun to build. There is now great concern around the world about the problem of global warming resulting from the use of fossil fuels and other fuels and this problem has become closely linked with the energy problem.

Japan's efforts to save energy since the oil crises in the 1970s has led to an approximate 40% decrease in GHG emissions over a period of about 40 years, from 1973

to 2011, achieving high level results on a global scale. With the sluggish growth since the late 1980s and increases in fossil fuel consumption due to the shutdown of nuclear power stations as a result of the impact of the Great East Japan Earthquake, however, Japan intends to carry out further reductions of GHG emissions by continually implementing energy-saving measures and policies that can be undertaken at the present stage.

1.2 The Top Runner Program as a Countermeasure to Ongoing Residential and Commercial Sector and Transportation Sector Energy Consumption Increases

Although Japan's final energy consumption was temporarily reduced under intensive energy conservation efforts in the industrial sector after two oil crises, it turned upward in 1982. While the industrial sector's final energy consumption has since been curbed due to industry efforts, the residential and commercial sector and transportation sectors' have risen continuously except during the oil crisis periods, when these sectors' final energy consumption temporarily stagnated. It is thought that this phenomenon was caused by the continuous economic development during the period and by the public's pursuit of richer lifestyles as a result of economic development. However, energy consumption in the transportation sector has recently leveled out or begun decreasing.

In planning for energy conservation in the residential and commercial sector and the transportation sector, improvements in the energy consumption efficiency of machinery, appliances, and the like (cars, electric appliances, construction materials, etc.; hereinafter machinery, equipment, and other items) would be an extremely effective measure. From the beginning, the Energy Conservation Law contained energy consumption efficiency standards for machinery, equipment, and other items to stimulate equipment energy conservation. Initially, the types of machinery and equipment covered by the regulations were limited to three items: electric refrigerators, air conditioners, and passenger cars. Efficiency standard values were established with the idea that technological improvements would enable achievement of the values by the target fiscal year. In addition, these values were set primarily to stimulate manufacturers and importers (hereafter referred to as manufacturers) to achieve energy efficiency standards through their voluntary efforts. The Kyoto Protocol was entered into and greenhouse gas reduction goals were established. Strengthened energy conservation measures were specified as leading measures to counter global warming. Japan consequently revised the Energy Conservation Law in June 1998 with the goal of strengthening the legal underpinnings of various energy conservation measures. As a staple energy conservation measure for the residential and commercial sector and the transportation sector, the Top Runner Program was introduced to establish energy consumption efficiency standards for machinery, equipment, and other items.

At first, 11 product items (including cars and air conditioners) were covered by this program, with the addition of seven more in 2002. Three more were further added in 2006, followed by the addition of two more in 2009 and five more in 2013. Additionally, from the viewpoint of advancing energy-saving measures in the residential and commercial sector and achieving early-stage stabilization of power supply and demand, insulation materials and windows (sashes and multi-paned glazing) which serve as construction materials that contribute to energy conservation were newly added in 2013, resulting in the present coverage of 31 product items. In the future, the Top Runner standards will be reviewed for further expansion of the number of product items and the like.

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CHAPTER 2 Overview of the Top Runner Program

2.1 Distinctive Features of the Top Runner Program

There are three main methods for determining the energy consumption efficiency standards for machinery, equipment, and other items. That is, a minimum standard value system under which all machinery, equipment, and other items covered by this program should exceed standard values, an average standard value system under which the average value of all machinery, equipment, and other items covered by this program should exceed average values, and a maximum standard value system (Top Runner Program) under which targets are set based on the value of the most energy-efficient machinery, equipment, and other items on the market at the time of standard value establishment.

Under this system, targets are set based on the value of the most energy-efficient products on the market at the time of the value setting process. Currently, the most popular minimum standard value system in the world is the Minimum Energy Performance Standard (MEPS). Under this standard, a minimum value that all the target machinery, equipment, and other items must exceed is established and, in the event a product does not exceed the value, actions such as suspension of product shipments can be taken. At first glance, the system appears extremely easy to understand, however, to establish efficiency standard values that all products must exceed, evaluations of the economic validity of the standard values must be conducted carefully. In the US which employs the minimum standard value system, several different points of view regarding economic fairness are evaluated including life cycle assessments (LCA) before standard values are established. In spite of these logical processes, it requires long periods of time to establish standards finally, including substantial coordination with manufacturers.

The second system, the average standard value system, was introduced to Japan when the Energy Conservation Law was enacted as an energy consumption efficiency value system for machinery, equipment, and other items. The target values are arbitrarily determined after consideration of a number of factors, such as potential technical improvements and potential impact of categorical improvements that may contribute to overall improvements, based on information provided by manufacturers (through hearings, supplemental materials, and other methods). Under this system, designated machinery, equipment, and other items are required to achieve a weighted average value of the shipment volume by manufacturer and by category, by the target fiscal year. According to this method, if there is demand for a product whose manufacturer emphasizes other functionalities over energy consumption efficiency, the manufacturer can ship the product even if the energy consumption efficiency is lower than the standard value. That is, the manufacturer can achieve the standard value on average basis by shipping a product with higher efficiency than the standard value in the same category. The system functions well to facilitate manufacturers' voluntary activities. However, energy conservation effects may have less impact than expected as the establishment of standard values is left to manufacturers' discretion.

Expectations regarding the role of energy conservation are increasing due to mounting global environmental problems. As a result, there is now a call to increase the energy consumption efficiency of energy-consuming machinery, equipment, and other items to the greatest extent possible. The Top Runner Program has come into existence in light of this situation. This Top Runner Program uses, as a base value, the value of the product with the highest energy consumption efficiency on the market at the time of the standard establishment process and sets standard values by considering potential technological

improvements added as efficiency improvements. Naturally, target standard values are extremely high. For achievement evaluation, manufacturers can achieve target values by exceeding target values by weighted average values using shipment volume, the same as the average standard value system. The implication of using weighted average values is the same as the average standard value system, that is, the system is meant to give manufacturers incentives for developing machinery, equipment, and other items that offer superior energy consumption efficiency. Above all, since the target standard values to be set in this system are clear, studies during the standard value establishment process can proceed smoothly, shortening the period required from the start of the study to the final standard determination. While this system gives manufacturers of machinery, equipment, and other items substantial technological and economic burdens, the industry should conduct substantial prior negotiations on the possibility of achieving standard values and adopt sales promotion measures for products that have achieved target values.

2.2 Legal Status

The Top Runner Program is prescribed under the "Law Concerning the Rational Use of Energy" (Energy Conservation Law) - Section 6 "Measures Related to Machinery, Equipment, and Other Items." The law stipulates manufacturers' judgment standards as an obligation to make efforts. For energy-consuming machinery, equipment, and other items, making efforts to reduce energy consumption when in use is certainly important, but if the product is poor in energy consumption efficiency to start with, there are naturally limits to efforts while in use. For this reason, manufacturers are required to make efforts to improve the energy consumption efficiency of their machinery, equipment, and other items.

"Manufacturers" here refers to manufacturers that manufacture or import machinery, equipment, and other items repeatedly and continuously.

The Top Runner Program is stipulated under the Energy Conservation Law, and related laws include "Enforcement Ordinances" (Government Ordinance), "Enforcement Regulations" (Ministerial Ordinance), and "Notifications." Under the Government Ordinance, the targeted machinery, equipment, and other items and the production volume and import volume requirements related to manufacturers are specified. Under the Enforcement Regulations, excluded ranges of machinery, equipment, and other items are specified. Under the Notifications, standard values, measurement methods, and other specific judgment standards so forth are specified.

2.3 Overview of the Top Runner Program

The Top Runner Program is composed of targeted machinery, equipment, and other item ranges; items necessary for judgment standards; display items; and energy consumption efficiency measurement methods. Items necessary for judgment standards include target categories, target fiscal year, target standard values, and achievement evaluation methods.

This standard stipulates individual "energy consumption efficiency" under the Ministerial Ordinance. The term "efficiency" does not necessarily mean the same as the "efficiency" generally used in mechanical engineering and the like. When considering rational use of energy for machinery, equipment, and other items, it is important not to simply demonstrate a low input energy volume, used in the "machinery, equipment, and

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other items," but rather to reduce the input energy volume while maintaining the same level of utility. Therefore, there are likely to be cases in which the energy consumption volume such as annual power consumption volume is defined as "energy consumption efficiency." Energy consumption efficiency measurement methods are generally based on international standards and the Japanese Industrial Standard (JIS), but when applicable standards do not exist, measurement methods are established independently. Display and other topics will follow in details in a separate paragraph.

2.4 Results of Introducing the Top Runner Program

The Top Runner Program is a requirement imposed on manufacturers of machinery, equipment, and other items. Thus, as long as manufacturers make an effort to meet these requirements, energy conservation will advance through replacement of machinery, equipment, and other items by consumers without any special effort. However, as a result of new technological development that accompany manufacturers to exceed standard values, the prices of products that exceed standard values are inevitably higher than earlier products. The introduction of this system will yield no results until these high-priced products appear on the market. In this case, the system only brings manufacturers with burdens and the system itself may become a failure. Acknowledging current conditions in Japan, technical progress has been substantial for targeted machinery, equipment, and other items, and consumer interests are high in product functionality. Thus, there is smooth progress being made to products with higher efficiency.

On the other hand, due to rapid advances in machinery, equipment, and other items, there may be cases in which products, not targeted at the time of the standard establishment process because they were not on the market or only on the market in extremely limited numbers, crowd out the conventional products and take a large market share.

<Result of Achieving Standard Values>

Around sixteen years have passed since the introduction of the Top Runner Program. Up to this point, various machineries and equipment have reached the target fiscal year.

Due to the efforts by manufacturers and others, each product category attained efficiency improvement that exceeds our initial expectations.

| Product category | | Energy efficiency improvement (result) | Energy efficiency improvement (initial expectation) |
|---|--|--|---|
| Passenger vehicles* | | 48.8% (FY 1995 → FY 2010) | 22.8% |
| Freight vehicles* | | 13.2% (FY 1995 → FY 2010) | 13.2% |
| Air conditioners * | Non-ducted/wall-mounted AC units, 4 kW or less | 16.3% (FY 2005 → FY 2010) | 22.4% |
| | Non-ducted/wall-mounted AC units, over 4 kW | 15.6% (FY 2006 → FY 2010) | 17.8% |
| | Other than non-ducted/wall-mounted AC units | 15.9% (FY 2001 → FY 2012) | 13.6% |
| Electric refrigerators (for residential use) | | 43.0% (FY 2005 → FY 2010) | 21.0% |
| Electric freezers (for residential use) | | 24.9% (FY 2005 → FY 2010) | 12.7% |
| Microwave ovens | | 10.5% (FY 2004 → FY 2008) | 8.5% |
| Electric rice cookers | | 16.7% (FY 2003 → FY 2008) | 11.1% |
| Lighting equipment using only fluorescent lamp(s) as main light source* | Lighting equipment for fluorescent lamp(s) | 14.5% (FY 2006 → FY 2012) | 7.7% |
| | Self-ballasted fluorescent lamp(s) | 6.6% (FY 2006 → FY 2012) | 3.2% |
| Electric toilet seats | | 18.8% (FY 2006 → FY 2012) | 9.7% |

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| Product category | Energy efficiency improvement (result) | Energy efficiency improvement (initial expectation) |
|---|--|---|
| TV sets (liquid crystal / plasma) | 60.6% (FY 2008 → FY 2012) | 37.0% |
| VCRs | 73.6% (FY 1997 → FY 2003) | 58.7% |
| Computers | 85.0% (FY 2007 → FY 2011) | 77.9% |
| Magnetic disk units | 75.9% (FY 2007 → FY 2011) | 75.8% |
| Copying machines | 72.5% (FY 1997 → FY 2006) | 30.9% |
| Space heaters (oil)* | 5.3% (FY 2000 → FY 2006) | 3.8% |
| Gas cooking appliances (oven area) | 25.8% (FY 2002 → FY 2008) | 20.3% |
| Gas water heaters (gas space heaters (with water heater))* | 7.9% (FY 2002 → FY 2008) | 1.1% |
| Oil water heaters* | 4.0% (FY 2000 → FY 2006) | 3.5% |
| Vending machines | 48.8% (FY 2005 → FY 2012) | 33.9% |
| DVD recorders (terrestrial digital broadcasting compatible) | 45.2% (FY 2006 → FY 2010) | 20.5% |
| Routers | 40.9% (FY 2006 → FY 2010) | 16.3% |
| Switching units | 53.8% (FY 2006 → FY 2011) | 37.7% |
| Transformers | 13.1% (FY 1999 → FY 2006/2007) | 30.3% |

For the product categories marked with an asterisk (*), energy efficiency standards are defined by performance per unit energy (e.g. km/l), while those without an asterisk (*) are by the amount of energy consumption (e.g. kWh/year). In the above table, values of the “Energy efficiency improvement” indicate the rate of improvement calculated based on each standard. (Example: If 10 km/l is developed to be 15km/l, an improvement rate is calculated as 50% (It is not calculated as the improvement of fuel consumption by 33% from 10 liters down to 6.7 liters for a 100 km drive.);and if 10 kWh/year is developed to be 5 kWh/year, the improvement rate is 50 %.)

2.5 Evaluation of the Top Runner Program

As described above, advantageous effects of the Top Runner Program have been steadily realized. Since greater effects are expected to be produced as more products increasingly satisfy Top Runner standards, it is necessary to continue reviewing standards for machinery, equipment, and other items whose target fiscal years is fulfilled, and adding new target products.

The selected target machinery, equipment, and other items need to be products that satisfy the following three requirements: (1) the product is used in large quantities in Japan, (2) the product consumes considerable amounts of energy while in use, and (3) the product requires particular efforts to improve its energy consumption performance.

Based on this basic concept, target machinery, equipment, and other items have been continually added and, at this point in time, 31 product categories are targeted with a focus on high energy-consuming products, covering substantial product ranges.

It is now needed to consider specifying additional product categories from commercial machines, equipment, and other items and newly prevailing high energy-consuming products. Regarding commercial machinery, equipment, and other items in particular, many products are exempted from the target candidates due to the lack of established objective and quantitative methods to measure the energy consumption efficiency. Therefore, it is particularly required to examine the measuring method and strengthen the countermeasures for commercial sectors where energy consumption considerably increases.

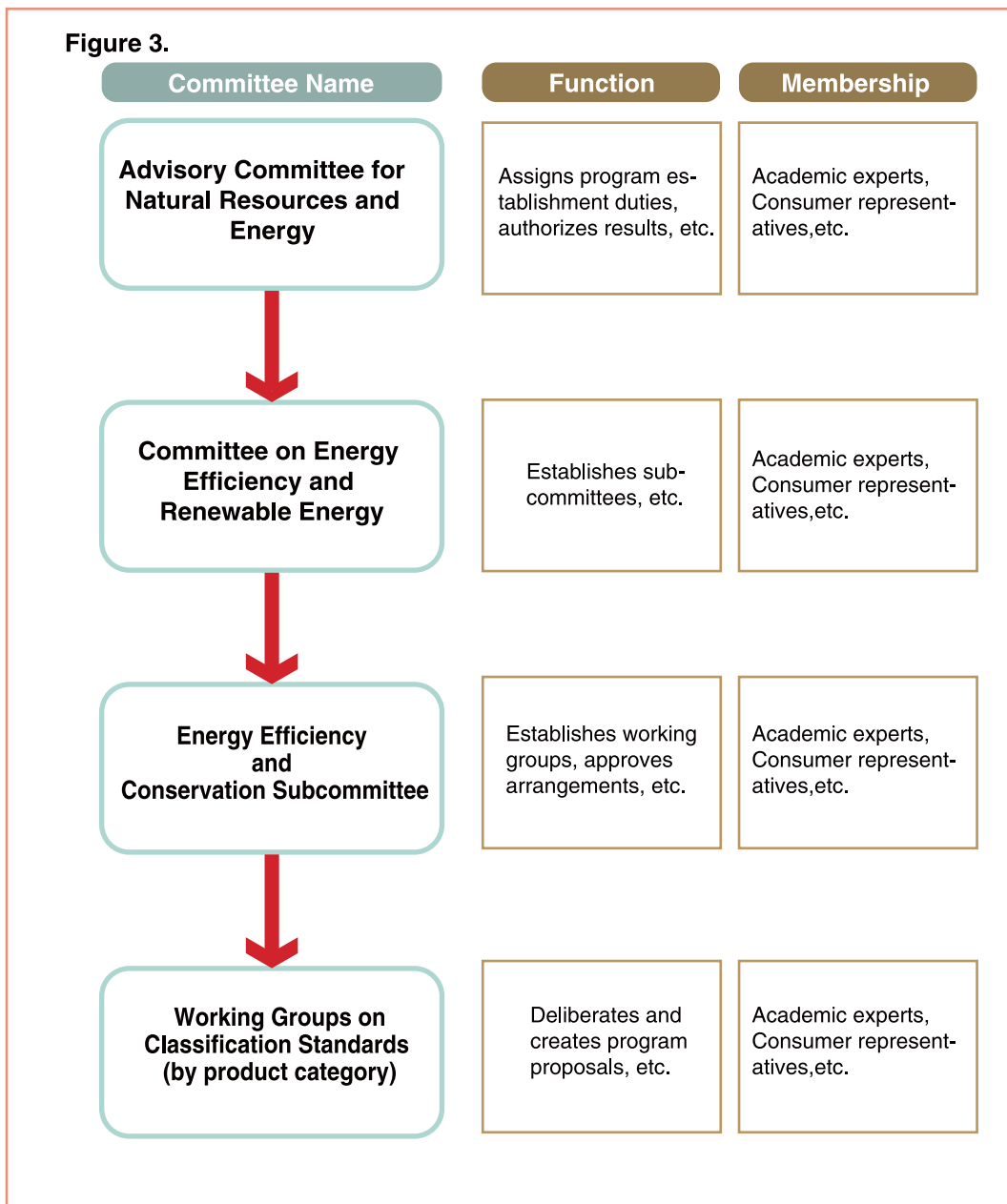
Moreover, in 2013, it was decided that construction material would be newly added to Top Runner standards (addition of three categories). The background to this decision is as follows: Japan's final energy consumption had increased with almost no interruption, excluding the periods immediately following the two oil crises and recent recession, with the residential and commercial sector's final energy consumption exhibiting the highest increase of 2.4 times from 1973 to 2012, and, in light of demands for quicker stabilization of energy supply and demand after the Great East Japan Earthquake, further energy conservation initiatives in the residential and commercial sector became an urgent issue. While requirements for energy conservation standard compliance with regard to residential structures and architecture are mainly effective for new construction, the direct improvement of the energy-saving performance of building materials and the like could effectively propel existing stock countermeasures.

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Process of Establishing Top Runner Standard Values

3.1 Committee Establishment

Japan’s energy conservation policies are deliberated by an “Advisory Committee for Natural Resources and Energy.” The committee, as an advisory body to the Minister of Economy, Trade and Industry, was established based on the “Ministry of Economy, Trade and Industry Establishment Law.” The Top Runner Program is deliberated by the "Energy Efficiency and Conservation Subcommittee" established under the Advisory Committee for Natural Resources and Energy. To deliberate program details, "Working Groups on Classification Standards" are established by product category under the Energy Efficiency and Conservation Subcommittee. These discussions include technical deliberations on program details and the Energy Efficiency and Conservation Subcommittee approves the results and makes decisions to complete the process. These committees and subcommittees are assisted and administered by an office in charge in the Agency for Natural Resources and Energy. The organization chart below shows the role of the committees and their membership.



3.2 Deliberation Process

The Energy Policy Division of the Agency for Natural Resources and Energy conducts studies regarding the types of machinery, equipment, and other items that might be eligible for the Top Runner Program. Machinery, equipment, and other items that meet the requirements are proposed to the Energy Efficiency and Conservation Subcommittee. At this point, machinery, equipment, and other items must meet three requirements, in principle. These include:

(1) the products are used in large quantity in Japan, (2) the products consume considerable amount of energy while in use, and (3) the products require particular efforts to improve energy consumption performance. Decisions are based on these three requirements as well as consideration of marketplace trends for the machinery, equipment, and other items in question, along with other factors.

The Energy Efficiency and Conservation Subcommittee receives these proposals, studies whether target machinery, equipment, and other items are suitable candidates for the Top Runner Program, and confirms the need for studies, then the Working Groups on Classification Standards are established, and these Working Groups conduct studies on the establishment of concrete standard values.

In some cases, deliberations over certain equipment are difficult as candidate products for the Top Runner Program, such as equipment for which measurement methods for energy consumption efficiency have not yet been established. In such cases, studies take place before Energy Efficiency and Conservation Subcommittee discussions. These studies are carried out within a working group that is established within affiliated organizations, such as public service corporations, and composed of, among others, industrial organizations with connections to the machinery, equipment, and other items in question, academic experts, and consumers, and are primarily approached from a technological viewpoint.

The discussion of the Working Groups on Classification Standards proceeds in accordance with specific concepts behind setting standard values explained in Chapter 4. For setting standards, firstly, the target scope of the target machinery, equipment, and other items, measurement methods of energy consumption efficiency are deliberated and determined. Then, cooperated with industry, the energy consumption efficiency of all products currently on the market is measured. Using the resulting data, the most up to date maximum efficiency value is determined. Target years are determined with giving consideration to the degree of how the society demands the equipment energy conservation and efficiency, and manufacturers' product development planning and capacity. Target standard values (Top Runner Standard values) are determined by evaluating potential technical development toward target years, as well as adding the technical development to above maximum efficiency values. Although the Working Groups on Classification Standards are open to the public in principle, a provisional decision is reached after all items have been discussed, and a report is made public through a homepage to elicit public comment. The Working Group on Classification Standards considers the public comments it receives, prepares its final report. By Energy Efficiency and Conservation Subcommittee approval, draft Top Runner standards are determined.

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3.3 Standards Establishment Process

At the time of standards establishment, draft Top Runner standard values are reported to the WTO/TBT* to avoid trade barriers to imported products. Completing these procedures, government and other ordinances are amended to formally add the standard values to the range of Top Runner target machinery, equipment, and other items.

The time it takes to enact legislation following the proposal of target machinery, equipment, and other items to the subcommittee differs according to product, but the process generally takes one and a half years, with the working group study taking a year, and various other procedure about a half year.

* World Trade Organization: Agreement on Technical Barriers to Trade

The TBT agreement is a comprehensive agreement applicable to all WTO member states. It aims to prevent countries' standards certification systems (standards and conformity assessment system) from causing unnecessary impediments to international trade so that standards of products and the procedures to assess their conformity do not unnecessarily hinder trade. The TBT notification is an international procedure based on the TBT agreement to secure international transparency in adoption and revision of standards certification systems by notifying the WTO Secretariat of the draft proposals and receiving comments from member countries.

CHAPTER 4

Basic Concept Behind Setting Top Runner Standard Values

4.1 Concept behind Target Scope

Principle1. Concepts for the target scope are set taking into account general structure, application, and potential type of use. The following types of equipment are ineligible in principle: 1) equipment used for a specific application; 2) equipment for which technical measurement and evaluation methods have not been established, thus difficult to set target standards; and 3) equipment that has an extremely low usage rate in the market.

4.2 Concept Behind Categorization and Setting Target Standard Values

Principle2. For specified energy-consuming machinery, equipment, and other items, categories are determined based on certain indices. Those indices (basic indices) are defined using products' physical quantities, functions, etc. that are closely related to the energy consumption efficiency, taking into account the criteria used by consumers when selecting products (factors representing consumer needs) and other factors.

Basic indices are established by: (1) giving consideration to factors closely related to energy consumption efficiency of specified machinery, equipment, and other items, such as basic physical quantity (TV sets: screen size; cars: vehicle weight; refrigerators: cubic capacity; etc.), functions, or performance (DVD recorders: equipped with HDD and VCR, etc.), and (2) considering factors representing consumer needs and others.

Basic indices are basically preferred to have only one index, but multiple indices should be allowed when necessary to address and accommodate consumer needs (to accommodate potential cases in which the product may not be brought to the market in spite of its high consumer needs, because indices were not taken into considerations, etc.)

Principle3. Target standard values are determined by adequate basic index category that enables achievement of the same degree of energy consumption efficiency, using a single numeric value or relational expression.

There are two methods for setting target standard values in each category: setting by numeric values and setting by relational expressions.

(1) Setting target standard values by numeric values

From the standpoint of maximizing energy savings, it is preferable to keep the target scope as broad as possible and establish a numeric value with high-efficiency. If setting the same energy consumption efficiency as a target standard value is not possible, a separate category should be created to establish the target standard value for the category.

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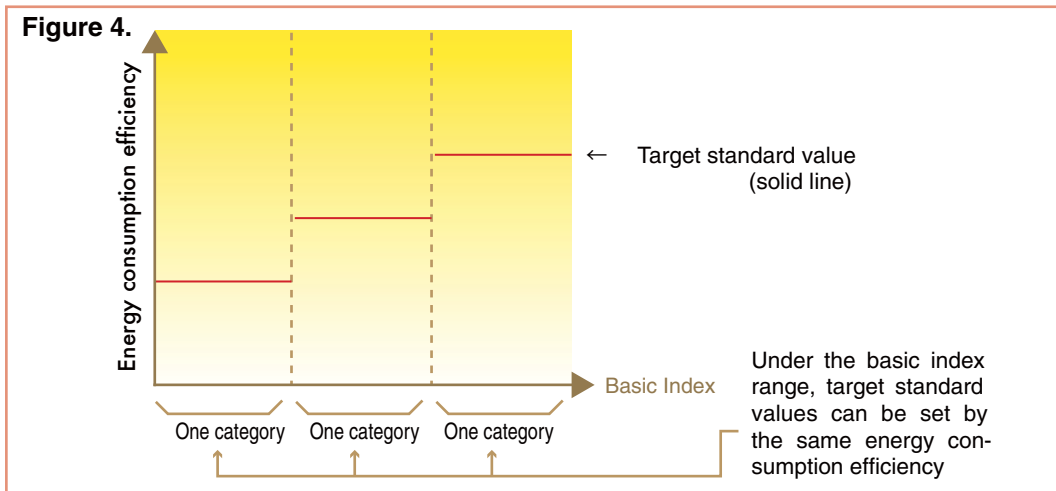
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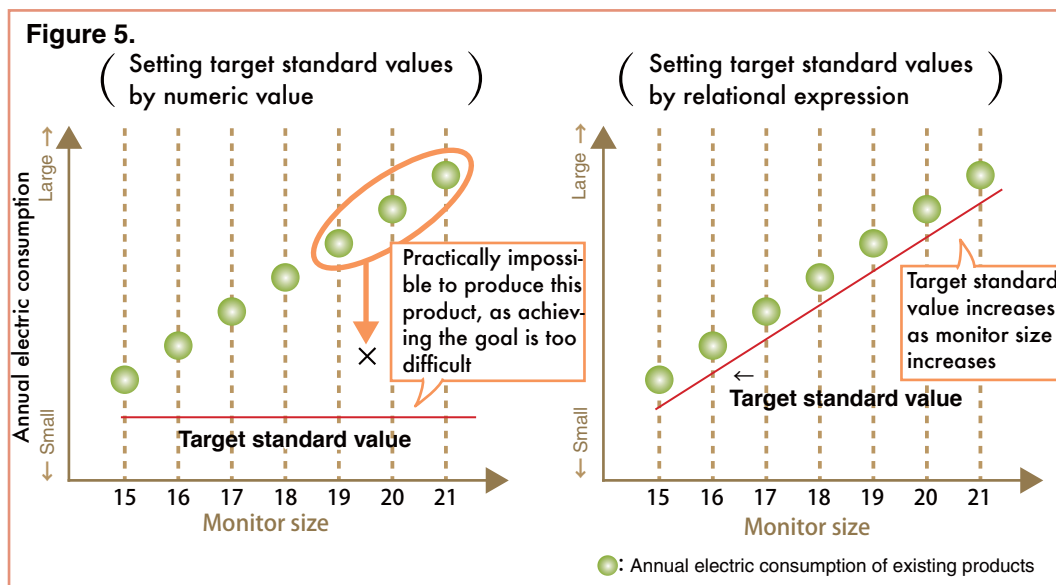


In cases where there is no consecutive relation to energy consumption efficiency, functions that influence energy consumption efficiency are set as basic indices. Corresponding to basic indices, numeric values are set. The establishment of DVD recorder categories by either being equipped with “HDD” and “VCR”, etc. can be cited as examples.

(2) Setting target standard values by relational expressions

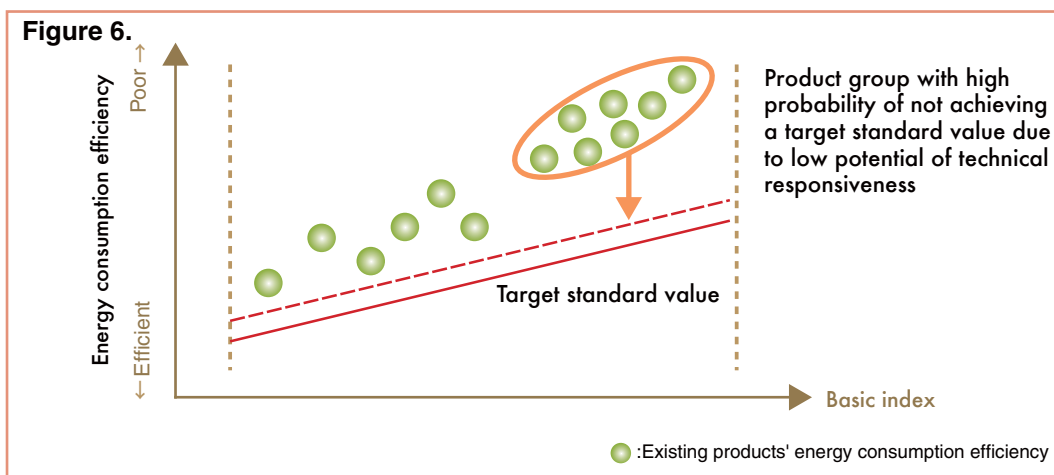
For certain specified energy-consuming machinery, equipment, and other items, to create categories and use one numeric value is not adequate when setting target standard values.

For TV sets, by setting screen size as the basic index, and setting annual electric consumption as energy consumption efficiency, annual electric consumption will increase as the screen size increases. Hypothetically, resulted from setting 15 to 21-inch TV sets as one category and setting one numeric value based on Top Runner Program as the target standard value, energy consumption efficiency of the 15-inch TV sets becomes the target standard value of the category. In this case, it is technically extremely difficult to achieve the energy consumption efficiency of a 15-inch TV set on a 21-inch TV set. Consequently, it becomes infeasible to produce 21-inch TV sets and it is no longer possible to meet the consumers’ various needs.



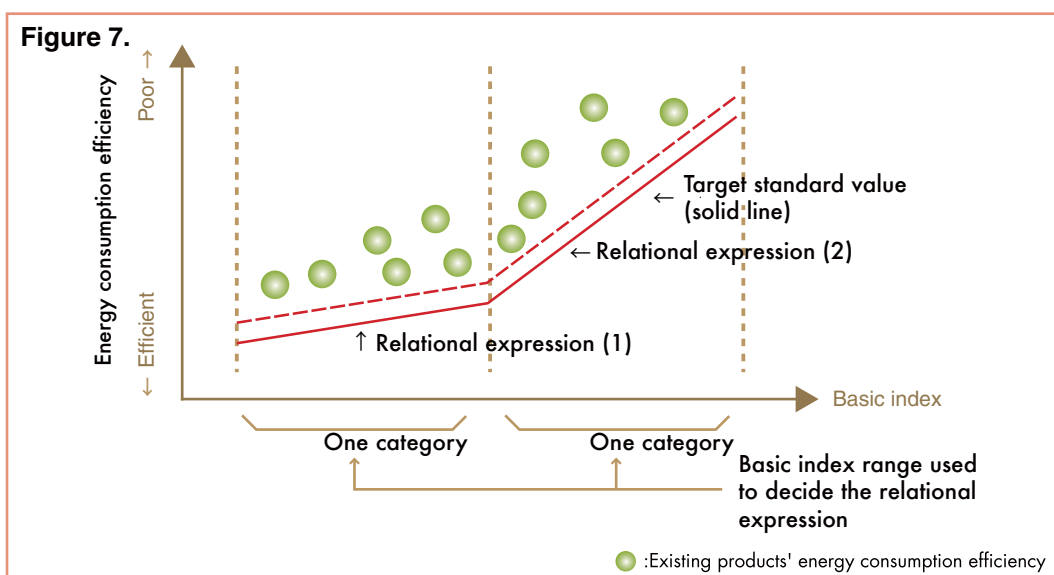
As in this example, in such a case where an increase in the basic index consequently worsens (improves) the energy consumption efficiency; if a single value is specified as a target standard value for the category, the Top Runner Program may make the production concentrate on the products that can most easily clear the target value of energy consumption efficiency and it becomes difficult to satisfy various customers needs; it is therefore appropriate to define the target standard value using calculation formulae.

Also, when setting target standard values using relational expressions above, it may be probable that target standard values will not be achieved within a basic index range due to the low potential of technical responsiveness in spite of high consumer needs.



In the above case, another category is established according to the standard index range and relational expressions that encompass the distribution point of the most efficient product within the categorized standard index range are acquired to set the target standard value.

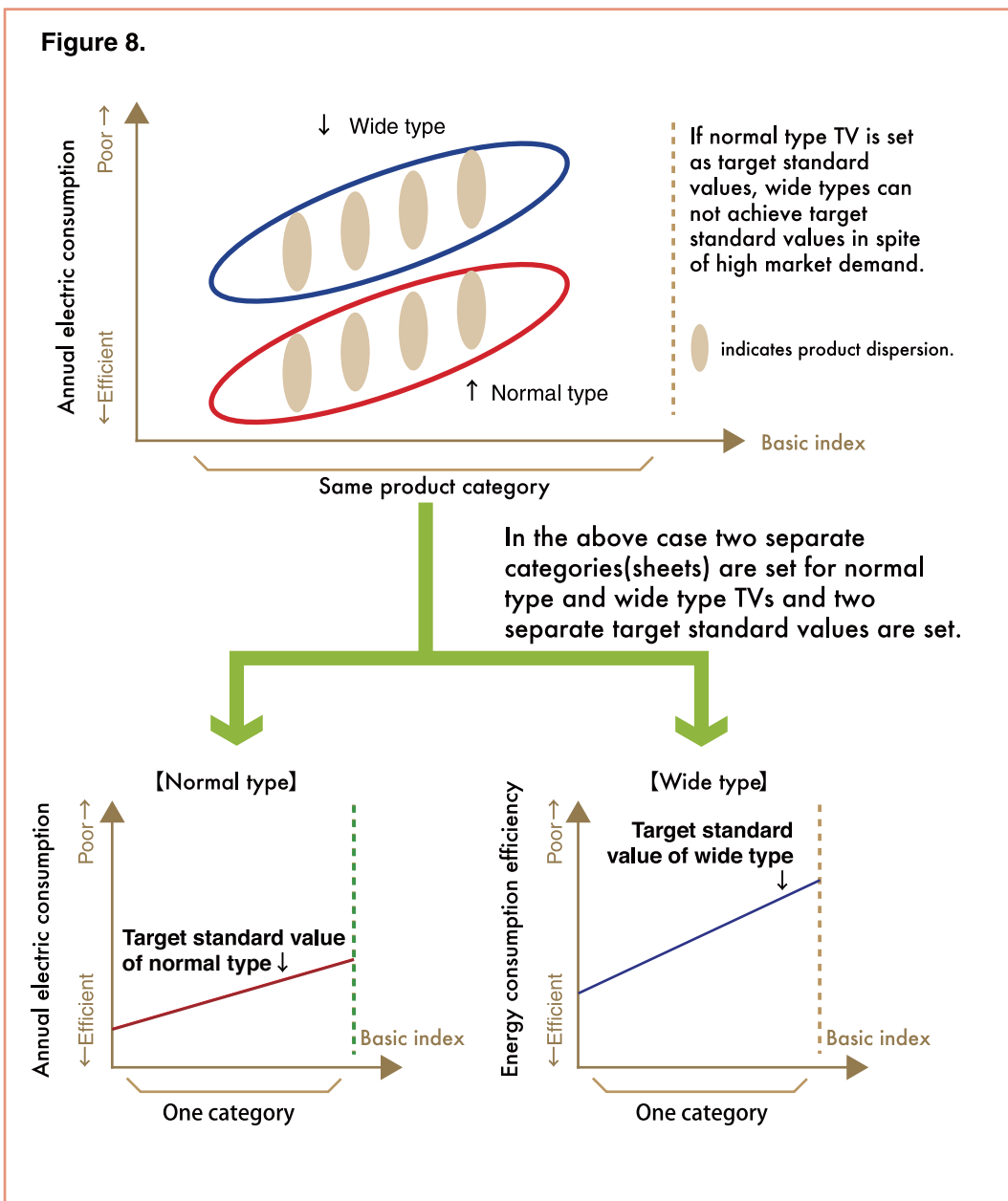
To set another category as in this case, to have technical and structural differences that affect the energy consumption efficiency within the categorized basic index is required.



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Principle 4. For a category setting, additive functions should be filtered out, in principle. However, the following concept is applied to cases in which a target standard value is set at the value of the energy consumption efficiency of a product with no additive functions. If there is a very high possibility that products with additive functions will have to be withdrawn from the market because of failure to meet target standard values in spite of high market demand, different categories (sheets) may be established.

An additional category (sheet) is established when another calculation formula for the target value is defined considering products' functions. As an example, when the target standard values are specified by different expressions due to the differences of TV set screen types (normal and wide type), separate categories (sheets) shall be specified.

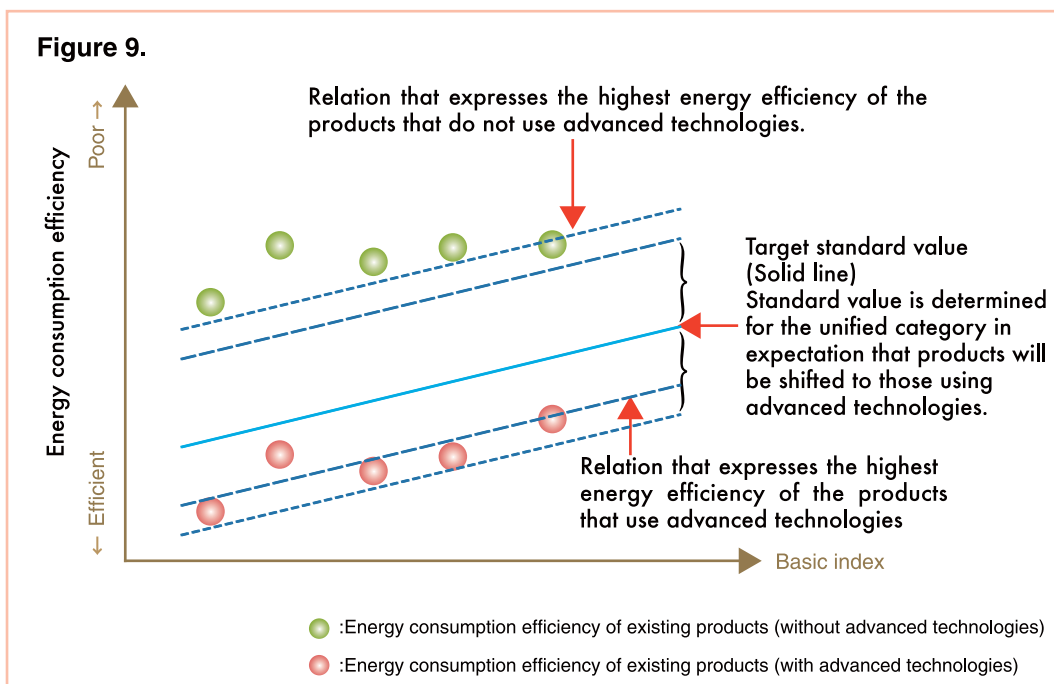


Principle5. For machinery, equipment, and other items having high prices and high energy consumption efficiency due to incorporated advanced energy saving technologies, although one possible choice is to add a separate category, it is desirable to treat them in the same category as much as possible so that manufactures are encouraged to actively promote the products having high energy consumption efficiency.

With regard to the products incorporating advanced energy saving technologies, if they are treated in the same category, manufactures are provided with an incentive to actively promote these products, because sales of these products makes it easier to achieve the target.

In addition, products having high energy consumption efficiency bring economical results through reductions in running costs in spite of high purchase price. Even if the purchase price is too high for the introduction cost of energy saving technologies to be compensated by the running costs, it is expected that widespread use of the products brings down the price. It is thus desirable to treat products having advanced high energy consumption efficiency in the same category, not setting a separate category by focusing on their technical differences.

However, when establishing target standard values, it should be also considered that if they are determined to be paying too much consideration to high-priced products having high energy consumption efficiency, consumers may possibly be forced to purchase economically inappropriate high-priced products in the name of energy saving.



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Principle6. Specialty goods are excluded when setting target standard values for a category. However, the potential availability for use of excluded specialty goods' technology is taken into account when the efficiency improvement through technological development is reviewed.

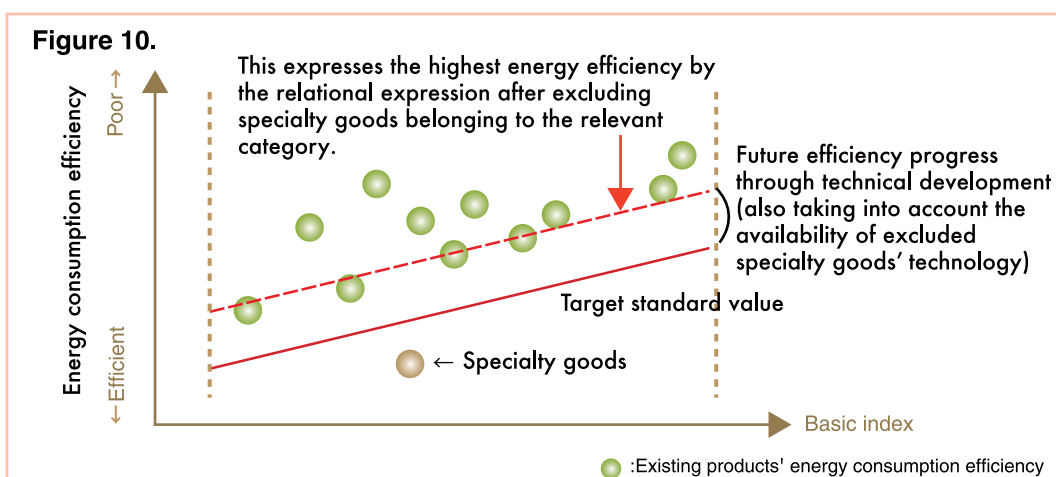
(1) Concept of specialty goods

When setting target standard values, it is appropriate to exclude the following products as specialty goods due to potential disruption of responses to various consumer needs, concerns to safety matters, and further innovations of energy conservation technologies.

- 1) Mainly custom order or made-to-order products not produced in large quantities with specific intended uses.
- 2) Products acknowledged having a high probability of being sold at lower than original cost to improve a company's image.
- 3) Products acknowledged immature in production techniques because safety and reliability evaluations have not been established.
- 4) Products acknowledged to use specific technologies with substantially low market share and considered to have potential uncertain future. If energy consumption efficiency values of products using these technologies are used as target standard values, it is highly likely that products that rely on widely-used technology will not be able to exist and this will distort the market excessively or restrict other improvements and innovations.
- 5) Performances and functions directly linked to consumer needs are not taken into consideration. Consequently, some products have possibly realized high energy consumption efficiency. Principle 3 should be applied to these products, but target standard values are difficult to be determined due to very few number of models (1 or 2 models) belonging to the category in concern.

(2) Consideration of specialty goods on the target standard value

When establishing target standard values, the availability of excluded specialty goods technology will be considered when reviewing efficiency improvements yielded by technical developments.



Principle7. To establish target standard values for home electric appliances and office equipment, reduction of standby power consumption should be taken into account.

Standby power consumption, which reportedly accounts for around 5% of household electric power consumption, needs to be further reduced. It is necessary to set target standard values that incorporate measurement methods that encourage the reduction of standby power consumption in any way possible. For example, in cases in which the usage of the machinery, equipment, and other items in operation and in standby mode can be patterned, it will be necessary to look into reflecting this factor in measurement values and target standard values.

Energy saving modes to reduce standby power consumption are continually introduced for some machinery, equipment, and other items. (For example, by user settings, the clock display function is disabled in standby mode; machine operation is switched to ready mode when not used for a certain predetermined time.) These energy saving modes should be considered when establishing judgment standards to further promote their use, as well as taking user needs for machinery, equipment, and other items into account.

4.3 Concept behind the Target Fiscal Year

Principle8. Target fiscal years are set three to ten years ahead per product, reflecting certain product development periods and the outlook for future technical developments for specified energy-consuming machinery, equipment, and other items.

It is thought that the period of time required to achieve a target varies depending on the relation between current energy consumption efficiency and a target standard value, and the degree of past energy consumption efficiency improvements. It is therefore considered appropriate to set target fiscal years three to ten years ahead providing an adequate lead time that accommodates product development periods, equipment investment periods, and the future technical development outlook for the relevant specified energy-consuming machinery, equipment, and other items. It is also appropriate to set different target fiscal years for each specified energy-consuming machinery, equipment, and other item because the relation between current energy consumption efficiency and the target standard value, the degree of past energy consumption efficiency improvements, the product development period, the equipment investment period, the future technical development outlook, and the like differ depending on the specified product.

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4.4 Concept behind the Achievement Evaluation Method

Principle9. Whether the result achieves the target standard value in the target fiscal year is determined by a weighted average method per manufacturer and category.

The weighted average method (weighted harmonized average method) enables products rated under the target standard value to be brought to market if there is high market demand, by creating many more energy-efficient products rated above the target standard value. Consequently, manufacturers will be offered incentives to bring higher energy efficient products to market and lead to improvements in other products' energy consumption efficiency. The impact of relevant judgment will also help ensure product variety in specific energy-consuming machinery, equipment, and other items.

4.5 Concept behind the Measurement Methodology

Principle10. Measurement methods should bear domestic and international harmonization in mind. If a standard has been already established, the measurement method should harmonize with the standard to the extent possible. Where no measurement method standard exists, it is appropriate to adopt specific, objective, and quantitative measurement methods based on actual usage of machinery, equipment, and other items.

Measurement methods should be based on the actual usage of specific energy-consuming machinery, equipment, and other items. If a measurement method has been established through voluntary or compulsory standards, including International Standards and Japanese Industrial Standards (JIS), it is appropriate to adopt relevant measurement methods that ensure domestic and international harmonization. When no measurement method exists as described above, the measurement method should be objective and quantitative.

CHAPTER **5**

Policy Concerning Popularization of Top Runner Program Target Machinery, Equipment, and Other Items

5.1 Display Obligations

The Energy Conservation Law has established a display program for the target machinery, equipment, and other items of the Top Runner Program so that buyers can obtain information concerning energy consumption efficiency at the time of purchase. Under the display program, manufacturers of target machinery, equipment, and other items are required to display matters regulated under the "Notifications" and penalties will apply when a manufacturer does not comply to display requirements. Intentions of these requirements are, in addition to requiring manufacturers to work to improve energy consumption efficiency, providing buyers of machinery, equipment, and other items correct information concerning the energy consumption efficiency of individual products to facilitate the popularization of products with superior energy consumption efficiency, which may achieve the secondary effect of encouraging manufacturers' motivation regarding technical development.

Display and compliance items are described in a "Notification" for each machinery, equipment, and other item. Display items generally include: 1) energy consumption efficiency or heat loss prevention performance and closely related items; 2) product name and type, which specifies the product; and 3) name of the manufacturer responsible for the display. Compliance items are items that must be included specifically at the time of the display on machinery, equipment, and other items, such as the location of the display, the size of the display characters, units, and so forth. To avoid duplication of laws, machinery and equipment for which the displays are already stipulated under the Household Goods Quality Labeling Law should follow this law.

If a manufacturer's display does not adhere to the display and compliance items, the Minister of Economy, Trade and Industry (in cases involving cars, the Minister of Economy, Trade and Industry and the Minister of Land, Infrastructure, Transport and Tourism) will advise the manufacturer in question. Further, if this advice is not heeded, the advice will be made public and the manufacturer will be ordered to follow the recommendations. If the manufacturer does not obey the order in question, penalties are imposed.

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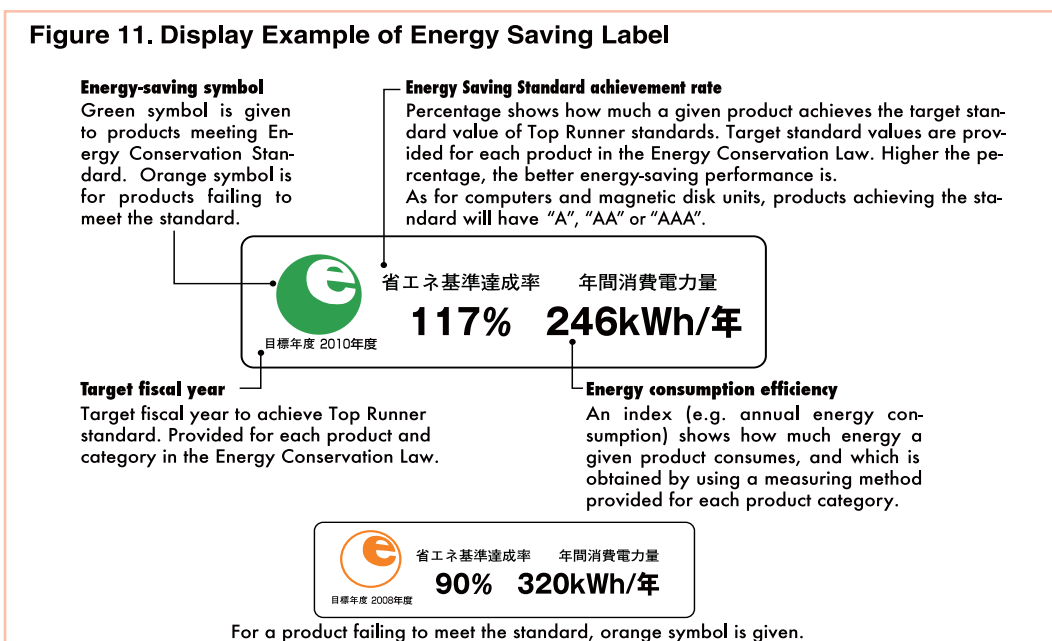
5.2 Energy Saving Labeling Program

To promote the popularization of highly efficient machinery, equipment, and other items that have achieved Top Runner standard values through manufacturers' efforts, providing consumers with information is essential.

For this end, to further facilitate the popularization of energy-efficient equipment, the Energy Efficiency Standards Subcommittee of Advisory Committee for Natural Resources and Energy (currently the Energy Efficiency and Conservation Subcommittee of the Committee on Energy Efficiency and Renewable Energy under the Advisory Committee for Natural Resources and Energy) held discussions toward the establishment of the best labeling program (Energy saving Labeling Program) in Japan. These discussions resulted in a decision to have four items shown on the label, including a symbol used to show the degree that energy saving standards had been achieved, energy saving standard achievement rate, energy consumption efficiency, and the target fiscal year. The discussions also led to a decision that the JIS should devise the energy saving labeling program.

Following this, the "JIS Energy Saving Labeling Committee" assembled a first draft and the Japanese Industrial Standards Committee's Committee on Electricity and Electronics approved the draft. Subsequently, in August 2000, the labeling program was established as a JIS standard and the energy saving labeling program was launched. During initial phases, the energy saving labeling program targeted five product categories, including air conditioners, lighting equipment for fluorescent lamp(s), TV sets, electric refrigerators, and electric freezers, but in 2003, five additional product items were added, including space heaters, gas cooking appliances, gas water heaters, oil water heaters, and electric toilet seats. Additional product items, including computers, magnetic disk units, and transformers later followed. With the subsequent addition of three more including microwave ovens, electric rice cookers, and DVD recorders in 2007, the addition of two more items, routers and switching units, in 2010, and then three more including electric water heaters, self-ballasted LED lamps, and AC motors in 2013, the energy saving labeling program now covers 21 product items. Participation in the energy saving labeling program is a voluntary scheme based on the JIS system, and labeling is required to be indicated on the participants' catalogues and products themselves. The system is now actively utilized in manufacturers' catalogs among other things. Such labeling is also permitted on packaging, products themselves, tags and so forth other than catalogues.

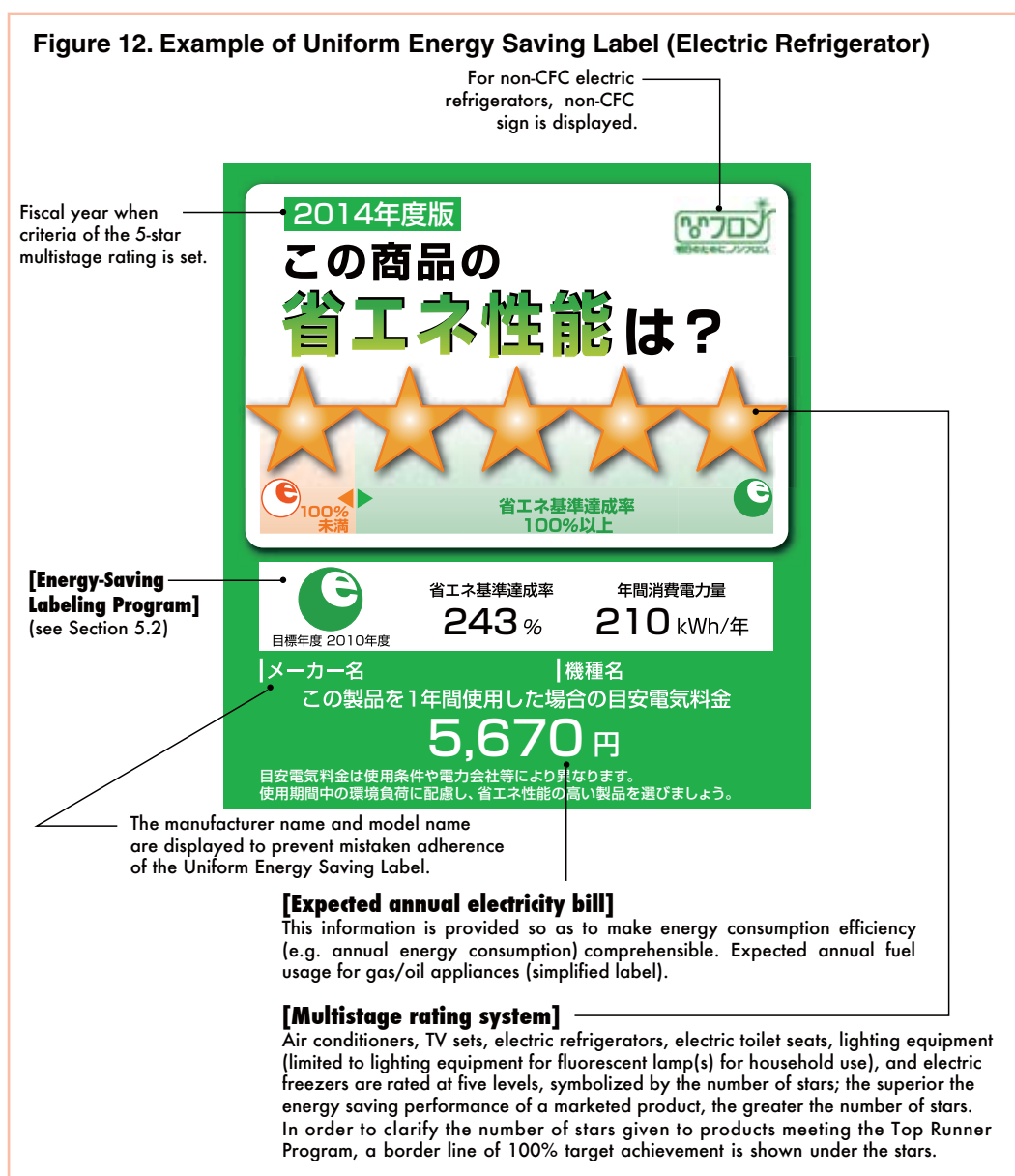
Figure 11. Display Example of Energy Saving Label



5.3 Label Display Program for Retailers

Highly efficient machinery, equipment, and other items had so far been promoted with the energy saving labeling program described in Section 5.2. However, taking into consideration the importance of retailers' role as an interface to consumers, obligation of retailers to make efforts for information provision was included in the revised Law Concerning the Rational Use of Energy that went into effect in April 2006. Retailer Evaluation Standard Subcommittee (currently the Working Group on Classification Standards for Retail Labeling) established under Energy Efficiency Standards Subcommittee of Advisory Committee for Natural Resources and Energy (currently the Energy Efficiency and Conservation Subcommittee of the Committee on Energy Efficiency and Renewable Energy under the Advisory Committee for Natural Resources and Energy) discussed the concept of display of energy-saving information and asked for comments from various levels of Japanese society. Thus, a guideline was finally developed.

To be specific, it stipulates that retailers provide information of products displayed at their shops with the use of the "Uniform Energy-Saving Label" (Figure 12) which presents multistage rating, expected electricity bill, and other information. The multistage rating uses a 5-starmark to represent a relative position of a given product in the market with



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respect to energy-saving performance.

Since October 2006, the "Uniform Energy-Saving Label" has been applied to air conditioners, electric refrigerators, and TV sets, whose large energy consumption per unit results in a wide variation in energy-saving performance. Subsequently, electric toilet seats were added in May 2009, lighting equipment (limited to lighting equipment for fluorescent lamp(s) for household use) in April 2010, and electric freezers in December 2014, resulting in the coverage of six product items at present. As for other designated products, the energy-saving label (see Section 5.2 "Energy Saving Labeling Program"), and expected annual electricity bill (expected annual fuel usage for gas/oil water heaters) are required to be displayed on the product body or nearby (simplified label: retailer's own format).

Further, based on the increase in sales in home appliances from online shops in recent years, it is preferred that retailers who sell equipment using the Internet also actively utilize the "Uniform Energy-Saving Label" and information set forth on the label and engage in activities that promote the popularization of energy-saving equipment.

The machinery, equipment, and other items covered by these labeling programs are shown in the table below. The Uniform Energy-Saving Label (including the simplified label) can be printed from the following website.

<http://www.seihinjyoho.go.jp>

| Target Products Covered by the Top Runner Program and Label Contents | | | |
|---|--|----------------------------------|--------------------------|
| Target products of Top Runner Program | Energy-Saving Labeling Program | Expected annual electricity bill | Multistage rating system |
| Air conditioners | ● | ● | ● |
| TV sets | ● | ● | ● |
| Electric refrigerators | ● | ● | ● |
| Electric toilet seats | ● | ● | ● |
| Lighting equipment <small>(lighting equipment using only fluorescent lamp(s) as main light source)</small> | Lighting equipment for fluorescent lamp(s) | ● | ●* |
| | Self-ballasted fluorescent lamp(s) | ● | |
| Electric freezers | ● | ● | ● |
| Electric rice cookers | ● | ● | |
| Microwave ovens | ● | ● | |
| DVD recorders | ● | ● | |
| VCRs | | ● | |
| Space heaters | ● | | |
| Gas cooking appliances | ● | ●(Fuel usage) | |
| Gas water heaters | ● | ●(Fuel usage) | |
| Oil water heaters | ● | ●(Fuel usage) | |
| Computers | ● | | |
| Magnetic disk units | ● | | |
| Transformers | ● | | |
| Routers | ● | | |
| Switching units | ● | | |
| Electric water heaters (heat pump type water supply system) | ● | | |
| AC motors | ● | | |
| Self-ballasted LED lamps | ● | ● | |
| Copying machines | | | |
| Vending machines | | | |
| Passenger Vehicles | | | |
| Freight Vehicles | | | |
| Multifunction devices | | | |
| Printers | | | |
| Insulation materials | | | |
| Sashes | | | |
| Multi-paned glazing | | | |

Products covered by labeling system for retailers * Limited to lighting equipment for fluorescent lamp(s) for household use.

CHAPTER 6 Target Achievement Evaluation

6.1 Target Achievement Verification Method

For each of the companies that manufacture or import machinery, equipment, and other items covered by the Top Runner Program, each machinery, equipment, and other item category's weighted average value must achieve a target standard value by the target fiscal year. To confirm achievement of Top Runner standards, questionnaires are distributed to machinery, equipment, and other item manufacturers soon after the target fiscal year, and information is obtained on the number of units shipped, energy consumption efficiency, and the like in the target fiscal year. The surveys are conducted by the Agency for Natural Resources and Energy that is responsible for enforcing the Energy Conservation Law.

Weighted average energy efficiency

= the sum of {(the number of units shipped domestically for each product name and type) × (energy consumption efficiency per unit)} / the total number of units shipped domestically.

To confirm display implementation, product catalogues, as the primary source for displays, are periodically and continuously collected. For displays on products themselves, submission of name plates, etc. or retail store surveys are conducted to confirm the implementation.

6.2 Measures Implemented When Target Values Are Not Achieved

If the results obtained from the energy efficiency surveys mentioned in the previous paragraph appear to be remarkably low compared to judgment standards and a need to make suitable improvements in energy efficiency is recognized at the time, the Minister of Economy, Trade and Industry (in cases involving cars, the Minister of Economy, Trade and Industry and the Minister of Land, Infrastructure, Transport and Tourism) offer recommendations to the manufacturer in question as required. Further, if this advice is not followed, the recommendations are made public and the manufacturer may be ordered to follow the recommendations.

Manufacturers subject to these recommendations and advice should be limited to those whose performance improvements in manufacturing and imports of machinery, equipment, and other items are considered to have a substantial impact on energy consumption in Japan. Also, targets should be limited to manufacturers whose organizational capacity is economically and financially firm enough, that is, limited to manufacturers for which there will be no problems regarding social appropriateness. For each machinery, equipment, and other item covered by the Top Runner Program, a cutback in shipping volume will be set according to production and import volume, as stipulated by government degree.

Moreover, if, there are categories that partially fail to achieve goals among the many items, it will not be appropriate to advise the manufacturer immediately. Instead, reasons why goals were not achieved, other companies' achievement records in the same field, achievement records in other categories of the company in question, and percentages of categories that have not achieved target standards in overall categories, and other factors will be comprehensively evaluated.

These measures are implemented for manufacturers that do not adhere to display rules. For displays, cutbacks based on manufacturers' production and import volume are not applied and all companies are subject to these measures in spite of small volume in production and import.

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CHAPTER 7

Specific Details of Top Runner Program Standards for Target Machinery, Equipment, and Other Items

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| 7.4 | TV Sets | 41 | 7.21 | DVD Recorders | 78 |
| 7.5 | Copying Machines | 46 | 7.22 | Routers | 80 |
| 7.6 | Computers | 48 | 7.23 | Switching Units | 82 |
| 7.7 | Magnetic Disk Units | 51 | 7.24 | Multifunction Devices | 84 |
| 7.8 | Freight Vehicles | 53 | 7.25 | Printers | 85 |
| 7.9 | Video Cassette Recorders | 59 | 7.26 | Electric Water Heaters | 86 |
| 7.10 | Electric Refrigerators | 60 | | (Heat Pump Type Water Supply System) | |
| 7.11 | Electric Freezers | 63 | 7.27 | AC Motors | 88 |
| 7.12 | Space Heaters | 65 | 7.28 | Self-ballasted LED Lamps | 92 |
| 7.13 | Gas Cooking Appliances | 66 | 7.29 | Insulation Materials | 93 |
| 7.14 | Gas Water Heaters | 68 | 7.30 | Sashes | 94 |
| 7.15 | Oil Water Heaters | 70 | 7.31 | Multi-Paned Glazing | 95 |
| 7.16 | Electric Toilet Seats | 71 | | | |



7.1 Passenger Vehicles(1)

Target Scope

- Gasoline, diesel and LP gas passenger vehicles with a riding capacity of 10 persons or less that have received model designation (type-approved vehicles) based on Item 1, Article 75 of the Road Trucking Vehicle Law (Law No. 185 enacted in 1951)
- Gasoline and diesel passenger vehicles with a riding capacity of 11 persons or more (limited to gross vehicle weight of 3.5 tons or less) that have been type-approved (hereinafter referred to as “small buses”).
- Diesel passenger vehicles with a riding capacity of 11 persons or more (limited to vehicles with a gross vehicle weight exceeding 3.5 tons) that have received model designation as well as vehicles fitted with a device for preventing the emanation of carbon monoxide, and so on, designated based on Item 1 of 2 of Article 75 of the Road Trucking Vehicle Law (vehicles designated to be fitted with a device for preventing the emanation of carbon monoxide and so on)

Energy Consumption Efficiency

Since FY 2015
 A numeric value (fuel efficiency in km/l) shall be the one stipulated by the statute related to the calculation of the energy consumption efficiency of a vehicle (No. 3 statute of the Ministry of International Trade and Industry and the Transport Ministry enacted in 1979).
 It is noted that the following fuel efficiency values shall be used according to the type of vehicles.

- Gasoline passenger vehicles, diesel passenger vehicles, and small buses: JC08 mode fuel efficiency values
- LP gas passenger vehicles: 10 • 15 mode fuel efficiency values
- Route buses and ordinary buses: Heavy vehicle mode fuel efficiency values

Until FY 2014
 A numeric value (fuel efficiency in km/l) stipulated by the statute related to the calculation of the energy consumption efficiency of an automobile (No. 3 statute of the Ministry of International Trade and Industry and the Transport Ministry enacted in 1979)
 It is noted that the following fuel efficiency values shall be used according to the type of vehicles.

- Gasoline passenger vehicles, diesel passenger vehicles and small buses: 10•15 mode fuel efficiency values*
- LP gas passenger vehicles: 10•15 mode fuel efficiency values
- Route buses, and ordinary buses: Heavy vehicle mode fuel efficiency values

* Fuel efficiency in the JC08 mode shall also be displayed for vehicles that comply with the safety standards for road trucking vehicles in both JC08H and JC08C modes, which are specified in the “Notice of the safety standard details for road trucking vehicles (Notice No. 619 of the Ministry of Land, Infrastructure and Transport, 2002)”

Category, Target Values

In the target fiscal year and each subsequent fiscal year, energy consumption efficiency in each category shall be at or greater than the target standard value.

| Vehicle type | Fuel type | Target fiscal year and Target standard value |
|---|------------|---|
| Passenger vehicles (Riding capacity of 10 persons or less) | Gasoline | <ul style="list-style-type: none"> ● FY 2010 and each subsequent fiscal year (until FY 2014):Target standards (1) shall be complied with. ● FY 2015 and each subsequent fiscal year (until FY 2019):Target standards (2) shall be complied with. ● FY 2020 and each subsequent fiscal year: Target standards (3) shall be complied with. |
| | Diesel oil | <ul style="list-style-type: none"> ● FY 2005 and each subsequent fiscal year (until FY 2014):Target standards (1) shall be complied with. ● FY 2015 and each subsequent fiscal year (until FY 2019):Target standards (2) shall be complied with. ● FY 2020 and each subsequent fiscal year: Target standards (3) shall be complied with. |
| | LP gas | <ul style="list-style-type: none"> ● FY 2010 and each subsequent fiscal year (until FY 2019):Target standards (1) shall be complied with. ● FY 2020 and each subsequent fiscal year: Target standards (3) shall be complied with. |

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7.1 Passenger Vehicles(2)

| | | |
|--|------------------------|--|
| Small buses (Riding capacity of 11 persons or more, gross vehicle weight of 3.5 tons or less) | Gasoline or diesel oil | <ul style="list-style-type: none"> ●FY 2015 and each subsequent fiscal year (until FY 2019): Target standards (2) shall be complied with. ●FY 2020 and each subsequent fiscal year: Target standards (3) shall be complied with. |
| Route buses, ordinary buses (Riding capacity of 11 persons or more, gross vehicle weight over 3.5 tons) | Diesel oil | <ul style="list-style-type: none"> ●FY 2015 and each subsequent fiscal year: Target standards (2) shall be complied with. |

(1) Vehicles whose target fiscal year is :

- FY 2005 and each subsequent fiscal year (until FY 2014) (Diesel passenger vehicles),
- FY 2010 and each subsequent fiscal year (until FY 2014) (Gasoline passenger vehicles),
- FY 2010 and each subsequent fiscal year (until FY 2019) (LP gas passenger vehicles)

Passenger vehicles that have a riding capacity or 10 persons or less

| Category | Standard energy consumption efficiency (10·15 mode fuel efficiency value) | | |
|--|---|--------|--------|
| | Gasoline | Diesel | LP gas |
| Passenger vehicles weighing less than 703 kg | 21.2 | 18.9* | 15.9 |
| Passenger vehicles weighing 703 or more and less than 828 kg | 18.8 | 18.9* | 14.1 |
| Passenger vehicles weighing 828 or more and less than 1,016 kg | 17.9 | 18.9* | 13.5 |
| Passenger vehicles weighing 1,016 or more and less than 1,266 kg | 16.0 | 16.2 | 12.0 |
| Passenger vehicles weighing 1,266 or more and less than 1,516 kg | 13.0 | 13.2 | 9.8 |
| Passenger vehicles weighing 1,516 or more and less than 1,766 kg | 10.5 | 11.9 | 7.9 |
| Passenger vehicles weighing 1,766 or more and less than 2,016 kg | 8.9 | 10.8 | 6.7 |
| Passenger vehicles weighing 2,016 or more and less than 2,266 kg | 7.8 | 9.8 | 5.9 |
| Passenger vehicles weighing 2,266 kg or more | 6.4 | 8.7 | 4.8 |

★ A vehicle weight less than 1,016kg is treated as one category.

Remarks : “Vehicle weight” refers to the weight of a vehicle when empty as specified in Item 6, Article 1 of the safety standards for road trucking vehicles (No. 67 statute of the Transport Ministry enacted in 1951). The same applies hereinafter.

<Judgment criteria exceptions>

If a company engaged in manufacturing or importing gasoline passenger vehicles manufactures or imports a gasoline passenger vehicle in a category in which the gasoline passenger vehicle average fuel efficiency value is below the standard energy consumption efficiency set forth in the table above (referred to as an underachieving category) but not below the energy consumption efficiency permissible value set forth in the right column of the following table per category set forth in the left column, and the underachieving amount of the underachieving category (the value obtained by multiplying the difference between the inverse of the gasoline passenger vehicle average fuel efficiency value of the relevant underachieving category and the inverse of the standard energy consumption efficiency by the number of vehicles shipped in the category) can be offset by the excess of an overachieving amount (the value obtained by dividing the total sum of the values obtained by multiplying the difference between the inverse of the gasoline passenger vehicle average fuel efficiency value and the inverse of the standard energy consumption efficiency by the number of vehicles shipped in the category, in all categories in which the gasoline passenger vehicle average fuel efficiency value is not below the standard energy consumption efficiency set forth in the table above, by 2), the underachieving category in which the entire underachieving amount has been offset may be regarded as a category in which the average fuel efficiency value is not below the standard energy consumption efficiency set forth in the table above.

| Category | Energy consumption efficiency permissible value |
|---|---|
| 1 Gasoline passenger vehicles weighing less than 703 kg | 20.2 |
| 2 Gasoline passenger vehicles weighing 703 or more and less than 828 kg | 18.5 |
| 3 Gasoline passenger vehicles weighing 828 or more and less than 1,016 kg | 17.1 |
| 4 Gasoline passenger vehicles weighing 1,016 or more and less than 1,266 kg | 14.1 |
| 5 Gasoline passenger vehicles weighing 1,266 or more and less than 1,516 kg | 12.6 |
| 6 Gasoline passenger vehicles weighing 1,516 or more and less than 1,766 kg | 9.8 |
| 7 Gasoline passenger vehicles weighing 1,766 or more and less than 2,016 kg | 8.0 |
| 8 Gasoline passenger vehicles weighing 2,016 or more and less than 2,266 kg | 6.8 |
| 9 Gasoline passenger vehicles weighing 2,266 kg or more | 6.1 |



7.1 Passenger Vehicles(3)

(2) Vehicles whose target fiscal year is FY 2015 and each subsequent fiscal year (until FY 2019)
Passenger vehicles fueled with gasoline or diesel oil and having a riding capacity of 10 persons or less

| Category | Standard energy consumption efficiency (JC08 mode fuel efficiency value) |
|--|---|
| Passenger vehicles weighing less than 601 kg | 22.5 |
| Passenger vehicles weighing 601 or more and less than 741 kg | 21.8 |
| Passenger vehicles weighing 741 or more and less than 856 kg | 21.0 |
| Passenger vehicles weighing 856 or more and less than 971 kg | 20.8 |
| Passenger vehicles weighing 971 or more and less than 1,081 kg | 20.5 |
| Passenger vehicles weighing 1,081 or more and less than 1,196 kg | 18.7 |
| Passenger vehicles weighing 1,196 or more and less than 1,311 kg | 17.2 |
| Passenger vehicles weighing 1,311 or more and less than 1,421 kg | 15.8 |
| Passenger vehicles weighing 1,421 or more and less than 1,531 kg | 14.4 |
| Passenger vehicles weighing 1,531 or more and less than 1,651 kg | 13.2 |
| Passenger vehicles weighing 1,651 or more and less than 1,761 kg | 12.2 |
| Passenger vehicles weighing 1,761 or more and less than 1,871 kg | 11.1 |
| Passenger vehicles weighing 1,871 or more and less than 1,991 kg | 10.2 |
| Passenger vehicles weighing 1,991 or more and less than 2,101 kg | 9.4 |
| Passenger vehicles weighing 2,101 or more and less than 2,271 kg | 8.7 |
| Passenger vehicles weighing 2,271 kg or more | 7.4 |

<Judgment criteria exceptions>

If a company engaged in manufacturing or importing gasoline passenger vehicles or diesel passenger vehicles manufactures or imports a gasoline passenger vehicle in a category in which the gasoline passenger vehicle average fuel efficiency value is below the standard energy consumption efficiency set forth in the right column of the table above (referred to as an underachieving category), and the underachieving amount of the underachieving category (the value obtained by multiplying the difference between the inverse of the gasoline passenger vehicle average fuel efficiency value of the relevant underachieving category and the inverse of the standard energy consumption efficiency by the number of vehicles shipped in the category) can be offset by the excess of an overachieving amount (the total sum of the values obtained by multiplying the difference between the inverse of the gasoline passenger vehicle average fuel efficiency value and the inverse of the standard energy consumption efficiency by the number of vehicles shipped in the category, in all categories in which the gasoline passenger vehicle average fuel efficiency value is not below the standard energy consumption efficiency set forth in the right column of the table above), the underachieving category in which the entire underachieving amount has been offset may be regarded as a category in which the average fuel efficiency value is not below the standard energy consumption efficiency set forth in the right column in the table above.

Small buses riding capacity of 11 persons and more (Gross vehicle weight of 3.5 tons or less)

| Category | Standard energy consumption efficiency (JC08 mode fuel efficiency value) |
|------------------------|---|
| Fueled with gasoline | 8.5 |
| Fueled with diesel oil | 9.7 |

Remarks: "Gross vehicle weight" refers to the gross vehicle weight as specified in Item 3, Article 40 of the Road Trucking Vehicle Law. The same applies hereinafter.

<Judgment criteria exceptions>

If a company engaged in manufacturing or importing small buses manufacturers or imports a small bus in a category in which the small bus average fuel efficiency value is below the standard energy consumption efficiency set forth in the right column in the table above (referred to as an underachieving category), and the underachieving amount of the underachieving category (the value obtained by multiplying the difference between the inverse of the small bus average fuel efficiency value of the relevant underachieving category and the inverse of the standard energy consumption efficiency by the number of buses shipped in the category (and by multiplying the value by 1.1 for the "Fueled with diesel oil" category)) can be offset by an overachieving amount (the total sum of the values obtained by multiplying the difference between the inverse of the small bus average fuel efficiency value and the inverse of the standard energy consumption efficiency by the number of vehicles shipped in the category (and by multiplying the value by 1.1 for the "Fueled with diesel oil" category), in all categories in which the small bus average fuel efficiency value is not below the standard energy consumption efficiency set forth in the right column of the table above), the underachieving category in which the entire underachieving amount has been offset may be regarded as a category in which the average fuel efficiency value is not below the standard energy consumption efficiency set forth in the right column in the table above.

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7.1 Passenger Vehicles(4)

Buses fueled with diesel oil and having a riding capacity of 11 persons or more
(Gross vehicle weight of over 3.5 tons)

| Category | Standard energy consumption efficiency (Heavy vehicle mode fuel efficiency value) | |
|--|--|----------------|
| | Route buses | Ordinary buses |
| Buses with a gross vehicle weight over 3.5 tons and not more than 6 tons | 6.97* ¹ | 9.04 |
| Buses with a gross vehicle weight over 6 tons and not more than 8 tons | 6.97* ¹ | 6.52 |
| Buses with a gross vehicle weight over 8 tons and not more than 10 tons | 6.30 | 6.37 |
| Buses with a gross vehicle weight over 10 tons and not more than 12 tons | 5.77 | 5.70 |
| Buses with a gross vehicle weight over 12 tons and not more than 14 tons | 5.14 | 5.21 |
| Buses with a gross vehicle weight over 14 tons and not more than 16 tons | 4.23* ² | 4.06 |
| Buses with a gross vehicle weight over 16 tons | 4.23* ² | 3.57 |

*¹ Buses with a gross vehicle weight exceeding 3.5 tons and not over 8 tons make one category.

*² Buses with a gross vehicle weight exceeding 14 tons make one category.

<Judgment criteria exceptions>

If a company engaged in manufacturing or importing route or ordinary buses manufacturers or imports a route or ordinary bus in a category in which the route or ordinary bus average fuel efficiency value is below the standard energy consumption efficiency set forth above (referred to as an underachieving category), and the underachieving amount of the underachieving category (the value obtained by multiplying the difference between the inverse of the route or ordinary bus average fuel efficiency value of the relevant underachieving category and the inverse of the standard energy consumption efficiency by the number of buses shipped in the category) can be offset by an overachieving amount (the value obtained by dividing the total sum of the values obtained by multiplying the difference between the inverse of the route or ordinary bus average fuel efficiency value and the inverse of the standard energy consumption efficiency by the number of buses shipped in the category, in all categories in which the route or ordinary bus average fuel efficiency value is not below the standard energy consumption efficiency set forth in the table above, by 2), the underachieving category in which the entire underachieving amount has been offset may be regarded as a category in which the average fuel efficiency value is not below the standard energy consumption efficiency set forth in the table above.

(3) Vehicles whose target fiscal year is FY 2020 and each subsequent fiscal year
Passenger vehicles and small buses with gasoline, diesel oil, or LP gas

| Category | Standard energy consumption efficiency (JC08 mode fuel efficiency value) |
|---|---|
| Gasoline passenger vehicles, diesel passenger vehicles, LP gas passenger vehicles, and small buses weighing less than 741kg | 24.6 |
| Gasoline passenger vehicles, diesel passenger vehicles, LP gas passenger vehicles, and small buses weighing 741 or more and less than 856kg | 24.5 |
| Gasoline passenger vehicles, diesel passenger vehicles, LP gas passenger vehicles, and small buses weighing 856 or more and less than 971kg | 23.7 |
| Gasoline passenger vehicles, diesel passenger vehicles, LP gas passenger vehicles, and small buses weighing 971 or more and less than 1,081kg | 23.4 |
| Gasoline passenger vehicles, diesel passenger vehicles, LP gas passenger vehicles, and small buses weighing 1,081 or more and less than 1,196kg | 21.8 |
| Gasoline passenger vehicles, diesel passenger vehicles, LP gas passenger vehicles, and small buses weighing 1,196 or more and less than 1,311kg | 20.3 |
| Gasoline passenger vehicles, diesel passenger vehicles, LP gas passenger vehicles, and small buses weighing 1,311 or more and less than 1,421kg | 19.0 |
| Gasoline passenger vehicles, diesel passenger vehicles, LP gas passenger vehicles, and small buses weighing 1,421 or more and less than 1,531kg | 17.6 |
| Gasoline passenger vehicles, diesel passenger vehicles, LP gas passenger vehicles, and small buses weighing 1,531 or more and less than 1,651kg | 16.5 |
| Gasoline passenger vehicles, diesel passenger vehicles, LP gas passenger vehicles, and small buses weighing 1,651 or more and less than 1,761kg | 15.4 |
| Gasoline passenger vehicles, diesel passenger vehicles, LP gas passenger vehicles, and small buses weighing 1,761 or more and less than 1,871kg | 14.4 |
| Gasoline passenger vehicles, diesel passenger vehicles, LP gas passenger vehicles, and small buses weighing 1,871 or more and less than 1,991kg | 13.5 |
| Gasoline passenger vehicles, diesel passenger vehicles, LP gas passenger vehicles, and small buses weighing 1,991 or more and less than 2,101kg | 12.7 |
| Gasoline passenger vehicles, diesel passenger vehicles, LP gas passenger vehicles, and small buses weighing 2,101 or more and less than 2,271kg | 11.9 |
| Gasoline passenger vehicles, diesel passenger vehicles, LP gas passenger vehicles, and small buses weighing 2,271kg or more | 10.6 |



7.1 Passenger Vehicles(5)

Remarks: The weighted harmonic average obtained by weighting and averaging the energy consumption efficiency values (the energy consumption efficiency divided by 1.1 for diesel passenger vehicles and diesel small buses, and the energy consumption efficiency divided by 0.78 for LP gas passenger vehicles) of gasoline passenger vehicles, diesel passenger vehicles, LP gas passenger vehicles, and small buses shipped to the domestic market with the number of vehicles shipped (referred to as “corporate average fuel efficiency”) should not be below the weighted harmonic average obtained by weighting and averaging the standard energy consumption efficiency values set forth in the right column of the table above with the number of vehicles shipped in each category set forth in the left column of the table (referred to as “corporate standard energy consumption efficiency”).

<Judgment criteria exceptions>

If a company engaged in manufacturing or importing gasoline passenger vehicles, diesel passenger vehicles, LP gas passenger vehicles, or small buses manufactures or imports a vehicle or small bus in a category in which the corporate average fuel efficiency value is below the corporate standard energy consumption efficiency and not below the value obtained by multiplying the corporate standard energy consumption efficiency by 0.9, and the weighted harmonic average obtained by weighting and averaging the energy consumption efficiency values (the numeric values stipulated under Item 1, Article 1 of the Ministerial Ordinance (limited to JC08 mode fuel efficiency values)) (the value obtained by dividing the energy consumption efficiency by 1.1 for diesel passenger vehicles and diesel small buses, and value obtained by dividing the energy consumption efficiency by 0.78 for LP gas passenger vehicles) of the gasoline passenger vehicles, diesel passenger vehicles, LP gas passenger vehicles, and small buses shipped to the domestic market, and the energy consumption efficiency values of electric vehicles and the like (vehicles having a motor that runs on electric power charged from an external source (vehicles exclusively supplied for passenger use (limited to model designated vehicles (vehicles that received model designations based on Item 1, Article 75 of the Road Trucking Vehicle Law), and excluding two-wheel vehicles (including those with side cars) and full-track vehicles), with a riding capacity of 10 persons or less and with a riding capacity of 11 persons or more and a gross vehicle weight of no more than 3.5 tons)) shipped to the domestic market with the number of vehicles shipped is not below the corporate standard energy consumption efficiency, the vehicle may be regarded as a vehicle in which the corporate average fuel efficiency value is not below the corporate standard energy efficiency.

Target Fiscal Year

- Gasoline passenger vehicles : (1) FY 2010 and each subsequent fiscal year (until FY 2014)
(2) FY 2015 and each subsequent fiscal year (until FY 2019)
(3) FY 2020 and each subsequent fiscal year
- Diesel passenger vehicles : (1) FY 2005 and each subsequent fiscal year (until FY 2014)
(2) FY 2015 and each subsequent fiscal year (until FY 2019)
(3) FY 2020 and each subsequent fiscal year
- LP gas passenger vehicles : (1) FY 2010 and each subsequent fiscal year (until FY 2019)
(3) FY 2020 and each subsequent fiscal year
- Small buses : (2) FY 2015 and each subsequent fiscal year (until FY 2019)
(3) FY 2020 and each subsequent fiscal year
- Route buses and general buses : (2) FY 2015 and each subsequent fiscal year

Energy Saving Effects

- (1) Gasoline passenger vehicles with FY 2010 as the target fiscal year: Efficiency was improved by about 48.8% over the FY 1995 level by the target year (FY 2010).
- (2) Diesel passenger vehicles with FY 2005 as the target fiscal year: Efficiency is expected to be improved by about 14.9% over the FY 1995 level.
- (3) Gasoline passenger vehicles and diesel passenger vehicles with FY 2015 as the target fiscal year: Efficiency is expected to be improved by about 23.5% over the FY 2004 level by the target year (FY 2015).
- (4) LP gas passenger vehicles with FY 2010 as the target fiscal year: Efficiency was improved by about 12.5% over the FY 2001 level by the target year (FY 2010).
- (5) Small buses with FY 2015 as the target fiscal year: Efficiency is expected to be improved by about 12.1% over the FY 2004 level by the target year (FY 2015).
- (6) Route buses with FY 2015 as the target fiscal year: Efficiency is expected to be improved by about 11.1% over the FY 2002 level by the target year (FY 2015).
- (7) Ordinary buses with FY 2015 as the target fiscal year: Efficiency is expected to be improved by about 12.8% over the FY 2002 level by the target year (FY 2015).
- (8) Gasoline passenger vehicles: Efficiency is expected to be improved by about 19.6% over the FY 2015 level by the target year (FY 2020).

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7.1 Passenger Vehicles(6)

Display Items

Vehicle name and type, type of fuel used (regular gasoline, premium gasoline, diesel oil, or LP gas), engine type and total emissions, vehicle weight, vehicle riding capacity, vehicle gross weight (limited to route buses and ordinary buses), engine maximum output and maximum torque, energy consumption efficiency, fuel system type, gearbox type and number of gears, each gearbox gear ratio (limited to route buses and ordinary buses), other major fuel efficiency improvement measures, such as cylinder injection, and manufacturer's name.

Place of Display

Locations that can be readily seen in catalogs and on exhibits

Target Requirements of Recommendations and Orders

Manufacturers or importers whose manufacturing volume or importing volume (limited to shipment to the domestic market) is 2,000 units (350 units in the case of a riding capacity of 11 persons or more) or more.



7.2 Air Conditioners(1)

Target Scope

Cooling-cum-heating air conditioners and dedicated cooling air conditioners, except the following:
 1) ones with cooling capacity of over 50.4 kW, 2) ones of water-cooling type, 3) ones so structured as to have no motor for compression, 4) ones so structured as to use any energy other than electricity as a heat source for space heating, 5) ones so structured as to have temperature control function or dust control function intended for air conditioning to maintain machine or appliance performance or beverage or food hygiene, 6) ones so structured as to solely cool outside air and send it into indoors, 7) spot air conditioners, 8) ones designed for vehicles and other means of transport, 9) ones so structured as to have a duct at suction/exhaust outlet of a heat-exchanger of the outdoor unit, 10) ones so structured as to have a thermal storage tank dedicated for cooling (including cooling-cum-heating), 11) ones designed for highly gas-tight/heat-insulating housing, and so structured as to send air to multiple rooms through a branched duct and operate interlocked with ventilation devices, 12) ones so structured as to have compressors, air blowers and other main components powered by electricity generated from a dedicated solar cell module, 13) ones having floor heating function or hot-water supply function, 14) among separate type air conditioners so structured as to connect two or more indoor units to one outdoor unit, ones using heat absorbed by space cooling for space heating, 15) ones dedicated to space cooling use; 16) ones structured for installation in the window frame, 17) ones structured for installation penetrating a wall, or 18) among air conditioners with cooling capacity of over 28 kW, separate type ones so structured as to connect two or more indoor units to one outdoor unit (applicable only to ones each of whose indoor units is separately controlled).

Energy Consumption Efficiency

- Air conditioners whose target year is freezing year 2004 or any subsequent year or freezing year 2007 or any subsequent year: It is the average cooling/heating energy consumption efficiency (cooling/heating average COP), which is a numerical value obtained by dividing the sum the cooling energy consumption efficiency and the heating energy consumption efficiency (obtained in the same manner as the cooling energy consumption efficiency).
- Air conditioners whose target fiscal year is FY 2010 or any subsequent fiscal year, FY 2012 or any subsequent fiscal year, or FY 2015 or any subsequent fiscal year: It is the annual performance factor (APF), which is a numerical value calculated by the method under JIS C9612 (2005) for products for residential use or by that under JIS B8616 (2006) for service use.

Category, Target Values

In the target fiscal year and each subsequent fiscal year, energy consumption efficiency in each category shall be at or greater than the target standard value.

| Residential air conditioners | |
|---|---|
| Unit form | Target fiscal year and target standard value |
| Air conditioners of wall-hung type among the non-duct types (excluding the multi-types that control operation of the indoor units individually) | <ul style="list-style-type: none"> ● For air conditioners with a cooling capacity of 4.0 kW or less: 2004 freezing year (the period from October 1, 2003 through September 30, 2004) and each subsequent freezing year*¹: Observe the target standard value in (1). ● For air conditioners with a cooling capacity of over 4.0 kW: 2007 freezing year (the period from October 1, 2006 through September 30, 2007) and each subsequent freezing year*¹: Observe the target standard value in (1). ● For FY 2010 and each subsequent year: Observe the applicable one of the target standard values of categories E through G in (2) and (3). |
| Others | <ul style="list-style-type: none"> ● For freezing year 2007 and any subsequent freezing year*²: Observe the standard value of (1). ● FY 2012 and any subsequent fiscal year: Observe the applicable one of the target standard values of categories H through M in (3). |
| Commercial air conditioners | |
| Form and function | Target fiscal year and target standard value |
| All | <ul style="list-style-type: none"> ● For freezing year 2007 and any subsequent freezing year*³: Observe the target standard value of (1). ● FY 2015 and any subsequent fiscal year: Observe the target standard value of (4). |

*1 It shall be the period from October 1, 2009 through March 31, 2010.
 *2 It shall be the period until FY 2011.
 *3 It shall be the period until FY 2014.

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7.2 Air Conditioners(2)

(1) Air conditioners whose target fiscal year is 2007 freezing year and each freezing year after that (for some categories, 2004 freezing year and each freezing year after that)
[for residential use,for commercial use]

| Category | | | Standard energy consumption efficiency (COP) |
|---|-------------------------|---------------|--|
| Unit form | Cooling capacity | Category name | |
| Non-ducted wall-mounted type (except multi-type operating indoor units individually) | Up to 2.5kW | b | 5.27 |
| | Over 2.5kW up to 3.2kW | c | 4.90 |
| | Over 3.2kW up to 4.0kW | d | 3.65 |
| | Over 4.0kW up to 7.1kW | e | 3.17 |
| | Over 7.1kW up to 28.0kW | f | 3.10 |
| Other non-ducted type (except multi-type operating indoor units individually) | Up to 2.5kW | g | 3.96 |
| | Over 2.5kW up to 3.2kW | h | 3.96 |
| | Over 3.2kW up to 4.0kW | i | 3.20 |
| | Over 4.0kW up to 7.1kW | j | 3.12 |
| Ducted type (except multi-type operating indoor units individually) | Over 7.1kW up to 28.0kW | k | 3.06 |
| | Up to 4.0kW | l | 3.02 |
| | Over 4.0kW up to 7.1kW | m | 3.02 |
| Multi-type operating indoor units individually | Over 7.1kW up to 28.0kW | n | 3.02 |
| | Up to 4.0kW | o | 4.12 |
| | Over 4.0kW up to 7.1kW | p | 3.23 |
| | Over 7.1kW up to 28.0kW | q | 3.07 |

Remarks : 1. “Ducted type” indicates systems connected to ducts at the outlet.

2. “Multi-type” indicates a type that has two or more indoor units connected to an outdoor unit.

(2) Air conditioners whose target fiscal year is FY 2010 and each subsequent fiscal year
[for non-ducted, wall-hung type units for residential use with a cooling capacity of 4.0 kW or less (excluding individually controlled indoor multi-type units)]

| Category | | | Standard energy consumption efficiency (APF) |
|------------------------|--------------------------------|---------------|--|
| Cooling capacity | Dimension type of indoor units | Category name | |
| Up to 3.2kW | Dimension-defined type | A | 5.8 |
| | Free-dimension type | B | 6.6 |
| Over 3.2kW up to 4.0kW | Dimension-defined type | C | 4.9 |
| | Free-dimension type | D | 6.0 |

Remarks : “Dimension Type of Indoor Unit” means that air conditioner models whose indoor unit has horizontal width of 800 mm or less and height of 295 mm or less shall be defined as a dimension-defined type. Air conditioners other than those of dimension-defined type shall be free-dimension type.

(3) Air conditioners whose target year is FY 2012 or any subsequent fiscal year after that (for classes E through G, FY 2010 or any subsequent fiscal year after that) [for residential use other than (2)]

| Category | | | Standard energy consumption efficiency (APF) |
|---|---------------------------|---------------|--|
| Unit form | Cooling capacity | Category name | |
| Non-ducted wall-hung type (except multi-type controlling operation of indoor units individually) | Over 4.0kW up to 5.0kW | E | 5.5 |
| | Over 5.0kW up to 6.3kW | F | 5.0 |
| | Over 6.3kW up to 28.0kW | G | 4.5 |
| Other non-ducted type (except multi-type controlling operation of indoor units individually) | Up to 3.2 kW | H | 5.2 |
| | Over 3.2 kW up to 4.0 kW | I | 4.8 |
| | Over 4.0 kW up to 28.0 kW | J | 4.3 |
| Multi-type controlling operation of indoor units individually | Up to 4.0 kW | K | 5.4 |
| | Over 4.0 kW up to 7.1 kW | L | 5.4 |
| | Over 7.1 kW up to 28.0 kW | M | 5.4 |

Remarks : “Multi-type” refers to a type that has two or more indoor units connected to one outdoor unit.



7.2 Air Conditioners(3)

(4) Air conditioners whose target year is FY 2015 or any subsequent fiscal year after that [for commercial use]

| Form & function | Category | | | Standard energy consumption efficiency or calculation formula thereof |
|--|--|---|---------------|---|
| | Indoor unit type | Cooling capacity | Category name | |
| Combination of plural types or any type other than following | 4-directional cassette type | Less than 3.6 kW | aa | E = 6.0 |
| | | Not less than 3.6 kW but less than 10.0 kW | ab | $E = 6.0 - 0.083 \times (A - 3.6)$ |
| | | Not less than 10.0 kW but less than 20.0 kW | ac | $E = 6.0 - 0.12 \times (A - 10)$ |
| | | Not less than 20.0 kW and up to 28.0 kW | ad | $E = 5.1 - 0.060 \times (A - 20)$ |
| | Other than 4-directional cassette type | Less than 3.6 kW | ae | E = 5.1 |
| | | Not less than 3.6 kW but less than 10.0 kW | af | $E = 5.1 - 0.083 \times (A - 3.6)$ |
| | | Not less than 10.0 kW but less than 20.0 kW | ag | $E = 5.1 - 0.10 \times (A - 10)$ |
| | | Not less than 20.0 kW and up to 28.0 kW | ah | $E = 4.3 - 0.050 \times (A - 20)$ |
| Multi-type controlling operation of indoor units individually | | Less than 10.0 kW | ai | E = 5.7 |
| | | Not less than 10.0 kW but less than 20.0 kW | aj | $E = 5.7 - 0.11 \times (A - 10)$ |
| | | Not less than 20.0 kW but less than 40.0 kW | ak | $E = 5.7 - 0.065 \times (A - 20)$ |
| | | Not less than 40.0 kW and up to 50.4 kW | al | $E = 4.8 - 0.040 \times (A - 40)$ |
| Ducted type whose indoor unit is set on floor or any like type | Non-ducted type | Less than 20.0 kW | am | E = 4.9 |
| | | Not less than 20.0 kW and up to 28.0 kW | an | E = 4.9 |
| | Ducted type | Less than 20.0 kW | ao | E = 4.7 |
| | | Not less than 20.0 kW and up to 28.0 kW | ap | E = 4.7 |

- Remarks : 1. "Ducted type" indicates systems connected to ducts at the outlet.
 2. "Multi-type" indicates a type that has two or more indoor units connected to an outdoor unit.
 3. E and A represent the following values, respectively.
 E: Standard energy consumption efficiency (unit: yearly energy consumption efficiency)
 A: Cooling capacity (unit: kilowatts)

Target Fiscal Year

- (1) Freezing fiscal year 2007 and each subsequent fiscal year (freezing fiscal year 2004 and each subsequent fiscal year for some) <residential/commercial air conditioners>
- (2) FY 2010 and each subsequent fiscal year <residential air conditions>
- (3) FY 2012 and each subsequent fiscal year (FY 2010 and each subsequent fiscal year for some) <residential air conditioners>
- (4) FY 2015 and each subsequent fiscal year <commercial air conditioners>

Energy Saving Effects

For residential use (to which target standard value (2) applies):Efficiency was improved by about 16.3% over the FY 2005 level by the target year(FY 2010)(initially about 22.4% improvement had been expected).
 For residential use (to which target standard value (3) applies):Efficiency was improved by about 15.6% over the FY 2006 level by the target year by those with a target fiscal year of FY 2010 (categories E through G)(initially 15.6% improvement had been expected), and by about 15.9% over the FY 2006 level by the target year by those with a target fiscal year of FY 2012 (categories H through M)(initially 15.6% improvement had been expected).
 For commercial use:Efficiency is expected to be improved by about 18.2% over FY 2006 level by the target year (FY 2015).

Display Items

<Residential air conditioners>
 Cooling capacity, category name (non-ducted, separate-type cooling/heating air conditioners only), cooling power consumption, heating capacity (heating units only), heating power consumption (heating units only), yearly energy consumption efficiency (non-ducted, separate-type cooling/heating air conditioners only), precautions for use, and manufacturer's name.
 * Indications on residential air conditioners are based on the stipulations of the Household Goods Quality Labeling Law (Law No. 104 enacted in 1962), and are not covered by the Energy Conservation Law.
 <Commercial air conditioners>
 Product name and type, category name, cooling capacity, cooling power consumption, heating capacity, heating power consumption, yearly energy consumption efficiency, and manufacturer's name.

Place of Display

<Residential air conditioners>
 Location that can be readily seen by the consumer. Precautions for use shall be indicated on the body of the product or in the instruction manual.
 <Commercial air conditioners>
 Locations that can be readily seen in catalogs and instruction manuals that include performance indications.

Target Requirements of Recommendations and Orders

Manufacturers or importers whose manufacturing volume or importing volume (limited to shipment to the domestic market) is 500 units or more.

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7.3 Lighting Equipment (1)

(Lighting Equipment Using Only Fluorescent Lamp(s) as Main Light Source)

Target Scope

Lighting equipment using only a fluorescent lamp or lamps as the main light source, except the following:
 1) ones of explosion-proof type, 2) ones of heat-resistant type, 3) ones of dust-proof type, 4) ones of anti-corrosion type, 5) ones designed for vehicles and other means of transport, 6) ones of wall-hung type, pendant type for service facilities or built-in type using fluorescent lamps of less than 40 watts, 7) ones designed for use in or on mining or manufacturing machinery, 8) ones designed for use in or on furniture, 9) ones whose a plug and fluorescent lamp controlgear are structurally integrated (ones using a compact fluorescent lamp or lamps with built-in controlgear), 10) ones whose globe for fluorescent lamp protection is transparent,
 or 11) Self-ballasted fluorescent lamp(s) including:
 a) ones so structured as to have a reflector (reflection type), b) ones having a function to control light flux (for dimming purpose), c) ones emitting light of any other color than that of daylight, natural white, white, or warm white (such as color lamps or black lights), d) ones designed for use in henhouse, or e) ones allowing separation of fluorescent lamp (separable controlgear unit type).

Energy Consumption Efficiency

○ Lighting equipment for fluorescent lamp(s)
 Energy consumption efficiency for such equipment shall be a numerical value obtained by dividing by consumed wattage (W), measured by a method prescribed under JIS C8105-3, the total luminous flux (a value expressed in $\text{lm}(\text{lumen})^{*1}$) obtained by multiplying by “Ballast lumen factor” and the temperature correction factor the total luminous flux of the fluorescent lamp alone, measured by a method prescribed under JIS C7617-2 if it is a double capped fluorescent lamp or by that prescribed under JIS C7618-2 if it is a compact fluorescent lamp or a circular fluorescent lamp.

○ Self-ballasted fluorescent lamp(s)
 Energy consumption efficiency for such lamps shall be a numerical value obtained by dividing by consumed wattage (W), measured by a method prescribed under JIS C7620-2, the total luminous flux (a value expressed in $\text{lm}(\text{lumen})^{*1}$) measured by a method prescribed under JIS C7620-2.

*1 The $\text{lm}(\text{lumen})$ is the SI unit of luminous flux. Where a point light source emits 1 candela (cd) of luminous intensity uniformly and omnidirectionally, the amount of luminous flux in a cone having a solid angle of 1 sr (steradian) is defined as 1 lumen.

Category, Target Values

In the target fiscal year and each subsequent fiscal year, energy consumption in each category shall be at or greater than the target standard value.

(1) Ones whose target year is FY 2005 and each subsequent fiscal year (until FY 2011)

| Category | Standard energy consumption efficiency |
|---|--|
| 1 Equipment using 110type rapid-start fluorescent lamp | 79.0 |
| 2 Equipment using dedicated 40type fluorescent lamp for high frequency lighting | 86.5 |
| 3 Equipment using 40type rapid-start fluorescent lamp | 71.0 |
| 4 Equipment using 40type starter fluorescent lamp | 60.5 |
| 5 Electronic ballast type using 20type starter fluorescent lamp | 77.0 |
| 6 Magnetic ballast type using 20type starter fluorescent lamp | 49.0 |
| 7 Equipment using circular fluorescent lamps with size category of over 72 | 81.0 |
| 8 Equipment using circular fluorescent lamps with size category of over 62 up to 72 | 82.0 |
| 9 Electronic ballast type among equipment using circular fluorescent lamps with size category of 62 or less | 75.5 |
| 10 Magnetic ballast type among equipment using circular fluorescent lamps with size category of 62 or less | 59.0 |
| 11 Desk top using compact fluorescent lamps | 62.5 |
| 12 Desk top using fluorescent lamps | 61.5 |

Remarks : 1. “Equipment using 110type rapid-start fluorescent lamps” includes 96type compact fluorescent lamps and 105type compact fluorescent lamps for high-frequency lighting.
 2. “Equipment using dedicated 40type fluorescent lamps for high frequency lighting” includes equipment using dedicated 65type fluorescent lamps for high frequency lighting.
 3. “Equipment using 40type rapid-start fluorescent lamps” includes 36type and 55type compact fluorescent lamps, as well as equipment using dedicated 32type, 42type, and 45type compact fluorescent lamps for highfrequency lighting.
 4. “Fluorescent lamp size category” refers to the rated wattage value for lamp and the size category which specified under 2.3.1 of JIS C7618-2. For circular dedicated fluorescent lamps for high frequency lighting, the value should be the rated wattage value. However, for highoutput fluorescent lamps, the value should be the lamp power value generated when the high-output fluorescent lamp are lit.

7.3 Lighting Equipment (2)

(Lighting Equipment Using Only Fluorescent Lamp(s) as Main Light Source)

(2) Ones whose target year is FY 2012 or any subsequent fiscal year

○ Self-ballasted fluorescent lamp(s)

| Fluorescent lamp size category | Light source color of fluorescent lamp | Category | | Standard energy consumption efficiency |
|--------------------------------|--|-----------------------------|---------------|--|
| | | Shape of fluorescent lamp | Category name | |
| 10 | Warm White | | a | 60.6 |
| | Natural white | | b | 58.1 |
| | Daylight | | c | 55.0 |
| 15 | Warm White | | d | 67.5 |
| | Natural white | | e | 65.0 |
| | Daylight | | f | 60.8 |
| 25 | Warm White | Fluorescent lamp is exposed | g | 72.4 |
| | | Category name is not g | h | 69.1 |
| | Natural white | Fluorescent lamp is exposed | i | 69.5 |
| | | Category name is not i | j | 66.4 |
| | Daylight | Fluorescent lamp is exposed | k | 65.2 |
| | | Category name is not k | l | 62.3 |

Remarks : "Fluorescent lamp size category" refers to the category of size prescribed under JIS C7620-2.

○ Lighting equipment for fluorescent lamp(s)

| Intended use | Shape of fluorescent lamp | Category | | Standard energy consumption efficiency |
|---------------------|--|--|---------------|--|
| | | Fluorescent lamp size category | Category name | |
| For facilities use | Double capped type or twin tube compact type | Using fluorescent lamp of 86 or above in size category | I | 100.8 |
| | | Category name is not I | II | 100.5 |
| | Compact type except twin tube shape | | III | 61.6 |
| For residential use | Circular type or double capped type | Using fluorescent lamps of 70 or above in total of size category counts (except ones using double capped fluorescent lamps of 20 in size category) | IV | 91.6 |
| | | Category name is not IV | V | 78.1 |
| For desk lamp | Double capped type or compact type | | VI | 70.8 |

Remarks : "Fluorescent lamp size category" refers to, among double capped fluorescent lamps, the rated lamp power prescribed under 2.3.1 of JIS C7617-2 for dedicated high frequency lighting type fluorescent lamps or to the size category prescribed under 2.3.1 of JIS C7617-2 for any other double capped fluorescent lamps, to the rated lamp power prescribed under 2.3.1 of JIS C7618-2 for compact type fluorescent lamps or circular dedicated high frequency lighting type fluorescent lamps, or to the rated lamp power or size category prescribed under 2.3.1 of JIS C7618-2 for any other circular fluorescent lamps than circular dedicated high frequency lighting type fluorescent lamps. For any fluorescent lamps to which none of these prescriptions applies, the size category refers to the rated lamp power. However, for ones of high output lighting type among circular dedicated high frequency lighting type fluorescent lamps, the size category refers to the value of lamp power at the time of high output lighting.

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7.3 Lighting Equipment (3)

(Lighting Equipment Using Only Fluorescent Lamp(s) as Main Light Source)

| | |
|--|--|
| Target Fiscal Year | (1) FY 2005 and each subsequent fiscal year (until FY 2011) (2) FY 2012 and each subsequent fiscal year |
| Energy Saving Effects | (1) Lighting equipment for fluorescent lamp(s) with FY 2005 as the target fiscal year: Total luminous flux per 1W/(lm/W) was improved by about 35.7% over the FY 1997 level (initially about 16.6% improvement had been expected). (2) Lighting equipment for fluorescent lamp(s) with FY 2012 as the target fiscal year: Efficacy was improved by about 14.5% over the FY 2006 level (initially about 7.7% improvement had been expected). Self-ballasted fluorescent lamp(s): Efficacy was improved by about 6.6% over the FY 2006 level (initially 3.2% improvement had been expected). |
| Display Items | Product name and type, fluorescent lamp type (except for Self-ballasted fluorescent lamps(s)), total number of luminous flux, power consumption, energy consumption efficiency, and manufacturer's name * Indications on Desk lamp are based on the stipulations of the Household Goods Quality Labeling Law (Law No. 104 enacted in 1962), and are not covered by the Energy Conservation Law. |
| Place of Display | Packaging containers or catalogues |
| Target Requirements of Recommendations and Orders | Manufacturers or importers whose manufacturing volume or importing volume (limited to shipment to the domestic market) is 30,000 units or more. |



7.4 TV Sets(1)

Target Scope

Cathode ray tube TV sets, liquid crystal display TV sets, or plasma TV sets that run on alternating current, except the following:

- 1) ones for industrial use, 2) multiscan-compatible cathode ray tube (CRT) type ones of over 33.8 kHz in horizontal frequency, 3) once for travelers from overseas, 4) rear projection type ones, 5) 10 type and 10 V type or smaller ones in TV receiver size, 6) wireless type ones, 7) computer display units having a TV broadcast receiving function, or 8) ones with a liquid crystal panel that do not use a direct-view type backlight.

Energy Consumption Efficiency

- CRT TV sets, liquid crystal TV sets whose target year is FY 2008 or any subsequent fiscal year (not beyond FY 2011) and plasma TV sets. The annual power consumption (kWh/year) is based on a supposed daily active period of 4.5 hours, the rest being idle time.
- Liquid crystal TV sets and plasma TV sets whose target year is FY 2012 or any subsequent fiscal year. The annual power consumption (kWh/year) is based on a supposed daily active period of 4.5 hours, the rest being idle time. (However, if EPG is to be acquired during the idle time, the period of acquisition shall be taken into account in calculating the kilowatts-h.)

Category, Target Values

In the target fiscal year and each subsequent fiscal year, energy consumption efficiency in each category shall be at or lower than the target standard value.

- (1) Ones whose target year is FY 2003 or any subsequent fiscal year
Cathode ray tube TV (20 categories)

| Category | | | | | | | Standard energy consumption efficiency |
|----------------------------|--------------|----------------------|--|---|---------------|-----------|--|
| Scanning method | Aspect ratio | Deflection angle | Shape of tube | Function | Category name | | |
| Normal scanning method | 4:3 | Up to 100 degrees | Other than flat type | Other than those having built-in VCR (or DVD) | AA | E=2.5S+32 | |
| | | | Flat type | Those having built-in VCR (or DVD) | AB | E=2.5S+60 | |
| | | | | Other than those having built-in VCR (or DVD) | AC | E=2.5S+42 | |
| | | Over 100 degrees | Other than flat type | Those having built-in VCR (or DVD) | AD | E=2.5S+70 | |
| | | | | Other than those having built-in VCR (or DVD) | AE | E=5.1S-4 | |
| | | | Flat type | Those having built-in VCR (or DVD) | AF | E=5.1S+24 | |
| | 16:9 | Other than flat type | Other than those having built-in VCR (or DVD), and having no additional function | AG | E=5.1S+21 | | |
| | | | Other than those having built-in VCR (or DVD), and having 1 additional function | AH | E=5.1S+49 | | |
| | | | Other than those having built-in VCR (or DVD), and having 2 additional functions | AI | E=5.1S-11 | | |
| | | | Other than those having built-in VCR (or DVD), and having 3 additional functions | AJ | E=5.1S+17 | | |
| | | | Other than those having built-in VCR (or DVD), and having no additional function | AK | E=5.1S+6 | | |
| | | Flat type | Other than those having built-in VCR (or DVD), and having 1 additional function | AL | E=5.1S+13 | | |
| | | | Other than those having built-in VCR (or DVD), and having 2 additional functions | AM | E=5.1S+59 | | |
| | | | Other than those having built-in VCR (or DVD), and having 3 additional functions | AN | E=5.1S-1 | | |
| | | | Other than those having built-in VCR (or DVD), and having 1 additional function | AO | E=5.1S+27 | | |
| | | | Other than those having built-in VCR (or DVD), and having 2 additional functions | AP | E=5.1S+16 | | |
| Double speed scanning type | | | Other than those having built-in VCR (or DVD), and having 3 additional functions | AQ | E=5.1S+23 | | |
| | | | Other than those having built-in VCR (or DVD), and having 3 additional functions | AR | E=5.1S+69 | | |
| | | | Those having analog high-vision TV | AS | E=5.5S+72 | | |
| | | | Other than those having analog high-vision TV | AT | E=5.5S+41 | | |

- Remarks : 1. "Television receiver size" refers to the centimeter- denominated quotient, rounded at the decimal point, of division of the diagonal dimension of the driven display area of the display screen by 2.54.
2. "Flat type" means a TV set whose percentage of the maximum gap value between the center and the peripheral portion on a cathode-ray-tube surface to the diagonal dimensions of a cathode-ray-tube is 0.5% or less (provided that the measurement position of the peripheral portion and the diagonal dimension shall be within the effective area plus 5 mm).
3. "Analog high-vision TV" means a cathode-ray-tube TV with 1,125 scanning lines and a screen of 16:9 aspect ratio that also has a MUSE decoder and satellite broadcasting receiving function.
4. "Additional function" refers to dual-tuner & split-screen function, text broadcast reception function, and MUSE-NTSC converter.*
- * Built-in converters that convert MUSE high-vision broadcast signals to current NTSC signals.

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7.4 TV Sets(2)

Remarks : 5. E and S represent the following numeric values.

E : standard energy consumption efficiency (unit: kWh per year)

S : Television receiver size

(2) Ones whose target year is FY 2008 or any subsequent fiscal year (until FY 2011)

○ Liquid crystal TV (38 categories)

| Aspect ratio | Number of pixels | Television receiver size | Category | | | Standard energy consumption efficiency or calculation formula thereof | |
|-------------------------------------|---|--------------------------|--|--|-----------------------------|---|-----------|
| | | | Function | Additional function | Category name | | |
| 4:3 | Vertical pixel count of less than 650 | Below 15 V size | Other than those having DVD play function only | Other than the following | BA | E=44 | |
| | | | | With 1 additional function | BB | E=58 | |
| | | | With 2 additional functions | BC | E=72 | | |
| | | 15 V size or larger | Other than those having DVD play function only | Other than the following | BD | E=58 | |
| | | | | With HDD | BE | E=72 | |
| | | | Those having DVD play function only | Other than the following | BF | E=5.9S-45 | |
| | Vertical pixel count of 650 or more | Below 15 V size | Other than those having DVD play function only | With 1 additional function | BG | E=5.9S-31 | |
| | | | | With 2 additional functions | BH | E=5.9S-16 | |
| | | | Those having DVD play function only | Other than the following | BI | E=5.9S-31 | |
| | | | | With HDD | BJ | E=5.9S-16 | |
| | | 15 V size or larger | Other than those having DVD play function only | Other than the following | BK | E=49 | |
| | | | | With 1 additional function | BL | E=64 | |
| | | | Those having DVD play function only | With 2 additional functions | BM | E=78 | |
| | | | | Other than the following | BN | E=59 | |
| | | | 15 V size or larger | Other than those having DVD play function only | With HDD | BO | E=73 |
| | | | | | Other than the following | BP | E=5.4S-32 |
| Those having DVD play function only | With 1 additional function | BQ | | E=5.4S-17 | | | |
| | With 2 additional functions | BR | | E=5.4S-3 | | | |
| 16:9 | Vertical pixel count of less than 650 | | | Other than the following | BU | E=8.1S-86 | |
| | | | | With 1 additional function | BV | E=8.1S-72 | |
| | | | | With 2 additional functions | BW | E=8.1S-58 | |
| | | | | Other than the following | BX | E=7.5S-45 | |
| | | | | With 1 additional function | BY | E=7.5S-31 | |
| | | | | With 2 additional functions | BZ | E=7.5S-17 | |
| | Vertical pixel count of 650 or more, and less than 1080 | | | | With 3 additional functions | BAA | E=7.5S-3 |
| | | | | | Other than the following | BBB | E=8.1S-66 |
| | | | | | With 1 additional function | BCC | E=8.1S-52 |
| | | | | | With 2 additional functions | BDD | E=8.1S-38 |
| | | | | | Other than the following | BEE | E=7.5S-40 |
| | | | | | With 1 additional function | BFF | E=7.5S-25 |
| | Vertical pixel count of 1080 or more | | | | With 2 additional functions | BGG | E=7.5S-11 |
| | | | | | With 3 additional functions | BHH | E=7.5S+3 |
| | | | | | Other than the following | BII | E=8.9S-55 |
| | | | | | With 1 additional function | BJJ | E=8.9S-41 |
| | | | | With 2 additional functions | BKK | E=8.9S-26 | |
| | | | | With 3 additional functions | BLL | E=8.9S-12 | |

Remarks : 1. "Television receiver size" refers to the centimeter- denominated quotient, rounded at the decimal point, of division of the diagonal dimension of the driven display area of the display screen by 2.54.

2. "Additional function(s)" refers to DVD (solely what has a video recording function), HDD and double digital tuner.

3. E and S represent the following values, respectively.

E: Standard energy consumption efficiency (unit: kWh/year)

S: Television receiver size



7.4 TV Sets(3)

- Plasma TV sets (8 categories)

| Category | | | Calculation formula of standard energy consumption efficiency |
|--------------------------|--------------------------|---------------|---|
| Television receiver size | Additional function(s) | Category name | |
| Smaller than 43 V size | Other than the following | CA | $E=7.9S+30$ |
| | With 1 function | CB | $E=7.9S+44$ |
| | With 2 functions | CC | $E=7.9S+58$ |
| | With 3 functions | CD | $E=7.9S+73$ |
| 43 V size or larger | Other than the following | CE | $E=15.9S-314$ |
| | With 1 function | CF | $E=15.9S-300$ |
| | With 2 functions | CG | $E=15.9S-286$ |
| | With 3 functions | CH | $E=15.9S-272$ |

Remarks : 1. "Television receiver size" refers to the centimeter- denominated quotient, rounded at the decimal point, of division of the diagonal dimension of the driven display area of the display screen by 2.54.

2. "Additional function(s)" refers to DVD (solely what has a video recording function), HDD and double digital tuner.

3. E and S represent the following values, respectively.

E: Standard energy consumption efficiency (unit: kWh/year)

S: Television receiver size

- (3) Ones whose target year is FY 2012 or any subsequent fiscal year

- Liquid crystal TV sets and plasma TV sets (64 categories)

| Category | | | | | Standard energy consumption efficiency or calculation formula thereof | |
|-----------------------------|--|--|--------------------------|--------------------------|---|-------------|
| No. of pixels | Television receiver size | Dynamic image display | Additional function(s) | Category name | | |
| FHD | Below 19 V size | Liquid crystal normal | Other than the following | DA | $E=59$ | |
| | | | With 1 function | DA1 | $E=71$ | |
| | | | With 2 functions | DA2 | $E=83$ | |
| | | | With 3 functions | DA3 | $E=95$ | |
| | | Liquid crystal double speed | Other than the following | DB | $E=74$ | |
| | | | With 1 function | DB1 | $E=86$ | |
| | | | With 2 functions | DB2 | $E=98$ | |
| | | | With 3 functions | DB3 | $E=110$ | |
| | | Not below 19 V size, but below 32 V size | Liquid crystal normal | Other than the following | DC | $E=2.0S+21$ |
| | | | | With 1 function | DC1 | $E=2.0S+33$ |
| | | | | With 2 functions | DC2 | $E=2.0S+45$ |
| | | | | With 3 functions | DC3 | $E=2.0S+57$ |
| | Liquid crystal double speed | | Other than the following | DD | $E=2.0S+36$ | |
| | | | With 1 function | DD1 | $E=2.0S+48$ | |
| | | | With 2 functions | DD2 | $E=2.0S+60$ | |
| | | | With 3 functions | DD3 | $E=2.0S+72$ | |
| | Liquid crystal quadruple speed or plasma | | Other than the following | DE | $E=2.0S+58$ | |
| | | | With 1 function | DE1 | $E=2.0S+70$ | |
| | | | With 2 functions | DE2 | $E=2.0S+82$ | |
| | | | With 3 functions | DE3 | $E=2.0S+94$ | |
| | 32 V size or larger | Liquid crystal normal | Other than the following | DF | $E=6.6S-126$ | |
| | | | With 1 function | DF1 | $E=6.6S-114$ | |
| | | | With 2 functions | DF2 | $E=6.6S-102$ | |
| | | | With 3 functions | DF3 | $E=6.6S-90$ | |
| Liquid crystal double speed | | Other than the following | DG | $E=6.6S-111$ | | |
| | | With 1 function | DG1 | $E=6.6S-99$ | | |
| | | With 2 functions | DG2 | $E=6.6S-87$ | | |
| | | With 3 functions | DG3 | $E=6.6S-75$ | | |

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7.4 TV Sets(4)

| No. of pixels | Television receiver size | Category | | | Standard energy consumption efficiency or calculation formula thereof | |
|--|--|--|--------------------------|--------------------------|---|-----------|
| | | Dynamic image display | Additional function(s) | Category name | | |
| Others | | Liquid crystal quadruple speed or plasma | Other than the following | DH | E=6.6S-89 | |
| | | | With 1 function | DH1 | E=6.6S-77 | |
| | | | With 2 functions | DH2 | E=6.6S-65 | |
| | | | With 3 functions | DH3 | E=6.6S-53 | |
| | Below 19 V size | Liquid crystal normal | Other than the following | DI | E=44 | |
| | | | With 1 function | DI1 | E=56 | |
| | | | With 2 functions | DI2 | E=68 | |
| | | | With 3 functions | DI3 | E=80 | |
| | | Liquid crystal double speed | Other than the following | DJ | E=59 | |
| | | | With 1 function | DJ1 | E=71 | |
| | | | With 2 functions | DJ2 | E=83 | |
| | | | With 3 functions | DJ3 | E=95 | |
| | | Not below 19 V size, but below 32 V size | Liquid crystal normal | Other than the following | DK | E=2.0S+6 |
| | | | | With 1 function | DK1 | E=2.0S+18 |
| | | | | With 2 functions | DK2 | E=2.0S+30 |
| | | | | With 3 functions | DK3 | E=2.0S+42 |
| | Liquid crystal double speed | | Other than the following | DL | E=2.0S+21 | |
| | | | With 1 function | DL1 | E=2.0S+33 | |
| | | | With 2 functions | DL2 | E=2.0S+45 | |
| | | | With 3 functions | DL3 | E=2.0S+57 | |
| | Liquid crystal quadruple speed or plasma | | Other than the following | DM | E=2.0S+43 | |
| | | | With 1 function | DM1 | E=2.0S+55 | |
| | | | With 2 functions | DM2 | E=2.0S+67 | |
| | | | With 3 functions | DM3 | E=2.0S+79 | |
| | 32 V size or larger | Liquid crystal normal | Other than the following | DN | E=6.6S-141 | |
| | | | With 1 function | DN1 | E=6.6S-129 | |
| | | | With 2 functions | DN2 | E=6.6S-117 | |
| | | | With 3 functions | DN3 | E=6.6S-105 | |
| Liquid crystal double speed | | Other than the following | DO | E=6.6S-126 | | |
| | | With 1 function | DO1 | E=6.6S-114 | | |
| | | With 2 functions | DO2 | E=6.6S-102 | | |
| | | With 3 functions | DO3 | E=6.6S-90 | | |
| Liquid crystal quadruple speed or plasma | | Other than the following | DP | E=6.6S-104 | | |
| | | With 1 function | DP1 | E=6.6S-92 | | |
| | | With 2 functions | DP2 | E=6.6S-80 | | |
| | | With 3 functions | DP3 | E=6.6S-68 | | |

- Remarks : 1. "FHD" refers to ones having 1080 or more pixels in the vertical direction and 1920 or more in the horizontal direction.
2. "Television receiver size" refers to the centimeter- denominated quotient, rounded at the decimal point, of division of the diagonal dimension of the driven display area of the display screen by 2.54.
3. "Dynamic image display" refers to or another of the following.
- Liquid crystal normal: What uses a liquid crystal panel to display 60 or more but less than 120 still frames per second.
- Liquid crystal double speed: What uses a liquid crystal panel to display 120 or more but less than 240 still frames per second.
- Liquid crystal quadruple speed: What uses a liquid crystal panel to display 240 or more still frames per second.
- Plasma: What performs displaying by using a plasma display panel.

7.4 TV Sets(5)

4. “Additional function(s)” refers to DVD (solely those having a video recording function), HDD, double digital tuner and blue ray disk recorder.
5. E and S represent the following values, respectively.
 E: Standard energy consumption efficiency (unit: kWh/year)
 S: Television receiver size

Target Fiscal Year

Cathode ray tube TV sets: (1) FY 2003 or any subsequent fiscal year
 Liquid crystal TV sets and plasma TV sets:(2) FY 2008 or any subsequent fiscal year (until than FY 2011)
 (3) FY 2012 or any subsequent fiscal year

Energy Saving Effects

- (1) Cathode ray tube TV sets with FY 2003 as the target fiscal year: Annual power consumption was improved by about 25.7% over the FY 1997 level (initially about 16.4% improvement had been expected).
- (2) Liquid crystal TV sets and plasma TV sets with FY 2008 as the target fiscal year: Efficiency was improved by about 29.6% over the FY 2004 level by the target year (FY 2008).
- (3) TV sets with FY 2012 as the target fiscal year: Efficiency was improved by about 60.6% over the FY 2008 level by the target year (FY 2012).

Display Items and Place of Display

Display items : Category name, television receiver size, annual energy consumption, precautions for use, and manufacturer’s name (Display of category name and television receiver size is limited to liquid crystal display TV sets and plasma TV sets.)

Place of display: A location that can be readily seen by the consumer. Precautions for use shall be indicated on the body of the product or in the instruction manual.

* Indications on TV sets are based on the stipulations of the Household Goods Quality Labeling Law (Law No. 104 enacted in 1962), and are not covered by the Energy Conservation Law.

Target Requirements of Recommendations and Orders

Manufacturers or importers whose manufacturing volume or importing volume (limited to shipment to the domestic market) is 10,000 units or more.

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7.5 Copying Machines(1)

Target Scope

Dry process, indirect electrostatic copying machines mainly used at offices, except the following:
 1) ones capable of color copying, 2) ones capable of copying onto A2 or larger paper, 3) ones capable of copying 86 sheets or more per minute, 4) ones which are not structured for a rated input voltage of 100 V, 5) ones which are not structured for copying 13 or more sheets per minute, or 6) ones other than digital types.

Energy Consumption Efficiency

Energy consumption efficiency E (Wh) is a numeric value calculated with the following formula:
 $E = (A+7 \times B) / 8$.
 Here, "A" indicates energy consumption (Wh), which is measured for one hour after the machine is turned on. "B" indicates energy consumption (Wh), which is measured for another one hour after the measurement of "A".

Category, Target Values

In the target fiscal year and each subsequent fiscal year, energy consumption efficiency in each category shall be at or lower than the target standard value.

(1) Copying machines whose target fiscal year is FY 2006 and each subsequent fiscal year (until FY 2016)

| Category Copying speed | Standard energy consumption efficiency | | | |
|----------------------------|--|-------------|-------------|--------------|
| | A4 machines | B4 machines | A3 machines | A3Y machines |
| Up to 10 sheets per minute | 11 | 17 | 19 | 27 |
| 11~20 sheets per minute | 17 | 20 | 55 | 77 |
| 21~30 sheets per minute | 69 | 85 | 99 | 139 |
| 31~40 sheets per minute | 88 | 108 | 125 | 175 |
| 41~50 sheets per minute | 123 | 151 | 176 | 246 |
| 51~60 sheets per minute | 144 | 176 | 205 | 287 |
| 61~70 sheets per minute | 180 | 221 | 257 | 383 |
| 71~80 sheets per minute | 200 | 246 | 286 | 433 |
| 81~85 sheets per minute | 258 | 317 | 369 | 483 |

- Remarks : 1. "A4 machines," "B4 machines," "A3 machines," and "A3Y machines" refer to copying machines whose maximum input width is the A4 paper width, B4 paper width, A3 paper width, and A3 paper length, respectively.
 2. "Copying speed" refers to the maximum number of plain A4 paper sheets copied per minute consecutively.

(2) Copying machines whose target fiscal year is FY 2017 and each subsequent fiscal year

| Category Copying speed | Standard energy consumption efficiency | | | |
|---------------------------|--|--------------------------------|--------------------------------|---------------------------------|
| | A4 machines (category name) | B4 machines (category name) | A3 machines (category name) | A3Y machines (category name) |
| 13~20 sheets per minute | 17 (1) | 20 (9) | 55 (17) | 77 (25) |
| 21~30 sheets per minute | 69 (2) | 85 (10) | 99 (18) | 139 (26) |
| 31~40 sheets per minute | 88 (3) | 108 (11) | 125 (19) | 175 (27) |
| 41~50 sheets per minute | 123 (4) | 151 (12) | 176 (20) | 246 (28) |
| 51~60 sheets per minute | 144 (5) | 176 (13) | 205 (21) | 287 (29) |
| 61~70 sheets per minute | 180 (6) | 221 (14) | 257 (22) | 383 (30) |
| 71~80 sheets per minute | 200 (7) | 246 (15) | 286 (23) | 433 (31) |
| 81~85 sheets per minute | 258 (8) | 317 (16) | 369 (24) | 483 (32) |

- Remarks : 1. "A4 machines," "B4 machines," "A3 machines," and "A3Y machines" refer to copying machines whose maximum input width is the A4 paper width, B4 paper width, A3 paper width, and A3 paper length, respectively.
 2. "Copying speed" refers to the maximum number of plain A4 paper sheets copied per minute consecutively.



7.5 Copying Machines(2)

- Target Fiscal Year** (1) FY 2006 and each subsequent fiscal year (until FY 2016)
(2) FY 2017 and each subsequent fiscal year
- Energy Saving Effects** Copying machines with FY 2006 as the target fiscal year: Power consumption was improved by about 72.5% over the FY 1997 level (initially about 31.0% improvement had been expected).
- Display Items** Product name and type, category name, copying speed, energy consumption efficiency, and manufacturer's name.
- Place of Display** Locations that can be readily seen in catalogs and instruction manuals that include performance indications.
- Target Requirements of Recommendations and Orders** Manufacturers or importers whose manufacturing volume or importing volume (limited to shipment to the domestic market) is 500 units or more.

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7.6 Computers(1)

Target Scope

Digital central processing units (CPUs) and personal computers (PCs) stipulated by the Japan Standard Commodity Classification, except the following:

- 1) ones whose processing units, main memory units, input/output controllers and power supplies are structurally multiplexed,
- 2) ones whose theoretical operation* is 200,000 MTOPS or more,
- 3) ones capable of computation using a processing unit composed of over 256 processors,
- 4) ones with 512 or more input/output signal transmission channels (limited to those whose maximum data transfer rate is 100 megabit or more per second),
- 5) ones whose theoretical operation is less than 100 MTOPS,
- 6) ones mainly used with built-in power supply instead of being connected to power line and having built-in magnetic disk units.

* As for computers listed in the left column of Appendix Table 4, Enforcement Regulation of Law Concerning the Rational Use of Energy, their theoretical operation is presented in the right column of the same table.

Energy Consumption Efficiency

Value obtained by driving average power consumption (W) in idle state and in low power mode, by theoretical operation (GTOPS*).

* Category and target standard values 1) of MTOPS

Category, Target Values

In the target fiscal year and each subsequent fiscal year, energy consumption efficiency in each category shall be at or lower than the target standard value.

(1) Ones whose target year is FY 2007 or any subsequent fiscal year(until FY 2010)

| Category | | | | Standard energy consumption efficiency |
|--|---|-----------------------------------|---------------|--|
| Type of Computer | Number of input/output signal transmission channels | Main memory capacity | Category name | |
| Earlier server-type computers | 64 or more | | a | 3.1 |
| | 8 or more, and less than 64 | | b | 0.079 |
| | 4 or more, and less than 8 | 16 GB or more | c | 0.071 |
| | | Less than 16 GB | d | 0.068 |
| | Less than 4 | 16 GB or more | e | 0.053 |
| | | 4 GB or more, and less than 16 GB | f | 0.039 |
| | | 2 GB or more, and less than 4 GB | g | 0.024 |
| | | Less than 2 GB | h | 0.016 |
| Earlier client-type computers not of battery-driven type | 2 or more, and less than 4 | Less than 6 GB | i | 0.027 |
| | Less than 2 | 2 GB or more, and less than 6 GB | j | 0.0048 |
| | | Less than 2 GB | k | 0.0038 |
| Earlier client-type computers of battery-driven type | | 1 GB or more, and less than 6 GB | l | 0.0026 |
| | | Less than 1 GB | m | 0.0022 |

- Remarks :
1. “Earlier server-type computers” refers to ones other than earlier client-type computers.
 2. “Number of input/output signal transmission lines” refers to numbers of signal transmission lines of 100 Mbps or more in maximum data transfer velocity, among those that split directly from signal transmission lines (including other signal transmission lines having a comparable transfer ability) connecting processing units and main memory units or among those that split directly from signal transmission line splitters connected to the pertinent signal line; however, those that are connected to outer elements only through graphic display ports or keyboard ports are excluded.
 3. “Battery-driven type” refers to ones capable of running on built-in batteries without relying on power supplied from outside power line.
 4. “Earlier client-type computers” refers to ones with a graphic display port and a keyboard port (including ones with a built-in display unit instead of a graphic display port, and ones with a built-in keyboard instead of a keyboard port), and having main memory capacity of below 6 GB and less than 4 input/output signal transmission lines.



7.6 Computers(2)

(2) Ones whose target year is FY 2011 or any subsequent fiscal year

○ Server-type computer

| CPU type | Category | | | Standard energy consumption efficiency |
|----------------|-----------------------------|----------------------------|---------------|--|
| | No. of I/O slots | No. of CPU sockets | Category name | |
| Dedicated CISC | Less than 32 | | A | 1,950 |
| | 32 or more | | B | 2,620 |
| RISC | Less than 8 | | C | 13 |
| | 8 or more, but less than 40 | | D | 31 |
| | 40 or more | | E | 140 |
| IA64 | Less than 10 | | F | 6.2 |
| | 10 or more | | G | 22 |
| IA32 | 0 | | H | 1.3 |
| | 1 or more, but less than 7 | Less than 2 | I | 1.2 |
| | | 2 or more, but less than 4 | J | 1.9 |
| | | 4 or more | K | 6.7 |
| | 7 or more | | L | 7.4 |

Remarks : 1. "Dedicated CISC" refers to, among CPUs designed to be able to execute multiple commands differing in the number of bits, ones each of which is designed for exclusive use per computer.

2. "RISC" refers to CPUs other than ones designed to be able to execute multiple commands differing in the number of bits.

3. "IA64" refers to CPUs, other than dedicated CISC, designed to be able to execute multiple commands differing in the number of bits and having a 64-bit architecture.

4. "IA32" refers to CPUs, other than dedicated CISC, designed to be able to execute multiple commands differing in the number of bits and having a 32-bit architecture.

○ Client-type computers

| Client-type computer classified by power source type and no. of memory channels | Category | | | | Standard energy consumption efficiency | |
|---|------------------------|----------------|--------------------|--|--|------|
| | Main memory capacity | Standalone GPU | Screen size | Category name | | |
| Battery- driven with 2 or more memory channels | 16 GB or more | | | M | 2.25 | |
| | Over 4 GB, below 16 GB | | | N | 0.34 | |
| | 4 GB or less | | | 17" size or less | P | 0.31 |
| | | | Mounted | Less than 17" size | Q | 0.21 |
| | | | Not mounted | 12" size or larger, but less than 17" size | R | 0.15 |
| | | | Less than 12" size | S | 0.21 | |
| Non-battery- driven with 2 or more memory channels having AC adaptor for power supply | | | | T | 0.29 | |
| Non-battery- driven with 2 or more memory channels, not of category name T | 16 GB or more | | | U | 2.25 | |
| | Over 4 GB, below 16 GB | Mounted | | V | 0.51 | |
| | | Not mounted | | W | 0.64 | |
| 4 GB or less | | | X | 0.53 | | |
| Having less than 2 memory channels | | | | Y | 0.51 | |

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7.6 Computers(3)

- Remarks :
1. “Number of memory channels” refers to the number of logical channels of the bus interface to the main memory branched out of the memory controller.
 2. “Battery-driven type” refers to ones capable of running on built-in batteries without relying on power supplied from outside power line.
 3. “Standalone GPU” refers to, among processors for image data processing, ones having a dedicated local memory.
 4. “Screen size” refers to the centimeter-denominated quotient, rounded at one digit below the decimal point, of division of the diagonal outer dimension of the display area of the display screen by 2.54.

Target Fiscal Year

- (1) FY 2007 and each subsequent fiscal year (until FY 2010)
- (2) FY 2011 and each subsequent fiscal year

Energy Saving Effects

- (1) Efficiency was improved by about 80.8% over the FY 2001 level by the target year (FY 2007) (initially about 69.0% improvement had been expected).
- (2) Efficiency was improved by about 85% over the FY 2007 level by the target year (FY 2011) (initially about 78% improvement had been expected).

Display Items

Product name or type, category name, energy consumption efficiency, manufacturer’s name, and description of energy consumption efficiency

Place of Display

Locations that can be readily seen in catalogs with performance indications and documents provided by the manufacturer for selecting equipment.

Target Requirements of Recommendations and Orders

Manufacturers or importers whose manufacturing volume or importing volume (limited to shipment to the domestic market) is 200 units or more.



7.7 Magnetic Disk Units(1)

Target Scope

Magnetic disk units stipulated by the Japan Standard Commodity Classification, except the following:
1) ones whose memory capacity is less than 1 GB, 2) ones whose disks size is less than 40 mm in diameter, or 3) ones whose maximum data transfer rate is over 270 GB/second.

Energy Consumption Efficiency

Energy consumption efficiency is a numeric value obtained by dividing power consumption (W) by memory capacity (GB).

Category, Target Values

In the target fiscal year and each subsequent fiscal year, energy consumption efficiency in each category shall be at or lower than the target standard value.

(1) Ones whose target year is FY 2007 or any subsequent fiscal year (until FY 2010)

| Type of magnetic disk unit | Category | | Calculation equation for standard energy consumption efficiency |
|----------------------------|--|---------------|---|
| | Shape and performance of magnetic disk unit | Category name | |
| Single unit disk | Disk size exceeding 75 mm; 1 disk | a | $E = \exp(2.98 \times \ln(N) - 28.6)$ |
| | Disk size exceeding 75 mm; 2 or 3 disks | b | $E = \exp(2.98 \times \ln(N) - 29.3)$ |
| | Disk size exceeding 75 mm; 4 or more disks | c | $E = \exp(2.98 \times \ln(N) - 29.5)$ |
| | Disk size exceeding 50 mm, and no more than 75 mm; 1 disk | d | $E = \exp(2.98 \times \ln(N) - 28.6)$ |
| | Disk size exceeding 50 mm, and no more than 75 mm; 2 or 3 disks | e | $E = \exp(2.98 \times \ln(N) - 29.4)$ |
| | Disk size exceeding 50 mm, and no more than 75 mm; 4 or more disks | f | $E = \exp(2.98 \times \ln(N) - 29.8)$ |
| | Disk size exceeding 40 mm, and no more than 50 mm; 1 disk | g | $E = \exp(2.98 \times \ln(N) - 27.2)$ |
| | Disk size exceeding 40 mm, and no more than 50 mm; 2 or more disks | h | $E = \exp(2.98 \times \ln(N) - 28.8)$ |
| Subsystem | | i | $E = \exp(2.00 \times \ln(N) - 19.7)$ |

Remarks : 1. E and N represent the following values, respectively.

E : Standard energy consumption efficiency

N : Number of revolutions (unit: per minute)

2. In represents a logarithm having e as the base.

(2) Ones whose target year is FY 2011 or any subsequent fiscal year

| Type of magnetic disk unit | Category | | | | Calculation equation for standard energy consumption efficiency | |
|----------------------------|--|--|-----|---------------|---|---------------------------------------|
| | Shape and performance of magnetic disk unit | Revolution speed | Use | Category name | | |
| Single unit disk | Disk size exceeding 75 mm; 1 disk | | | A | $E = \exp(2.98 \times \ln(N) - 30.8)$ | |
| | Disk size exceeding 75 mm; 2 or 3 disks | | | B | $E = \exp(2.98 \times \ln(N) - 31.2)$ | |
| | Disk size exceeding 75 mm; 4 disks or more | | | C | $E = \exp(2.11 \times \ln(N) - 23.5)$ | |
| | Disk size exceeding 50 mm but not over 75 mm; 1 disk | 5,000 rpm or less | | | D | $E = \exp(2.98 \times \ln(N) - 29.8)$ |
| | | Over 5,000 rpm but less than 6,000 rpm | | | E | $E = \exp(2.98 \times \ln(N) - 31.2)$ |
| | | Over 6,000 rpm | | | F | $E = \exp(4.30 \times \ln(N) - 43.5)$ |

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7.7 Magnetic Disk Units(2)

| Category | | | | | Calculation equation for standard energy consumption efficiency |
|----------------------------|---|--|-----------------------------------|---------------|---|
| Type of magnetic disk unit | Shape and performance of magnetic disk unit | Revolution speed | Use | Category name | |
| Single unit disk | Disk size exceeding 50 mm but not over 75 mm; 2 or 3 disks | 5,000 rpm or less | | G | $E = \exp(2.98 \times \ln(N) - 31.5)$ |
| | | Over 5,000 rpm but less than 6,000 rpm | | H | $E = \exp(2.98 \times \ln(N) - 32.2)$ |
| | | Over 6,000 rpm | | I | $E = \exp(4.58 \times \ln(N) - 46.8)$ |
| | Disk size exceeding 50 mm but not over 75 mm; 4 disks or more | | | J | $E = \exp(2.98 \times \ln(N) - 31.9)$ |
| | Disk size exceeding 40 mm but not over 50 mm; 1 disk | | | K | $E = \exp(2.98 \times \ln(N) - 30.2)$ |
| | Disk size exceeding 40 mm but not over 50 mm; 2 disks or more | | | L | $E = \exp(2.98 \times \ln(N) - 30.9)$ |
| Subsystem | | | Ones for main frame server | M | $E = \exp(1.85 \times \ln(N) - 18.8)$ |
| | | | Ones whose category name is not M | N | $E = \exp(1.56 \times \ln(N) - 17.7)$ |

- Remarks : 1. "Main frame server" refers to server type computers (computers designed to provide service and the like via a network) mounted with a dedicated CISC (which is, among CPUs designed to be able to execute multiple commands differing in the number of bits, ones each of which is designed for exclusive use per computer).
2. E and N represent the following values, respectively.
 E : Standard energy consumption efficiency
 N : Number of revolutions (unit: per minute)
3. In represents a logarithm having e as the base.

Target Fiscal Year (1) FY 2007 and each subsequent fiscal year (until FY 2010)
 (2) FY 2011 and each subsequent fiscal year

Energy Saving Effects (1) Efficiency was improved by about 85.7% over the FY 2001 level by the target year (FY 2007) (initially about 71.4% improvement had been expected).
 (2) Efficiency was improved by about 75.9% over the FY 2007 level by the target year (FY 2011) (initially about 75.8% improvement had been expected).

Display Items Product name and type, category name, energy consumption efficiency, manufacturer's name, and description of energy consumption efficiency

Place of Display Locations that can be readily seen in catalogs with performance indications and documents provided by the manufacturer for selecting equipment.

Target Requirements of Recommendations and Orders Manufacturers or importers whose manufacturing volume or importing volume (limited to shipment to the domestic market) is 5,000 units or more.



7.8 Freight Vehicles(1)

Target Scope

- Gasoline and diesel freight vehicles with a gross vehicle weight of 3.5 tons or less that have received model designation (type-approved vehicles) based on Item 1, Article 75 of the Road Trucking Vehicle Law (Law No. 185 enacted in 1951) (Hereinafter referred to as Gasoline freight vehicle and Diesel freight vehicle, respectively.)
- Diesel freight vehicles with a gross vehicle weight exceeding 3.5 tons that have received model designation as well as vehicles fitted with a device for preventing the emanation of carbon monoxide, and so on, designated based on Item 1 of 2 of Article 75 of the Road Trucking Vehicle Law (vehicles designated to be fitted with a device for preventing the emanation of carbon monoxide and so on) Two-wheel vehicles (including motorcycles with sidecar) and crawlers are excluded.

Energy Consumption Efficiency

Since FY 2015
A numeric value (fuel efficiency in km/l) shall be the one stipulated by the statute related to the calculation of the energy consumption efficiency of a vehicle (No. 3 statute of the Ministry of International Trade and Industry and the Transport Ministry enacted in 1979).

It is noted that the following fuel efficiency values shall be used according to the type of vehicles.

- Gasoline freight vehicles and diesel freight vehicles: JC08 mode fuel efficiency values
- Trucks and tractors: Heavy vehicle mode fuel efficiency values

Until FY 2014

A numeric value (fuel efficiency in km/l) shall be the one stipulated by the statute related to the calculation of the energy consumption efficiency of a vehicle (No. 3 statute of the Ministry of International Trade and Industry and the Transport Ministry enacted in 1979).

It is noted that the following fuel efficiency values shall be used according to the type of vehicles.

- Gasoline freight vehicles, diesel freight vehicles: 10•15 mode fuel efficiency values*.
- Trucks and tractors: Heavy vehicle mode fuel efficiency values.

* Fuel efficiency in JC08 mode shall also be displayed for vehicles that comply with the safety standards for road trucking vehicles in both JC08H and JC08C modes, which are specified in the “Notice of the safety standard details for road trucking vehicles (Notice No. 619 of the Ministry of Land, Infrastructure and Transport, 2002)”.

Category, Target Values

In the target fiscal year and each subsequent fiscal year, energy consumption efficiency in each category shall be at or greater than the target standard value.

| Vehicle type | Fuel type | Target fiscal year and Target standard value |
|--|--|---|
| Freight vehicles (Vehicles with a gross vehicle weight of 3.5 tons or less) | Gasoline (Gasoline freight vehicle) | <ul style="list-style-type: none"> ●FY 2010 and each subsequent fiscal year(until FY 2014):Target standards (1) shall be complied with. * Applicable only to those with a gross vehicle weight of 2.5t or less. ●FY 2015 and each subsequent fiscal year:Target standards (3) shall be complied with. |
| | Diesel oil (Diesel freight vehicle) | <ul style="list-style-type: none"> ●FY 2005 and each subsequent fiscal year (until FY 2014):Target standards (2) shall be complied with. * Applicable only to those with a gross vehicle weight of 2.5t or less. ●FY 2015 and each subsequent fiscal year:Target standards (3) shall be complied with. |
| Trucks (Excluding tractors, vehicles with a gross vehicle weight over 3.5 tons) | Diesel oil | <ul style="list-style-type: none"> ●FY 2015 and each subsequent fiscal year:Target standards (3) shall be complied with. |
| Tractors (Traction engines with a gross vehicle weight over 3.5 tons) | Diesel oil | <ul style="list-style-type: none"> ●FY 2015 and each subsequent fiscal year:Target standards (3) shall be complied with. |

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7.8 Freight Vehicles(2)

(1) Vehicles whose target fiscal year is FY 2010 and each subsequent fiscal year (until FY 2014)
(Gasoline freight vehicles (with a gross vehicle weight of 2.5 tons or less))

| Vehicle type | Category | | | Standard energy consumption efficiency (10-15 mode fuel efficiency values) |
|--|-------------------|--------------------------------------|-------------------|---|
| | Transmission type | Vehicle weight | Vehicle structure | |
| 1. Mini cars stipulated under the Road Trucking Vehicle Law (1951 ordinance of the Transport Ministry No. 74), Article 2, that are used to transport cargo. | Manual | Less than 703 kg | Structure A | 20.2 |
| | | | Structure B | 17.0 |
| | | 703 or more and less than 828 kg | Structure A | 18.0 |
| | | | Structure B | 16.7 |
| | Other than manual | 828 kg or more | Structure A | 15.5 |
| | | | Structure B | 18.9 |
| Structure A | | | 16.2 | |
| 2. Standard vehicles and small vehicles (restricted to vehicles weighing less than 1.7 tons in total) stipulated under the Road Trucking Vehicle Law, Article 2, that are used to transport cargo. | Manual | Less than 1,016 kg | Structure A | 17.8 |
| | | | Structure B | 15.7 |
| | Other than manual | 1,016 kg or more | Structure A | 14.9 |
| | | | Structure B | 13.8 |
| 3. Standard vehicles and small vehicles (limited to those with a gross vehicle weight over 1.7 tons and not over 2.5 tons) stipulated under the enforcement regulations of the Road Trucking Vehicle Law, Article 2, and used to transport cargo | Manual | Less than 1,266 kg | Structure A | 14.5 |
| | | | Structure B | 12.3 |
| | | 1,266 or more and less than 1,516 kg | Structure A | 10.7 |
| | | | Structure B | 9.3 |
| | Other than manual | Less than 1,266 kg | Structure A | 12.5 |
| | | | Structure B | 11.2 |
| | | 1,266 kg or more | Structure A | 10.3 |

- Remarks :
1. "Gross vehicle weight" is the weight as stipulated by the Road Trucking Vehicle Safety Standard, article 40, No. 3. This applies from here on.
 2. "Vehicle weight" is the weight of vehicles when not loaded as stipulated by the Road Trucking Vehicle Safety Standard (No. 67 Ministry Ordinance of the Ministry of Transport, 1951), article 1, No. 6. This applies from here on.
 3. "Structure A" is a structure that fulfills all the following requirements. This applies from here on.
 - a. A value obtained by dividing maximum authorized freight mass by gross vehicle weight is less than 0.3.
 - b. Passenger devices and loading devices are installed in a same compartment. Inside and outside of the device are separated by fixed roofs, windows, etc.
 - c. Engines are installed in front of the driver's seat and power transmitted only to the front axle. Or, engines are installed in front of the driver's seat and power transmitted to more than one axle, the front and rear axles. (limited to those that transmit power to the rear axles by using transfers or propeller shafts in the front axles when transmitting power to the rear axles).
 4. "Structure B" refers to structures other than structure A. This applies from here on.

(2) Vehicles whose target fiscal year is FY 2005 and each subsequent fiscal year (until FY 2014)
(Diesel freight vehicles (with a gross vehicle weight of 2.5 tons or less))

| Vehicle type | Category | | | Standard energy consumption efficiency (10-15 mode fuel efficiency values) |
|---|-------------------|--------------------------------------|-------------------|---|
| | Transmission type | Vehicle weight | Vehicle structure | |
| 1. Standard vehicles and small vehicles (limited to vehicles with a gross vehicle weight of 1.7 tons or less) stipulated under the enforcement regulations of the Road Trucking Vehicle Law, Article 2, and used to transport cargo | Manual | | | 17.7 |
| | Other than manual | | | 15.1 |
| 2. Standard vehicles and small vehicles (limited to vehicles with a gross vehicle weight over 1.7 tons and not over 2.5 tons) stipulated under the enforcement regulations of the Road Trucking Vehicle Law, Article 2, and used to transport cargo | Manual | Less than 1,266 kg | Structure A | 17.4 |
| | | | Structure B | 14.6 |
| | | 1,266 or more and less than 1,516 kg | Structure A | 14.1 |
| | | | Structure B | 12.5 |



7.8 Freight Vehicles(3)

| Category | | | | Standard energy consumption efficiency (10-15 mode fuel efficiency values) |
|--------------|-------------------|--------------------------------------|-------------------|---|
| Vehicle type | Transmission type | Vehicle weight | Vehicle structure | |
| | Other than manual | Less than 1,266 kg | Structure A | 14.5 |
| | | | Structure B | 12.6 |
| | | 1,266 or more and less than 1,516 kg | | 12.3 |
| | | 1,516 or more and less than 1,766 kg | | 10.8 |
| | | 1,766 kg or more | | 9.9 |

(3) Vehicles whose target fiscal year is FY 2015 and each subsequent fiscal year
Gasoline freight vehicles and diesel freight vehicles (with a gross vehicle weight of 3.5 tons or less)

| Category | | | | | Standard energy consumption efficiency (JC08 mode fuel efficiency value) |
|--|--------------------------------------|--|--------------------------------------|--------------------------------------|---|
| Vehicle type | Fuel type | Vehicle structure | Transmission type | Vehicle weight | |
| 1. Mini vehicles specified in the enforcement regulations of the Road Trucking Vehicle Law Article 2 and used to transport cargo | Gasoline or diesel oil | Structure A | Manual | Less than 741 kg | 23.2 |
| | | | | 741 kg or more | 20.3 |
| | | | Other than manual | Less than 741 kg | 20.9 |
| | | | | 741 or more and less than 856 kg | 19.6 |
| | | | | 856 kg or more | 18.9 |
| | | | | Structure B | Manual |
| | | 741 or more and less than 856 kg | 18.0 | | |
| | | 856 or more and less than 971 kg | 17.2 | | |
| | | Other than manual | 971 kg or more | | 16.4 |
| | | | Less than 741 kg | | 16.4 |
| | | | 741 or more and less than 856 kg | | 16.0 |
| | | 2. Standard vehicles and small vehicles (limited to those with a gross vehicle weight of 1.7 tons or less) stipulated under the enforcement regulations of the Road Trucking Vehicle Law, Article 2, and used to transport cargo | Gasoline or diesel oil | Manual | Less than 1,081 kg |
| 1,081 kg or more | 17.1 | | | | |
| Other than manual | Less than 1,081 kg | | | | 17.4 |
| | 1,081 or more and less than 1,196 kg | | | | 15.8 |
| | Structure A | | | 1,196 kg or more | 14.7 |
| | | | | Manual | 14.2 |
| Other than manual | | | | Less than 1,311 kg | 13.3 |
| | | | | 1,311 kg or more | 12.7 |
| 3. Standard vehicles and small vehicles (limited to those with a gross vehicle weight over 1.7 tons and not over 3.5 tons) stipulated under the enforcement regulations of the Road Trucking Vehicle Law, Article 2, and used to transport cargo | Gasoline | Structure B1 | Manual | Less than 1,311 kg | 11.9 |
| | | | | 1,311 or more and less than 1,421 kg | 10.6 |
| | | | | 1,421 or more and less than 1,531 kg | 10.3 |
| | | | | 1,531 or more and less than 1,651 kg | 10.0 |
| | | | | 1,651 or more and less than 1,761 kg | 9.8 |
| | | | | 1,761 kg or more | 9.7 |
| | | Other than manual | Less than 1,311 kg | 10.9 | |
| | | | 1,311 or more and less than 1,421 kg | 9.8 | |
| | | | 1,421 or more and less than 1,531 kg | 9.6 | |
| | | | 1,531 or more and less than 1,651 kg | 9.4 | |
| | | | 1,651 or more and less than 1,761 kg | 9.1 | |
| | | | 1,761 or more and less than 1,871 kg | 8.8 | |
| 1,871 kg or more | 8.5 | | | | |

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7.8 Freight Vehicles(4)

| Category | | | | | Standard energy consumption efficiency (JC08 mode fuel efficiency value) | | | |
|--|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--|--------|--------------------------------------|------|
| Vehicle type | Fuel type | Vehicle structure | Transmission type | Vehicle weight | | | | |
| 3. Standard vehicles and small vehicles (limited to those with a gross vehicle weight over 1.7 tons and not over 3.5 tons) stipulated under the enforcement regulations of the Road Trucking Vehicle Law, Article 2, and used to transport cargo | Gasoline | Structure B2 | Manual | Less than 1,311 kg | 11.2 | | | |
| | | | | 1,311 or more and less than 1,421 kg | 10.2 | | | |
| | | | | 1,421 or more and less than 1,531 kg | 9.9 | | | |
| | | | | 1,531 or more and less than 1,651 kg | 9.7 | | | |
| | | | | 1,651 or more and less than 1,761 kg | 9.3 | | | |
| | | | | 1,761 kg or more | 8.9 | | | |
| | | | | Other than manual | Less than 1,311 kg | 10.5 | | |
| | | | 1,311 or more and less than 1,421 kg | | 9.7 | | | |
| | | | 1,421 or more and less than 1,531 kg | | 8.9 | | | |
| | | | 1,531 or more and less than 1,651 kg | | 8.6 | | | |
| | | | 1,651 kg or more | | 7.9 | | | |
| | | | Diesel oil | | Structure A or Structure B1 | Manual | Less than 1,421 kg | 14.5 |
| | | | | | | | 1,421 or more and less than 1,531 kg | 14.1 |
| | | | | 1,531 or more and less than 1,651 kg | | | 13.8 | |
| | 1,651 or more and less than 1,761 kg | 13.6 | | | | | | |
| | 1,761 or more and less than 1,871 kg | 13.3 | | | | | | |
| | 1,871 or more and less than 1,991 kg | 12.8 | | | | | | |
| | 1,991 or more and less than 2,101 kg | 12.3 | | | | | | |
| | 2,101 kg or more | 11.7 | | | | | | |
| | Other than manual | Less than 1,421 kg | | 13.1 | | | | |
| | | 1,421 or more and less than 1,531 kg | | 12.8 | | | | |
| | | 1,531 or more and less than 1,651 kg | | 11.5 | | | | |
| | | 1,651 or more and less than 1,761 kg | | 11.3 | | | | |
| | | 1,761 or more and less than 1,871 kg | | 11.0 | | | | |
| | | 1,871 or more and less than 1,991 kg | | 10.8 | | | | |
| | | 1,991 or more and less than 2,101 kg | 10.3 | | | | | |
| | 2,101 kg or more | 9.4 | | | | | | |
| | Diesel oil | Structure B2 | Manual | Less than 1,421 kg | 14.3 | | | |
| 1,421 or more and less than 1,531 kg | | | | 12.9 | | | | |
| 1,531 or more and less than 1,651 kg | | | | 12.6 | | | | |
| 1,651 or more and less than 1,761 kg | | | | 12.4 | | | | |
| 1,761 or more and less than 1,871 kg | | | | 12.0 | | | | |
| 1,871 or more and less than 1,991 kg | | | | 11.3 | | | | |
| 1,991 or more and less than 2,101 kg | | | | 11.2 | | | | |
| 2,101 kg or more | | | 11.1 | | | | | |
| Other than manual | | | Less than 1,421 kg | 12.5 | | | | |
| | | | 1,421 or more and less than 1,531 kg | 11.8 | | | | |
| | | | 1,531 or more and less than 1,651 kg | 10.9 | | | | |
| | | | 1,651 or more and less than 1,761 kg | 10.6 | | | | |
| | | | 1,761 or more and less than 1,871 kg | 9.7 | | | | |
| | | | 1,871 or more and less than 1,991 kg | 9.5 | | | | |
| | 1,991 or more and less than 2,101 kg | 9.0 | | | | | | |
| 2,101 kg or more | 8.8 | | | | | | | |

- Remarks : 1. "Structure B1" refers to Structure B that meets the following requirement.
 The seating equipment and cargo-loading equipment are installed inside the same vehicle compartment, which is separated from the vehicle exterior by bulkheads such as the fixed roof and window glass.
2. "Structure B2" refers to Structure B excluding Structure B1.



7.8 Freight Vehicles(5)

<Judgment criteria exceptions>

If a company engaged in manufacturing or importing gasoline freight vehicles or diesel freight vehicles manufactures or imports a gasoline freight vehicle or diesel freight vehicle in a category in which the average fuel efficiency value of the gasoline freight vehicle, etc., is below the standard energy consumption efficiency set forth in the right column in the table above (referred to as an underachieving category), and the underachieving amount of the underachieving category (the value obtained by multiplying the difference between the inverse of the average fuel efficiency value of the gasoline freight vehicle, etc., of the relevant underachieving category and the inverse of the standard energy consumption efficiency by the number of vehicles shipped in the category (and by multiplying the value by 1.1 for the “Fueled with diesel oil” category)) can be offset by an overachieving amount (the total sum of the values obtained by multiplying the difference between the inverse of the average fuel efficiency value of the gasoline freight vehicle, etc., and the inverse of the standard energy consumption efficiency by the number of vehicles shipped in the category (and by multiplying the value by 1.1 for the “Fueled with diesel oil” category), in all categories in which the average fuel efficiency value of the gasoline freight vehicle, etc., is not below the standard energy consumption efficiency set forth in the right column of the table above), the underachieving category in which the entire underachieving amount has been offset may be regarded as a category in which the average fuel efficiency value is not below the standard energy consumption efficiency set forth in the right column in the table above.

Trucks (Trucks fueled with diesel oil with a gross vehicle weight over 3.5 tons, excluding tractors)

| Category | Standard energy consumption efficiency (Heavy vehicle mode fuel efficiency) |
|--|--|
| 1 Trucks with a gross vehicle weight over 3.5 tons and not more than 7.5 tons (limited to those with a maximum load capacity of 1.5 tons or less) | 10.83 |
| 2 Trucks with a gross vehicle weight over 3.5 tons and not more than 7.5 tons (limited to those with a maximum load capacity over 1.5 tons and not more than 2 tons) | 10.35 |
| 3 Trucks with a gross vehicle weight over 3.5 tons and not more than 7.5 tons (limited to those with a maximum load capacity over 2 tons and not more than 3 tons) | 9.51 |
| 4 Trucks with a gross vehicle weight over 3.5 tons and not more than 7.5 tons (limited to those with a maximum load capacity over 3 tons) | 8.12 |
| 5 Trucks with a gross vehicle weight over 7.5 tons and not more than 8 tons | 7.24 |
| 6 Trucks with a gross vehicle weight over 8 tons and not more than 10 tons | 6.52 |
| 7 Trucks with a gross vehicle weight over 10 tons and not more than 12 tons | 6.00 |
| 8 Trucks with a gross vehicle weight over 12 tons and not more than 14 tons | 5.69 |
| 9 Trucks with a gross vehicle weight over 14 tons and not more than 16 tons | 4.97 |
| 10 Trucks with a gross vehicle weight over 16 tons and not more than 20 tons | 4.15 |
| 11 Trucks with a gross vehicle weight over 20 tons | 4.04 |

Tractors (Traction engines fueled with diesel oil with a gross vehicle weight over 3.5 tons)

| Category | Standard energy consumption efficiency (Heavy vehicle mode fuel efficiency) |
|---|--|
| 1 Tractors with a gross vehicle weight of not more than 20 tons | 3.09 |
| 2 Tractors with a gross vehicle weight over 20 tons | 2.01 |

<Judgment criteria exceptions>

If a company engaged in manufacturing or importing trucks or tractors manufactures or imports a truck or tractor in a category in which the average fuel efficiency value of the truck or tractor is below the standard energy consumption efficiency set forth in the right column in the two tables above (referred to as an underachieving category), and the underachieving amount of the underachieving category (the value obtained by multiplying the difference between the inverse of the average fuel efficiency value of the truck or tractor of the relevant underachieving category and the inverse of the standard energy consumption efficiency by the number of vehicles shipped in the category) can be offset by an overachieving amount (the value obtained by dividing the total sum of the values obtained by multiplying the difference between the inverse of the average fuel efficiency value of the truck or tractor and the inverse of the standard energy consumption efficiency by the number of vehicles shipped in the category by 2, in all categories in which the average fuel efficiency value of the truck or tractor is not below the standard energy consumption efficiency set forth in the right column in the two tables above), the underachieving category in which the entire underachieving amount has been offset may be regarded as a category in which the average fuel efficiency value is not below the standard energy consumption efficiency set forth in the right column in the two tables above.

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7.8 Freight Vehicles(6)

Target Fiscal Year

- Gasoline freight vehicles
(Gross vehicle weight of 2.5 tons or less): (1)FY 2010 and each subsequent fiscal year (until FY 2014)
(Gross vehicle weight of 3.5 tons or less): (3)FY 2015 and each subsequent fiscal year
- Diesel freight vehicles
(Gross vehicle weight of 2.5 tons or less): (2)FY 2005 and each subsequent fiscal year (until FY 2014)
(Gross vehicle weight of 3.5 tons or less): (3)FY 2015 and each subsequent fiscal year
- Trucks and tractors: (3)FY 2015 and each subsequent fiscal year

Energy Saving Effects

- (1) Gasoline freight vehicles with FY 2010 as the target fiscal year: Efficiency was improved by about 13.2% over the FY 1995 level by the target year (FY 2010).
- (2) Diesel freight vehicles with FY 2005 as the target fiscal year: Efficiency was improved by about 21.7% over the FY 1995 level.
- (3) Gasoline freight vehicles and diesel freight vehicles with FY 2015 as the target fiscal year: Efficiency is expected to improve by about 12.6% over the FY 2004 level by the target year (FY 2015).
- (4) Trucks and tractors with FY 2015 as the target fiscal year: Efficiency is expected to improve by about 12.2% over the FY 2002 level by the target year (FY 2015).

Display Items

Vehicle name and type, engine type, total displacement, maximum output, and maximum torque, vehicle weight, transmission type and each gear ratio*, fuel system type, other major fuel efficiency improvement measures, such as cylinder injection and lean-burn engines, energy consumption efficiency (Annotation concerning the specifications of the vehicle model, complete vehicle curb weight, maximum load capacity, overall height, overall width, final reduction gear ratio and tire dynamic load radius used to calculate the energy consumption efficiency*), manufacturer's name, and notice for the use of premium gasoline for gasoline freight vehicles if necessary.

* Limited to trucks, and so on, and tractors.

Place of Display

Locations that can be readily seen in catalogs and on exhibits

Target Requirements of Recommendations and Orders

Manufacturers or importers whose manufacturing volume or importing volume (limited to shipment to the domestic market) is 2,000 units or more.



7.9 Video Cassette Recorders

Target Scope

Video cassette recorders that run on alternating current, except the following:

1) ones for industrial use, 2) ones that process electronic audio and video signals in digital form, 3) ones that process electronic signals with 1,125 or more scanning lines, 4) ones structurally equipped only with playback functions, or 5) ones having built-in digital broadcasting receivers.

Energy Consumption Efficiency

Energy consumption efficiency is a numeric value obtained as follows. First, the difference in standby power (W) between with (clock, etc.) display ON and OFF is multiplied by 0.2, and then the result is subtracted from standby power with (clock, etc.) display ON to obtain energy consumption efficiency.

Category, Target Values

In the target fiscal year and each subsequent fiscal year, energy consumption efficiency in each category shall be at or lower than the target standard value.

| Category | Standard energy consumption efficiency |
|---|--|
| 1 VCRs with signal processing power for 400 or more lines of horizontal resolution that have satellite broadcasting receiving functions | 2.5 |
| 2 VCRs with signal processing power for 400 or more lines of horizontal resolution that do not have satellite broadcasting receiving functions | 2.0 |
| 3 VCRs without signal processing power for 400 or more lines of horizontal resolution that have satellite broadcasting receiving functions | 2.2 |
| 4 VCRs without signal processing power for 400 or more lines of horizontal resolution that do not have satellite broadcasting receiving functions | 1.7 |

* As for double cassette VCRs, the target standard values are obtained from the above values multiplied by 1.6 for each category.

Target Fiscal Year

FY 2003 and each subsequent fiscal year

Energy Saving Effects

VCRs with FY 2003 as the target fiscal year: Power consumption in a standby state was improved by about 73.6% over the FY 1997 level (initially about 58.7% improvement had been expected).

Display Items

Product name and type, standby power consumption with (clock, etc.) display ON (limited to clock, etc. display functions which is ON/OFF selectable), standby power consumption with (clock, etc.) display OFF (limited to clock, etc. display functions which is ON/OFF selectable), energy consumption efficiency, and manufacturer's name

Place of Display

Catalogues and manuals

Target Requirements of Recommendations and Orders

Manufacturers or importers whose manufacturing volume or importing volume (limited to shipment to the domestic market) is 5,000 units or more.

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7.10 Electric Refrigerators(1)

Target Scope

- Electric refrigerators including ones combined with a freezer, except the followings:
- 1) ones using thermoelectric elements, 2) residential ones of the absorption type, or 3) other than residential ones as described below.
 - a. Cold air-forced convection types in which the lower limit of the rated storage temperature of the chiller is zero degrees or higher
 - b. Cold air-natural convection types
 - c. Types with a rated internal volume over 2,000 L
 - d. Types other than those covered by JIS B 8630 (2009)
 - e. Types that do not use 1,1,1,2,2-pentafluoroethane (HFC-125), 1,1,1-trifluoroethane (HFC-143a), or 1,1,1,2-tetrafluoroethane (HFC-134a) as the refrigerant
 - f. Types for use while disconnected from a power source, comprising casters
 - g. Horizontal types with an external height dimension (excluding the height corresponding to the washstand if integrated with a washstand) of 650 mm or less
 - h. Vertical types with an external height dimension of 2,050 mm or more
 - i. Types comprising a water cooled condenser
 - j. Types with a structure comprising a door on both sides of the housing
 - k. Drawer refrigerators
 - l. Types manufactured for an orderer in accordance with housing dimensions or compressor freezing ability or insulation performance specifications defined based on orderer instructions, with less than 50 units shipped yearly

Energy Consumption Efficiency

- (1) Electric refrigerators whose target fiscal year is FY 2004 and each subsequent fiscal year (until FY 2009)(for residential use).
Energy consumption efficiency is the annual energy consumption (kWh/year) measured as specified in JIS C9801 (1999).
- (2) Electric refrigerators whose target fiscal year is FY 2010 and each subsequent fiscal year(for residential use).
Energy consumption efficiency is the annual energy consumption (kWh/year) measured as specified in JIS C9801 (2006).
- (3) Electric refrigerators whose target fiscal year is FY 2016 and each subsequent fiscal year (for commercial use).
Energy consumption efficiency is the annual energy consumption (kWh/year) measured as specified in JIS B 8630 (2009).

Category, Target Values

In the target fiscal year and each subsequent fiscal year, energy consumption efficiency in each category shall be at or lower than the target standard value.

- (1) Electric refrigerators whose target fiscal year is FY 2004 and each subsequent fiscal year (until FY 2009)(for residential use)

| Category | | | | Calculation formula of standard energy consumption efficiency |
|---------------|----------------------|-------------------------------------|------------------------------|---|
| Category name | Refrigerator type | Cooling type | Use of specified technology | |
| a | Refrigerator | Cold air-natural convection type *1 | | $E_1=0.427V_1+178$ |
| b | | Cold air-forced convection type *2 | | $E_1=0.427V_1+178$ |
| c | Refrigerator-Freezer | Cold air-natural convection type | | $E_1=0.433V_1+320$ |
| d | | Cold air-forced convection type | With specified technology | $E_1=0.507V_1+147$ |
| e | | | Without specified technology | $E_1=0.433V_1+340$ |

*1 The walls of the freezing room function as an evaporator, and foods are refrigerated by direct freezing.
In the case of the two-door type, however, another evaporator is needed for the refrigeration room in addition to that for the freezing room.

*2 An evaporator is installed in the rear of the freezing room, and with use of a fan cold air is generated and distributed to the freezing room and refrigeration room.

Remarks : 1. E_1 and V_1 express the following numerical values:

E_1 : Standard energy consumption efficiency (unit: kWh per year)

V_1 : Adjusted internal volume (The figure is acquired first by multiplying rated internal volume of freezing compartment by either 2.15 for three-star type, 1.85 for two-star type, or 1.55 for one-star type, and then by adding the result to the rated internal storage volume excluding the freezing compartment. The obtained figure shall be rounded to the nearest whole number.) (unit: liter)

2. "Specified technology" refers to inverter or vacuum insulation technology.



7.10 Electric Refrigerators(2)

(2) FY 2010 and each fiscal after that(for residential use)

| Category name | Category | | | Number of doors in chiller section | Calculation formula of standard energy consumption efficiency |
|---------------|---------------------------------------|----------------------------------|-----------------------|------------------------------------|---|
| | Refrigerator type | Cooling type | Rated internal volume | | |
| A | Refrigerator and refrigerator-freezer | Cold air-natural convection type | Up to 300 liter | One | $E_2=0.844V_2+155$ |
| B | | | | | |
| C | | Cold air-forced circulation type | Over 300 liter | 2 or more | $E_2=0.774V_2+220$ |
| D | | | | | |
| | | | | | $E_2=0.296V_2+374$ |

Remarks : E_2 and V_2 express the following numerical values.

E_2 : Standard energy consumption efficiency (unit: kWh per year)

V_2 : Adjusted internal volume (The figure is acquired first by multiplying rated internal volume of freezing compartment by either 2.20 for three-star type, 1.87 for two-star type, or 1.54 for one-star type, and then by adding the result to the rated internal storage volume excluding the freezing compartment. The obtained figure shall be rounded to the nearest whole number.) (unit: liter)

(3) Electric refrigerators whose target fiscal year is FY 2016 and each subsequent fiscal year (for commercial use)

| Category name | Refrigerator type | Category | | Calculation formula of standard energy consumption efficiency |
|---------------|----------------------|-----------------|------------------------------------|---|
| | | Shape | Inverter controlled electric motor | |
| 1A | Refrigerator | Vertical type | Y | $E_3=0.345V_3+86nR+64dR+315$ |
| 1B | | | N | $E_3=0.766V_3+86nR+64dR+106$ |
| 1C | | Horizontal type | — | $E_3=1.12V_3+70nR+34dR+237$ |
| 2A | Refrigerator-freezer | Vertical type | — | $E_3=0.872V_3+86nR+64dR+186nF+295dF-113$ |
| 2B | | Horizontal type | — | $E_3=2.43V_3+70nR+34dR+157nF+157dF-183$ |

Remarks : 1. “Vertical type” refers to a front-opening type with a height (unit: mm) based on the external dimensions stipulated in JIS B 8630 (2009) (hereinafter “external height dimension”) over 1,000 mm. The same applies hereinafter.

2. “Horizontal type” refers to a front-opening type with an external height dimension of 1,000 mm or less. The same applies hereinafter.

3. E_3 is the numeric value of the standard energy consumption efficiency (unit: kWh per year).

4. V_3 is the adjusted internal volume (unit: l) calculated by the calculation formula given in the right column for each category name given in the left column in the following table, rounded off to the nearest integer. d is the depth (unit: mm) based on the external dimensions stipulated in JIS B 8630 (2009) (hereinafter “external depth dimension”).

V_R is the rated internal volume (unit: l) of a chiller.

V_F is the rated internal volume (unit: l) of a freezer.

| Category name | Adjusted internal volume |
|---------------|--------------------------------------|
| 1A | $V_3=800/d \times V_R$ |
| 1B | $V_3=800/d \times V_R$ |
| 1C | $V_3=600/d \times V_R$ |
| 2A | $V_3=800/d \times (V_R+2.48V_F)+887$ |
| 2B | $V_3=600/d \times (V_R+3.74V_F)+336$ |

However, if the result of the calculation formula above is 500 or less for category names “1A” and “1B,” 75 or less for category name “1C,” 1,930 or less for category name “2A,” and 750 or less for category name “2B,” then the numeric values 500, 75, 1,930, and 750 are used, respectively.

Remarks : 5. nR is the number of places behind side-by-side doors of a chiller where center pillars are not installed.

6. nF is the number of places behind side-by-side doors of a freezer where center pillars are not installed.

7. dR is used as $dR = 1$ for chillers with multiple doors (i.e. those which have a number of doors that exceed the standard number of doors stated in the right column of the following table in accordance with the type set forth in the left column; the same applies hereinafter) and as $dR = 0$ for others.

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7.10 Electric Refrigerators(3)

| Shape | Type | Standard number of doors |
|-----------------|---|--------------------------|
| | External width dimension | |
| Vertical type | 825 mm or less | 2 |
| | Over 825 mm and no more than 1,650 mm | 4 |
| | Over 1,650 mm | 6 |
| Horizontal type | 1,050 mm or less | 1 |
| | Over 1,050 mm and no more than 1,650 mm | 2 |
| | Over 1,650 mm | 3 |

* "External width dimension" refers to the width (unit: mm) based on the external dimension stipulated in JIS B 8630 (2009).

Remarks : 8. dF is used as dF = 1 for freezers with multiple doors, and as dF = 0 for others.

Target Fiscal Year

- (1) FY 2004 and each subsequent fiscal year (until FY 2009) (residential refrigerators)
- (2) FY 2010 and each subsequent fiscal year(residential refrigerators)
- (3) FY 2016 and each subsequent fiscal year (commercial refrigerators)

Energy Saving Effects

- (1) Electric refrigerators with FY 2004 as the target fiscal year: Annual power consumption was improved by about 55.2% over the FY 1998 level (initially about 30.5% improvement had been expected).
- (2) Electric refrigerators with FY 2010 as the target fiscal year: Efficiency was improved by about 43.0% over the FY 2005 level.
- (3) Commercial refrigerators: Efficiency is expected to be improved by about 26.5% over the FY 2007 level by the target year (FY 2016).
Commercial refrigerators with freezer: Efficiency is expected to be improved by about 22.4% over the FY 2007 level by the target year (FY 2016).

Display Items

<Residential refrigerators> Rated internal volume, annual energy consumption, external dimensions, precautions for use, and manufacturer's name.
* Indications on residential electric refrigerators are based on the stipulations of the Household Goods Quality Labeling Law (Law No. 104 enacted in 1962), and are not covered by the Energy Conservation Law.
<Commercial refrigerators> Product name and type, category name, rated internal volume, external depth dimension, number of places behind side-by-side doors of a refrigerator where center pillars are not installed, number of places behind side-by-side doors of a freezer where center pillars are not installed, multiple doors if applicable, energy consumption efficiency, and commercial refrigerator manufacturer's name.

Place of Display

<Residential refrigerators> Location that can be readily seen by the consumer. Precautions for use shall be indicated on the body of the product or in the instruction manual.
* Indications on residential electric refrigerators are based on the stipulations of the Household Goods Quality Labeling Law (Law No. 104 enacted in 1962), and are not covered by the Energy Conservation Law.
<Commercial refrigerators> Location that can be readily seen on the body of the product.

Target Requirements of Recommendations and Orders

Manufacturers or importers whose manufacturing volume or importing volume (limited to shipment to the domestic market) is 2,000 units (100 units for refrigerators other than residential) or more.



7.11 Electric Freezers(1)

Target Scope

Electric freezers, except the following:

- 1) ones using thermoelectric elements, 2) residential ones of the absorption type, or 3) other than residential ones as described below:
 - a. Types with a rated internal volume over 2,000 L
 - b. Types other than those covered by JIS B 8630 (2009)
 - c. Types that do not use 1,1,1,2,2-pentafluoroethane (HFC-125), 1,1,1-trifluoroethane (HFC-143a), or 1,1,1,2-tetrafluoroethane (HFC-134a) as the refrigerant
 - d. Types capable of maintaining a rated storage temperature of -30 degrees or less
 - e. Types for use while disconnected from a power source, comprising casters.
 - f. Horizontal types with an outside height dimension (excluding the height corresponding to the washstand if integrated with a washstand) of 650 mm or less
 - g. Vertical types with an external height dimension of 2,050 mm or more
 - h. Types comprising a water cooled condenser
 - i. Types with a structure comprising a door on both sides of the housing
 - j. Types for storing foods exclusively for inspection
 - k. Drawer freezers
 - l. Types manufactured for an orderer in accordance with housing dimensions or compressor freezing ability or insulation performance specifications defined based on orderer instructions, with less than 50 units shipped yearly

Energy Consumption Efficiency

- (1) Electric freezers whose target fiscal year is FY 2004 and each subsequent fiscal year (until FY 2009) (for residential use). Energy consumption efficiency is the annual energy consumption (kWh/year) measured as specified in JIS C 9801 (1999).
- (2) Electric freezers whose target fiscal year is FY 2010 and each subsequent fiscal year (for residential use). Energy consumption efficiency is the annual energy consumption (kWh/year) measured as specified in JIS C 9801 (2006).
- (3) Electric freezers whose target fiscal year is FY 2016 and each subsequent fiscal year (for commercial use). Energy consumption efficiency is the annual energy consumption (kWh/year) measured as specified in JIS B 8630 (2009).

Category, Target Values

In the target fiscal year and each subsequent fiscal year, energy consumption efficiency in each category shall be at or lower than the target standard value.

(1) From FY 2004 to FY 2009 (for residential use)

| Category | | Calculation formula of standard energy consumption efficiency |
|---------------|------------------------------------|---|
| Category name | Cooling type | |
| a | Cold air-natural convection type*1 | $E_1=0.281V_1+353$ |
| b | Cold air-forced circulation type*2 | $E_1=0.281V_1+353$ |

*1 The walls of the freezing room function as an evaporator, and foods are refrigerated by direct freezing.

In the case of the two-door type, however, another evaporator is needed for the refrigeration room in addition to that for the freezing room.

*2 An evaporator is installed in the rear of the freezing room, and with use of fan cold air is generated and distributed to the freezing room and refrigeration room.

Remarks : E1 and V1 express the following numerical values.

E1 : Standard energy consumption efficiency (unit: kWh per year)

V1: Adjusted internal volume (The figure is acquired by multiplying rated internal volume of freezing compartment by either 2.15 for three-star type, 1.85 for two-star type, or 1.55 for one-star type. The obtained figure shall be rounded to the nearest whole number.) (unit: liter)

(2) FY 2010 and each fiscal after that (for residential use)

| Category | | | Calculation formula of standard energy consumption efficiency |
|---------------|----------------------------------|-----------------------|---|
| Category name | Cooling type | Rated internal volume | |
| A | Cold air-natural convection type | | $E_2=0.844V_2+155$ |
| B | Cold air-forced circulation type | Up to 300 liter | $E_2=0.774V_2+220$ |
| C | | Over 300 liter | $E_2=0.302V_2+343$ |

Remarks: E2 and V2 express the following numerical values.

E2 : Standard energy consumption efficiency (unit: kWh per year)

V2: Adjusted internal volume (The figure is acquired first by multiplying rated internal volume of freezing compartment by either 2.20 for three-star type, 1.87 for two-star type, or 1.54 for one-star type. The obtained figure shall be rounded to the nearest whole number.) (unit: liter)

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7.11 Electric Freezers(2)

(3) Electric freezers whose target fiscal year is FY 2016 and each subsequent fiscal year (for commercial use)

| Category | | Calculation formula of standard energy consumption efficiency |
|---------------|-----------------|---|
| Category name | Shape | |
| 3A | Vertical type | $E_3=1.96V_3+186n_F+295d_F+788$ |
| 3B | Horizontal type | $E_3=4.12V_3+157n_F+157d_F+349$ |
| 4A | Chest freezer | $E_3=1.16V_3+211$ |
| 4B | Freezer-stocker | $E_3=1.39V_3+359$ |

Remarks : 1. “Vertical type” refers to a front-opening type with a height (unit: mm) based on the external dimensions stipulated in JIS B 8630 (2009) (hereinafter “external depth dimension”) over 1,000 mm. The same applies hereinafter.

2. “Horizontal type” refers to a front-opening type with an external height dimension of 1,000 mm or less. The same applies hereinafter.
3. “Chest freezer” refers to a front-opening type with a door which is pulled up.
4. “Freezer-stocker” refers to a front-opening type with a door which slides leftward and rightward.
5. E_3 is the numeric value of the standard energy consumption efficiency (unit: kWh per year).
6. V_3 is the adjusted internal volume (unit: l) calculated by the calculation formula given in the right column for each category name given in the left column in the following table, rounded off to the nearest integer. d is the depth (unit: mm) based on the external dimensions stipulated in JIS B 8630 (2009) (hereinafter “external depth dimension”). V_F is the rated internal volume (unit: l).

| Category name | Adjusted internal volume |
|---------------|--------------------------|
| 3A | $V_3=800/d \times V_F$ |
| 3B | $V_3=600/d \times V_F$ |
| 4A | $V_3=V_F$ |
| 4B | $V_3=V_F$ |

However, if the result of the calculation formula above is 500 or less for the category name “3A,” 75 or less for the category name “3B,” 250 or less for the category name “4A,” or 50 or less for the category name “4B,” then the numeric values used are 500, 75, 250, and 50, respectively.

7. n_F is the number of places behind side-by-side doors of a freezer where center pillars are not installed.
8. d_F is used as $d_F = 1$ for freezers with multiple doors (i.e. those which have a number of doors that exceed the standard number of doors stated in the right column of the following table, in accordance with the type set forth in the left column of the table), and as $d_F = 0$ for others.

| Shape | Type | Standard number of doors |
|-----------------|---|--------------------------|
| | External width dimension | |
| Vertical type | 825 mm or less | 2 |
| | Over 825 mm and no more than 1,650 mm | 4 |
| | Over 1,650 mm | 6 |
| Horizontal type | 1,050 mm or less | 1 |
| | Over 1,050 mm and no more than 1,650 mm | 2 |
| | Over 1,650 mm | 3 |

* “External width dimension” refers to the width (unit: mm) based on the external dimension stipulated in JIS B 8630 (2009).

Target Fiscal Year

- (1) FY 2004 and each subsequent fiscal year (until FY 2009) (residential freezers)
- (2) FY 2010 and each subsequent fiscal year (residential freezers)
- (3) FY 2016 and each subsequent fiscal year (commercial freezers)

Energy Saving Effects

- (1) Electric freezers with FY 2004 as the target fiscal year: Annual power consumption was improved by about 29.6% over the FY 1998 level (initially about 22.9% improvement had been expected).
- (2) Electric freezers with FY 2010 as the target fiscal year: Efficiency was improved by about 24.9% over the FY 2005 level by the target year (FY 2010).
- (3) Commercial freezers: Efficiency is expected to be improved by about 20.7% over the FY 2007 level by the target year (FY 2016).

Display Items

<Residential freezers> Product name and type, rated internal volume, energy consumption efficiency, external dimensions, and residential electric freezer manufacturer's name.
 <Commercial freezers> Product name and type, category name, rated internal volume, external depth dimension, number of places behind side-by-side doors of a freezer where center pillars are not installed, multiple doors if applicable, energy consumption efficiency, and commercial freezer manufacturer's name

Place of Display

<Residential freezers> Location that can be readily seen on the body of the product.
 <Commercial freezers> Location that can be readily seen on the body of the product.

Target Requirements of Recommendations and Orders

Manufacturers or importers whose manufacturing volume or importing volume (limited to shipment to the domestic market) is 300 units (100 units for electric freezers other than residential) or more.



7.12 Space Heaters

Target Scope

Space heaters using gas or oil for fuel, except the following:
 1) ones of unvented type, 2) ones using gases other than either those of City Gas 13A group or liquefied petroleum gas for fuel, 3) vented gas space heaters, 4) vented oil space heaters with maximum fuel consumption of over 4.0L/h, or 5) direct vent type oil space heaters with maximum fuel consumption of over 2.75L/h.

Energy Consumption Efficiency

Energy consumption efficiency is heat efficiency (%) measured in the manner stipulated by JIS S2122 or S3031.

Category, Target Values

In the target fiscal year and each subsequent fiscal year, energy consumption efficiency in each category shall be at or greater than the target standard value.

Gas space heaters

| Category | Standard energy consumption efficiency |
|------------------|--|
| Direct vent type | 82.0 |

Oil space heaters

| Category | | | Standard energy consumption efficiency or calculation formula thereof |
|-----------------------------|---|---------------|---|
| Air supply and exhaust type | Heat transfer type | Category name | |
| Direct vent type | Natural convection type | A | 83.5 |
| | Forced convection type | B | 86.0 |
| Vented type | Radiating type | C | 69.0 |
| | Other than radiating types with maximum fuel consumption of 1.5 liters per hour or less | D | 67.0 |
| | Other than radiating types with maximum fuel consumption of more than 1.5 liters per hour | E | $E = -3.0L + 71.5$ |

Remarks : E and L shall express the following numeric values.

E : Standard energy consumption efficiency (unit: percent)

L : Maximum fuel consumption (unit: liters per hours)

Target Fiscal Year

FY 2006 and each subsequent fiscal year

Energy Saving Effects

Efficiency was improved by about 1.8% and 5.3% for gas space heaters and oil space heaters, respectively, over the FY 2000 level by the target year (FY 2006) (initially about 1.4% and 3.8% improvements had been expected for gas space heaters and oil space heaters, respectively).

Display Items

Product name or type, category (limited to oil space heaters), maximum fuel consumption (limited to nonradiation type vented oil space heaters whose maximum fuel consumption is over 1.5L/h), energy consumption efficiency, and manufacturer's name

Place of Display

Locations that can be readily seen on the body of the product and in catalogs that include performance indications.

Target Requirements of Recommendations and Orders

Manufacturers or importers whose manufacturing volume or importing volume (limited to shipment to the domestic market) is 300 units or more.

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7.13 Gas Cooking Appliances(1)

Target Scope

Gas cooking appliances, except the following:

- 1) gas rice cookers, 2) ones for industrial use, 3) ones using gases other than either those of City Gas 13A group or liquefied petroleum gas for fuel, 4) gas grills, 5) gas cooking tables, or 6) portable gas stoves.

Energy Consumption Efficiency

For gas burner sections, energy consumption efficiency is heat efficiency (%) measured as specified by JIS S2103. For grill sections and oven sections, energy consumption efficiency is gas consumption (Wh) per cooking.

Category, Target Values

In the target fiscal year and each subsequent fiscal year, the energy consumption efficiency of the burner area per category shall not be below the target standard value.

○ Burner Section

| Category | | | | Burner Section Standard energy consumption efficiency |
|----------------------------|-------------------------|-------------------|---------------|---|
| Gas cooking appliance type | Installation type | Number of burners | Category name | |
| Gas burners | Tabletop type | | A | 51.0 |
| | Built-in type | | B | 48.5 |
| Gas burners with grill | Tabletop type | Less than 2 | C | 56.3 |
| | | 3 or more | D | 52.4 |
| | Built-in type | Less than 2 | E | 53.0 |
| | | 3 or more | F | 55.6 |
| | Cabinet/stationary type | | G | 49.7 |
| Gas range | | | H | 48.4 |

- Remarks :
1. “Gas range” is a combination of gas oven and gas burners.
 2. “Tabletop type” is an appliance placed on a table when used.
 3. “Built-in type” is an appliance built in a wall or a table.
 4. “Cabinet type” is an appliance installed in a specially-built cabinet.
 5. “Stationary type” is an appliance installed on a table or floor.

In the target fiscal year and each subsequent fiscal year, the energy consumption efficiency of the grill section and oven section in each category shall be at or lower than the target standard value.

○ Grill Section

| Combustion type | Category | | Grill Section Standard energy consumption efficiency calculation formulas |
|-----------------|----------------|---------------|---|
| | Cooking Method | Category name | |
| Single Sided | With water | I | $E=25.1V_g+123$ |
| | Without water | J | $E=25.1V_g+16.4$ |
| Double Sided | With water | K | $E=12.5V_g+172$ |
| | Without water | L | $E=12.5V_g+101$ |

- Remarks :
1. E and V_g express the following numeric values.
 E : grill section standard energy consumption efficiency (unit: Wh)
 V_g : internal volume (unit: l)
 2. “Single Sided” refers to a type that cooks food on one side.
 3. “Double Sided” refers to a type that cooks food on both sides.
 4. “With water” refers to a type that cooks food on a grill plate with a water reservoir.
 5. “Without water” refers to a type that cooks food on a grill plate without a water reservoir.
 6. “Internal volume” is obtained by multiplying the grill surface area by the height from the bottom of the grill plate to the top of the inlet, and rounding to the nearest tenth.



7.13 Gas Cooking Appliances(2)

○ Oven Section

| Category | | Oven Section Standard energy consumption efficiency calculation formulas |
|----------------------------------|---------------|--|
| Installation Type | Category name | |
| Tabletop type or stationary type | M | $E=18.6V_o+306$ |
| Built-in type | N | $E=18.6V_o+83.3$ |

Remarks : 1. E and V_o express the following numeric values.

E : oven section standard energy consumption efficiency (unit: Wh)

V_o : internal volume (unit: l)

- “Tabletop type” is an appliance placed on a table when used.
- “Built-in type” is an appliance built in a wall or a table.
- “Stationary type” is an appliance installed on a table or floor.
- “Internal volume” is obtained by multiplying the internal bottom surface area by the internal height, and rounding to the nearest tenth.

Target Fiscal Year

Burner Section : FY 2006 and each subsequent fiscal year

Grill Section : FY 2008 and each subsequent fiscal year

Oven Section : FY 2008 and each subsequent fiscal year

Energy Saving Effects

Burner section : Efficiency was improved by about 15.8% over the FY 2000 level by the target year (FY 2006).

Grill section : Efficiency was improved by about 24.0% over the FY 2002 level by the target year (FY 2008).

Oven section : Efficiency was improved by about 25.8% over the FY 2002 level by the target year (FY 2008).

Display Items

Product name or type, category name, burner section energy consumption efficiency (limited to those having burner section) / grill section energy consumption efficiency (limited to those having grill section) / oven section energy consumption efficiency (limited to those having oven section) , and manufacturer's name

Place of Display

Locations that can be readily seen on the body of the product and in catalogs that include performance indications.

Target Requirements of Recommendations and Orders

Manufacturers or importers whose manufacturing volume or importing volume (limited to shipment to the domestic market) is 5,000 units or more.

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7.14 Gas Water Heaters(1)

Target Scope

Gas water heaters, except the following:

- 1) ones of water storage type, 2) ones for industrial use, 3) ones using gases other than either those of City Gas 13A group or liquefied petroleum gas for fuel, 4) bathtub water heaters installed inside of a bathroom, having an oxygen depletion safety shut-off device, 5) direct vent type bathtub gas water heaters whose air supply/exhaust outlet is connected to a duct.

Energy Consumption Efficiency

For gas instant water heaters and bath tub gas heaters (with no hot water supply function), energy consumption efficiency is heat efficiency (%) measured as specified by JIS S 2109. For gas heaters (with no hot water supply function), energy consumption efficiency is the heat efficiency (%) when the water temperature difference between outward flow and inward flow in a hot water circulation becomes the specified level.

For bathtub gas water heaters (with hot water supply functions), energy consumption efficiency is the weighted average value obtained by a 1:3.3 ratio (1 for bath section heat efficiency, 3.3 for hot water supply section heat efficiency).

For gas water heaters for space heating (with hot water supply functions), energy consumption efficiency is the weighted average value obtained by a 1:3 ratio (1 for space heating section heat efficiency, 3 for hot water supply section heat efficiency).

Category, Target Values

In the target fiscal year and each subsequent fiscal year, energy consumption efficiency in each category shall be at or greater than the target standard value.

| Category | | | | | Standard energy consumption efficiency |
|---|--|--------------------------|---|--|--|
| Gas water heater type | Ventilation type | Circulation type | Exhaust type | Category name | |
| Gas instant water heaters | Natural ventilation type | | Unvented type | A | 83.5 |
| | | | Other than unvented types | B | 78.0 |
| | Forced ventilation type | | Other than outdoor types | C | 80.0 |
| | | | Outdoor type | D | 82.0 |
| Bath tub gas water heaters (with no hot water supply functions) | Natural ventilation type | Natural circulation type | Vented type or direct vent type (the height where the air supply and exhaust part penetrates external wall is as high as vented types) | E | 75.5 |
| | | | Direct vent type (other than types of the height where the air supply and exhaust part penetrates external wall is as high as vented types) | F | 71.0 |
| | | | Outdoor type | G | 76.4 |
| | Forced ventilation type | Natural circulation type | | H | 70.8 |
| | | Forced circulation type | | I | 77.0 |
| | Bath tub gas water heaters (with hot water supply functions) | Natural ventilation type | Natural circulation type | Vented type or direct vent type (the height where the air supply and exhaust part penetrates external wall is as high as vented types) | J |
| Direct vent type (other than types of the height where the air supply and exhaust part penetrates external wall is as high as vented types) | | | | K | 77.0 |
| Outdoor type | | | | L | 78.9 |
| Forced ventilation type | | Natural circulation type | | M | 76.1 |
| | | Forced circulation type | Other than outdoor types | N | 78.8 |
| | | | Outdoor type | O | 80.4 |
| Gas water heater for space heating (with no hot water supply functions) | | | | P | 83.4 |
| Gas water heater for space heating (with hot water supply functions) | | | | Q | 83.0 |



7.14 Gas Water Heaters(2)

| | |
|--|--|
| Target Fiscal Year | (1) Gas instant water heaters and bathtub gas water heaters: FY 2006 and each subsequent fiscal year (2) Gas water heaters for space heating: FY 2008 and each subsequent fiscal year |
| Energy Saving Effects | (1) Gas instant water heaters and bath tub gas water heaters : Efficiency was improved by about 5.5% over the FY 2000 level by the target year (FY 2006). (2) as heaters (with no hot water supply function) : Efficiency was improved by about 6.7% over the FY 2002 level by the target year (FY 2008). (3) Gas heaters (with hot water supply function) : Efficiency was improved by about 7.9% over the FY 2002 level by the target year (FY 2008). |
| Display Items | Product name or type, category name, energy consumption efficiency, and manufacturer's name |
| Place of Display | Locations that can be readily seen on the body of the product and in catalogs that include performance indications. For bathtub gas water heaters (with hot water supply functions), in addition to the energy consumption efficiency specified above, energy efficiency of bath section and hot water supply section measured respectively should be displayed in catalogues that describe performance. For gas water heaters for space heating (with hot water supply functions), in addition to the energy consumption efficiency specified above, energy efficiency of space heating section and hot water supply section measured respectively should be displayed in a catalogues that describe performance. |
| Target Requirements of Recommendations and Orders | Manufacturers or importers whose manufacturing volume or importing volume (limited to shipment to the domestic market) is 3,000 units or more. |

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7.15 Oil Water Heaters

Target Scope Oil water heaters, except the following,
 1) bathtub gas water heaters with pot-type burners, 2) ones for industrial use, 3) ones having a structure for burning firewood, or 4) hot water boilers whose gauge pressure exceeds 0.1 MPa.

Energy Consumption Efficiency Energy consumption efficiency is heat efficiency (%) measured as specified by JIS S 3031.

Category, Target Values In the target fiscal year and each subsequent fiscal year, energy consumption efficiency in each category shall be at or greater than the target standard value.

| Purpose | Category | | | Standard energy consumption efficiency |
|----------------------|--|---|---------------|--|
| | Heating type | Air supply and exhaust type or control method | Category name | |
| For hot water supply | Instantaneous type | | A | 86.0 |
| | Storage type with rapid heating system | | B | 87.0 |
| | Storage types other than rapid heating system | | C | 85.0 |
| For heaters | Instantaneous type | Unvented type | D | 85.3 |
| | | Vented type | E | 79.4 |
| | | Direct vent type | F | 82.1 |
| | Storage type with rapid heating system | On/off control | G | 87.0 |
| | | Other than on/off control | H | 82.0 |
| | Storage types other than rapid heating system | | I | 84.0 |
| For baths | Water heaters with a center flue heat exchanger | | J | 75.0 |
| | Water heaters without a center flue heat exchanger | | K | 61.0 |

- Remarks :
1. “For hot water supply” refers to equipment mainly used to supply hot water, including equipment featuring heating or bathing functions.
 2. “For heaters” refers to equipment mainly used for heating, including equipment that has hot water supply or bathing functions.
 3. “For baths” refers to equipment used mainly for bath use, including equipment that has hot water supply or heating functions.
 4. “Rapid heating system” refers to equipment of which heating time (as measured by the heating speed measurement method described in JIS S 3031) is within 200 seconds.
 5. “Center flue heat exchanger” refers to the air flue that penetrates the hot water supply section.
 6. “On/off control” refers to those that control by only ignition and extinction.

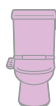
Target Fiscal Year FY 2006 and each subsequent fiscal year

Energy Saving Effects Efficiency was improved by about 4.0% over the FY 2000 level by the target year (FY 2006) (initially about 3.5% improvement had been expected).

Display Items Product name or type, category name, energy consumption efficiency, and manufacturer’s name

Place of Display Locations that can be readily seen on the body of the product and in catalogs that include performance indications.

Target Requirements of Recommendations and Orders Manufacturers or importers whose manufacturing volume or importing volume (limited to shipment to the domestic market) is 600 units or more.



7.16 Electric Toilet Seats

Target Scope

Warm-water-shower toilet seats and warm toilet seats, except the followings:

- 1) Warm water is supplied from other hot-water supply equipment (centralized hot-water supply system),
- 2) Toilet seats equipped with a warm-water-shower function only,
- 3) Electric toilet seats for caring use, among portable ones,
- 4) Electric toilet seats for the exclusive use on railway cars.

Energy Consumption Efficiency

Energy consumption efficiency is annual power consumption (kWh/year).

Category, Target Values

In the target fiscal year and each subsequent fiscal year, energy consumption efficiency in each category shall be at or lower than the target standard value.

- (1) Electric toilet seats whose target fiscal year is FY 2006 and each subsequent fiscal year (until FY 2011)

| Category | | Standard energy consumption efficiency or calculation formula thereof |
|---|---------------|---|
| Type of toilet seat | category name | |
| Warm toilet seat | a | 162 |
| Warm-water-shower toilet seat without warm water tank | b | 189 |
| Warm-water-shower toilet seat with warm water tank | c | $P=38.3 \times L+243$ |

Remarks : 1. “Warm toilet seat” refers to toilet seats with a warming function only. Hereinafter the same applies.

2. “Warm-water-shower toilet seat” refers to warm toilet seats equipped with built-in warm-water-shower equipment. Hereinafter the same applies.

3. P and L express the following numeric values.

P : Standard energy consumption efficiency (unit: kWh/year)

L : Amount of hot water stored (Shall be the volume of the tank above the heater, so in terms of the relevant capacity, the hot water tank is to be set up level with the heater at the top and the volume below it shall be the numeric value measured.) (unit: liter)

- (2) Electric toilet seats whose target fiscal year is FY 2012 and each subsequent fiscal year

| Category | | | Standard energy consumption efficiency |
|--|--|---------------|--|
| Availability of the shower function | Availability of the warm-water tank | Category name | |
| Warm toilet seat (Without a shower function) | – | A | 141 |
| Warm-water-shower toilet seat (With a shower function) | Warm-water storage type (With a warm-water tank) | B | 183 |
| | Instantaneous type (Without a warm-water tank) | C | 135 |

Target Fiscal Year

- (1) FY 2006 and each subsequent fiscal year (until FY 2011)
- (2) FY 2012 and each subsequent fiscal year

Energy Saving Effects

- (1) Electric toilet seats with FY 2006 as the target fiscal year: Annual power consumption was improved by about 14.6% over the FY 2000 level (initially 10.0% improvement had been expected).
- (2) Electric toilet seats with FY 2012 as the target fiscal year: Efficiency was improved by about 18.8% over the FY 2006 level by the target year (FY 2012).

Display Items

Product name or type, category, amount of warm water stored (Applicable only to warm-water-shower toilet seats incorporating warm-water storage tanks)*1, energy consumption efficiency (Annual energy consumption)*2, and manufacturer's name.

*1 Applicable only to those whose target fiscal year is FY 2006 and each subsequent fiscal year (until FY 2011)

*2 Annual energy consumption without using power-saving functions shall be displayed in parenthesis.

Explanatory note shall also be appended.

Place of Display

Locations that can be readily seen in catalogs and instruction manuals that include performance indications.

Target Requirements of Recommendations and Orders

Manufacturers or importers whose manufacturing volume or importing volume (limited to shipment to the domestic market) is 2,000 units or more.

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7.17 Vending Machines(1)

Target Scope

Vending machines for canned/bottled beverages, beverages in paper containers, and beverages served in cups, all of which are specified in JIS B 8561.

However, the following products shall be excluded.

- 1) ones intended to be used only on ships, 2) ones intended to be used only on railway cars, 3) cup type beverage vending machines that cool beverages (raw materials) by means of electronic cooling (e.g., Peltier cooling), 4) ones of the countertop type, or 5) ones for alcoholic beverages other than beer (including low-malt beer).

Energy Consumption Efficiency

(1) Vending machines whose target fiscal year is FY 2005 and each subsequent fiscal year (until FY 2011): Annual energy consumption (kWh/year) measured in accordance with the method specified in JIS B 8561 (2000).

(2) Vending machines whose target fiscal year is FY 2012 and each subsequent fiscal year: Annual energy consumption (kWh/year) measured in accordance with the method specified in JIS B 8561 (2007).

Category, Target Values

In the target fiscal year and each subsequent fiscal year, energy consumption efficiency in each category shall be at or lower than the target standard value.

| Beverages to be Sold | Target fiscal year and Target standards |
|-------------------------------|--|
| Canned/bottled beverages | FY 2005 and subsequent fiscal year (until FY 2011): Target standards (1) shall be complied with. |
| | FY 2012 and each subsequent fiscal year: Target standards (2) shall be complied with. |
| Beverages in paper containers | FY 2012 and each subsequent fiscal year: Target standards (2) shall be complied with. |
| Beverages served in cups | FY 2012 and each subsequent fiscal year: Target standards (2) shall be complied with. |

(1) Vending machines for canned/bottled beverages whose target fiscal year is FY 2005 and each subsequent fiscal year (until FY 2011)

| Category | | Calculation formula of standard energy consumption efficiency |
|--|---------------|---|
| Type of Vending Machine | Category name | |
| Machines serving cold only, or Machines serving hot or cold | 1 | $E=0.346V+465$ |
| Machines serving hot and cold(Internal depth is below 400 mm) | 2 | $E=2.18V_a-214$ |
| Machines serving hot and cold(Internal depth is 400 mm or greater) | 3 | $E=0.876V_a+527$ |

- Remarks :
1. “Machines serving cold only” refers to vending machines that refrigerate the products sold.
 2. “Machines serving hot or cold” refers to vending machines that refrigerate or warm the products sold.
 3. “Machines serving hot and cold” refers to vending machines which have warm section and cold section separated by internal partitions, so that the products sold are kept refrigerated or warmed respectively.
 4. E, V, and V_a express the following numeric values.
 - E : Standard energy consumption efficiency (unit: kWh per year)
 - V : Actual internal volume (indicates the numeric value calculated from the internal dimensions of the goods storage area; the same applies hereinafter) (unit: liter)
 - V_a : Adjusted internal volume (indicates the numeric value obtained by multiplying the actual internal volume of the hot storage compartment by 40, dividing the result by 11, and then adding that value to the actual internal volume of the cold storage compartment; the same applies hereinafter) (unit: liter)



7.17 Vending Machines(2)

(2) Vending machines whose target fiscal year is FY 2012 and each subsequent fiscal year

| Beverages to be sold | Category | | Category name | Calculation formula of standard energy consumption efficiency |
|------------------------------|---|--|---------------|---|
| | Type of Vending Machine | | | |
| Canned or bottled beverages | Machines serving cold only, or Machines serving hot or cold | | I | $E=0.218V+401$ |
| | Machines serving hot and cold (Internal depth is below 400 mm) | | II | $E=0.798V_a+414$ |
| | Machines serving hot and cold (Internal depth is 400 mm or greater) | Without electronic money processing device | III | $E=0.482V_a+350$ |
| | | With electronic money processing device | IV | $E=0.482V_a+500$ |
| Beverages in paper container | Type A (Dummy samples are used for selling goods) | Machines serving cold only | V | $E=0.948V+373$ |
| | | Machines serving hot and cold (having two internal compartments) | VI | $E=0.306V_b+954$ |
| | Type B (Actual goods are used for visual display and selling goods) | Machines serving hot and cold (having three internal compartments) | VII | $E=0.63V_b+1474$ |
| | | Machines serving cold only | VIII | $E=0.477V+750$ |
| | | Machines serving hot and cold | IX | $E=0.401V_b+1261$ |
| Beverages served in cups | | | X | $E=1020(T \leq 1500)$ $E=0.293T+580(1500 < T)$ |

Remarks : 1. V_b : Adjusted internal volume (numeric value acquired first by multiplying the actual internal volume of the hot storage compartment by 40, which is divided by 10, and then by adding the result to the actual internal volume of the cold storage compartment) (unit: L)

2. T : Adjusted heat capacity (numeric value obtained by totaling the hot-water tank capacity multiplied by 80, the cold-water tank capacity multiplied by 15, and the ice storage capacity multiplied by 95 and then divided by 0.917, and then multiplying the total sum by 4.19. (unit: kJ)

Target Fiscal Year

Vending machines for canned/bottled beverages:

- (1) FY 2005 and each subsequent fiscal year (until FY 2011)
- (2) FY 2012 and each subsequent fiscal year

Vending machines for beverages in paper containers, vending machines for beverages served in cups:

- (2) FY 2012 and each subsequent fiscal year

Energy Saving Effects

(1) Vending machines for canned/bottled beverages with FY 2005 as the target fiscal year: The annual power consumption was improved by about 37.3% over the FY 2000 level (initially about 33.9% improvement had been expected).

(2) Vending machines with FY 2012 as the target fiscal year: Efficiency was improved by about 48.8% over the FY 2005 level by the target year (FY 2012) (initially about 33.9% improvement had been expected).

Display Items

Product name and type, category, actual internal volume (limited to machines serving cold only, or machines serving hot or cold), adjusted internal volume (limited to machines for hot and cold), adjusted heat capacity (limited to vending machines for beverages served in cups), energy consumption efficiency, and manufacturer's name

Place of Display

Locations that can be readily seen on the body of the product and in catalogs that include performance indications.

Target Requirements of Recommendations and Orders

Manufacturers or importers whose manufacturing volume or importing volume (limited to shipment to the domestic market) is 300 units or more.

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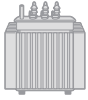
Process of Establishing Top Runner Standard Values

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7.18 Transformers(1)

Target Scope

Transformers that run on alternating current and whose rated primary voltage is over 600V up to 7,000V, except the following:

- 1) ones using gas for insulation, 2) ones using H type insulation material, 3) ones with Scott connection,
- 4) ones having 3 or more windings, 5) ones installed on utility poles, 6) single-phase transformers whose rated capacity is up to 5 kVA or over 500 kVA, 7) triple-phase transformers whose rated capacity is up to 10 kVA or over 2,000 kVA, 8) triple-phase transformers using resinous insulation material and intended to transform triple-phase AC to single-phase AC and triple-phase AC, 9) ones whose rated secondary voltage is less than 100 V or over 600 V, or 10) ones of air-cooling type or water-cooling type.

Energy Consumption Efficiency

Energy consumption efficiency is the total loss (W) acquired through the no-load loss and load loss measured using the method stipulated by JIS C 4304 and C 4306.

Category, Target Values

In the target fiscal year and each subsequent fiscal year, energy consumption efficiency in each category shall be at or lower than the target standard value.

(1) Transformers of the target fiscal year and each subsequent fiscal year (until FY 2013)

| Transformer type | Category | | | Calculation formula of standard energy consumption efficiency |
|------------------------|------------------|-----------------|----------------|---|
| | Number of phases | Rated frequency | Rated capacity | |
| Oil-filled transformer | Single phase | 50Hz | | $E=15.3S^{0.696}$ |
| | | 60Hz | | $E=14.4S^{0.698}$ |
| | Triple phase | 50Hz | Up to 500 kVA | $E=23.8S^{0.653}$ |
| | | | Over 500 kVA | $E=9.84S^{0.842}$ |
| | | 60Hz | Up to 500 kVA | $E=22.6S^{0.651}$ |
| | | | Over 500 kVA | $E=18.6S^{0.745}$ |
| Molded transformer | Single phase | 50Hz | | $E=22.9S^{0.647}$ |
| | | 60Hz | | $E=23.4S^{0.643}$ |
| | Triple phase | 50Hz | Up to 500 kVA | $E=33.6S^{0.626}$ |
| | | | Over 500 kVA | $E=24.0S^{0.727}$ |
| | | 60Hz | Up to 500 kVA | $E=32.0S^{0.641}$ |
| | | | Over 500 kVA | $E=26.1S^{0.716}$ |

* For transformers that are not used under standard conditions described by JIS C 4304 and C 4306, as well as JEMA standards 1482 and 1483, the target standard value is obtained by multiplying 1.10 for oil-filled transformers and 1.05 for molded transformers to the respective formulas specified in above category.

Remarks : 1. “Oil-filled transformers” are transformers that use insulating oil as insulating materials.

2. “Molded transformers” are transformers that use resin insulating materials.

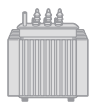
3. E and S express the following numeric values.

E: Standard energy consumption efficiency (unit: Watt)

S: Rated capacity (unit: kVA)

(2) Transformers whose target fiscal year is FY 2014 and each subsequent fiscal year

| Transformer type | Category | | | Calculation formula of standard energy consumption efficiency |
|------------------------|------------------|-----------------|----------------|---|
| | Number of phases | Rated frequency | Rated capacity | |
| Oil-filled transformer | Single phase | 50Hz | | $E=11.2S^{0.732}$ |
| | | 60Hz | | $E=11.1S^{0.725}$ |
| | Triple phase | 50Hz | Up to 500 kVA | $E=16.6S^{0.696}$ |
| | | | Over 500 kVA | $E=11.1S^{0.809}$ |
| | | 60Hz | Up to 500 kVA | $E=17.3S^{0.678}$ |
| | | | Over 500 kVA | $E=11.7S^{0.790}$ |
| Molded transformer | Single phase | 50Hz | | $E=16.9S^{0.674}$ |
| | | 60Hz | | $E=15.2S^{0.691}$ |
| | Triple phase | 50Hz | Up to 500 kVA | $E=23.9S^{0.659}$ |
| | | | Over 500 kVA | $E=22.7S^{0.718}$ |
| | | 60Hz | Up to 500 kVA | $E=22.3S^{0.674}$ |
| | | | Over 500 kVA | $E=19.4S^{0.737}$ |



7.18 Transformers(2)

* For transformers that are not used under standard specification conditions stipulated in JIS C 4304 and JIS C 4306, the target standard value is obtained by multiplying 1.10 for oil-filled transformers and 1.05 for molded transformers in the respective formulas in each of the above categories.

Remarks : 1. “Oil-filled transformers” are transformers that use insulating oil as insulating materials.

2. “Molded transformers” are transformers that use resin insulating materials.

3. E and S express the following numeric values.

E: Standard energy consumption efficiency (unit: Watt)

S: Rated capacity (unit: kVA)

Target Fiscal Year

(1) Oil-filled transformers: FY 2006 and each subsequent fiscal year (until FY 2013)

Molded transformers: FY 2007 and each subsequent fiscal year (until FY 2013)

(2) Oil-filled transformers: FY 2014 and each subsequent fiscal year

Molded transformers: FY 2014 and each subsequent fiscal year

Energy Saving Effects

(1) Efficiency was improved by about 13.1% over the FY 1999 level by the target year.

(2) Efficiency is expected to be improved by about 12.5% over the FY 2009 by the target year (FY 2014).

Display Items

Product name and type, transformer type, rated capacity, number of phases, rated frequency, rated primary and secondary voltage, energy consumption efficiency, standard load factor, name of standard, and manufacturer's name.

Place of Display

Locations that can be readily seen in catalogs with performance indications and documents provided by the manufacturer for selecting equipment.

Target Requirements of Recommendations and Orders

Manufacturers or importers whose manufacturing volume or importing volume (limited to shipment to the domestic market) is 100 units or more.

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7.19 Electric Rice Cookers

Target Scope Electric rice cookers, except the following:
 1) ones for industrial use, 2) ones without electronic circuit, or 3) ones whose maximum cooking capacity is less than 0.54 liters.

Energy Consumption Efficiency Energy consumption efficiency is annual energy consumption efficiency (kWh/year) obtained as follows. Energy consumption is first measured for each of rice-cooking, keep-warm, timer and standby modes, and each value is multiplied by a coefficient based on the state of usage such as the number of cooking operation carried out per year, and then the resulting values are added together.

Category, Target Values In the target fiscal year and each subsequent fiscal year, energy consumption efficiency in each category shall be at or lower than the target standard value.

| Heating method | Category | | Calculation equation for standard energy consumption efficiency |
|--|--|---------------|---|
| | Maximum rice cooking capacity | Category name | |
| Electromagnetic induction heating products | 0.54 liters or more, and less than 0.99 liters | A | $E_k=0.209M+48.5$ |
| | 0.99 liters or more, and less than 1.44 liters | B | $E_k=0.244M+83.2$ |
| | 1.44 liters or more, and less than 1.80 liters | C | $E_k=0.280M+132$ |
| | 1.80 liters or more | D | $E_k=0.252M+132$ |
| Non-electromagnetic induction heating products | 0.54 liters or more, and less than 0.99 liters | E | $E_k=0.209M+36.7$ |
| | 0.99 liters or more, and less than 1.44 liters | F | $E_k=0.244M+75.6$ |
| | 1.44 liters or more, and less than 1.80 liters | G | $E_k=0.280M+99.0$ |
| | 1.80 liters or more | H | $E_k=0.252M+122$ |

Remarks: 1. The maximum rice cooking capacity shall be determined by multiplying the volume of the measuring cup specified by the manufacturer (unit: liter) by the maximum number of cups that the product is designed for.
 2. E_k and M represent the following numerical values.
 E_k : Standard energy consumption efficiency (unit: kWh per year)
 M : Mass of evaporated water (This is the mass of water expelled from the rice cooker when electric power consumption is measured for each rice cooking operation, and is the mean of the mass of the evaporated water obtained at every measurement of electric power consumption during cooking rice. The mass of water expelled from the rice cooker is calculated by subtracting the measured weight of the rice cooker within 1 minute after completion of cooking prior to opening the lid from the weight of the rice cooker containing water and rice prior to the start of cooking. It is expressed in grams and rounded off to 1 decimal place.)

Target Fiscal Year FY 2008 and each subsequent fiscal year

Energy Saving Effects Efficiency was improved by about 16.7% over the FY 2003 level by the target year (FY 2008).

Display Items and Place of Display Maximum rice cooking quantity, category name, maximum rice cooking capacity, amount of evaporated water, energy consumption efficiency (annual electric power consumption), electric power consumption per rice cooking operation, electric power consumption per hour in the keep-warm mode, timer mode and standby mode, manufacturer's name, and precautions for use.

Location that can be readily seen by the consumer. Precautions for use shall be indicated on the body of the product or in the instruction manual.

* Indications on electric rice cookers are based on the stipulations of the Household Goods Quality Labeling Law (Law No. 104 enacted in 1962), and are not covered by the Energy Conservation Law.

Target Requirements of Recommendations and Orders Manufacturers or importers whose manufacturing volume or importing volume (limited to shipment to the domestic market) is 6,000 units or more.



7.20 Microwave Ovens

Target Scope

Microwave ovens, except the following:

1) ones having gas oven, 2) ones for industrial use, 3) ones whose rated input voltage is exclusive to 200V, 4) ones whose internal height is less than 135 mm, or 5) ones that are incorporated into a system kitchen and the like.

Energy Consumption Efficiency

Energy consumption efficiency is annual energy consumption efficiency (kWh/year) obtained as follows. Energy consumption is first measured for each of microwave function, oven range function and standby mode, and each value is multiplied by a coefficient based on the state of usage such as the number of heating operation carried out per year, and then the resulting values are added together.

Category, Target Values

In the target fiscal year and each subsequent fiscal year, energy consumption efficiency in each category shall be at or lower than the target standard value.

| Category | | | | Standard energy consumption efficiency |
|---|--|---------------------|---------------|--|
| Function | Heating method | Internal volume | Category name | |
| Microwave having no oven function (single-function microwave) | – | – | A | 60.1 |
| Microwave having oven function (oven ranges) | With an exposed heater (excluding those that employ a hot air circulation heating method) | Less than 30 liters | B | 73.4 |
| | | 30 liters or more | C | 78.2 |
| | Without an exposed heater (excluding those that employ a hot air circulation heating method) | Less than 30 liters | D | 70.4 |
| | | 30 liters or more | E | 79.6 |
| | Employing a hot air circulation heating method | – | F | 73.5 |

Remarks : “Internal volume” refers to the numeric value calculated from the usable dimensions of the heating chamber defined by Electrical Machinery and Appliance Quality Labeling Regulations under the Household Goods Quality Labeling Law (Law No. 104 enacted in 1962).

Target Fiscal Year

FY 2008 and each subsequent fiscal year

Energy Saving Effects

Efficiency was improved by about 10.5% over the FY 2004 level by the target year (FY 2008).

Display Items and Place of Display

External dimensions, usable dimensions of the heating chamber, category name, annual energy consumed by microwave function, annual energy consumed by oven function (limited to microwave ovens with oven function), annual standby energy consumption, energy consumption efficiency (annual electric power consumption), manufacturer’s name, and precautions for use.

Location that can be readily seen by the consumer. Precautions for use shall be indicated on the body of the product or in the instruction manual.

* Indications on electric rice cookers are based on the stipulations of the Household Goods Quality Labeling Law (Law No. 104 enacted in 1962), and are not covered by the Energy Conservation Law.

Target Requirements of Recommendations and Orders

Manufacturers or importers whose manufacturing volume or importing volume (limited to shipment to the domestic market) is 3,000 units or more.

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7.21 DVD Recorders(1)

Target Scope

DVD recorders that run on alternating current, except the followings:
 1) ones for industrial use, 2) ones without video cassette recorder (VCR) or magnetic disk unit (HDD), 3) ones having game function, 4) ones having server function, or 5) ones whose laser beam used to write to or read from an optical disc has a wavelength of 600 nanometers or shorter (next generation recording equipment (Blue-ray disk recorders and HD DVD recorders)).

Energy Consumption Efficiency

Energy consumption efficiency is annual energy consumption (kWh/year) obtained as follows. First, each of standby power, power consumption when operating DVD, VCR or HDD, and power consumption when acquiring EPG (electronic program guide) is multiplied by respective annual standby/operation hours, and then the resulting values are added together to obtain annual energy consumption.

Category, Target Values

In the target fiscal year and each subsequent fiscal year, energy consumption efficiency in each category shall be at or lower than the target standard value.

○ Non-DTB [Digital Terrestrial Broadcasting]-capable DVD recorders (Ones without built-in digital broadcasting receivers)

| Category | | | | Standard energy consumption efficiency or calculation formula |
|---------------------------|--------------------------------------|----------------------------------|---------------|---|
| Attached recording device | Tuner and signal conversion function | Additional terminal | Category name | |
| Having HDD only | Basic specifications | Without digital network terminal | A | $E=0.02C+45$ |
| | | With digital network terminal | B | $E=0.02C+49$ |
| | Having multiple tuners | Without digital network terminal | C | $E=0.02C+55$ |
| | | With digital network terminal | D | $E=0.02C+60$ |
| | Having multiple MPEG encoders | Without digital network terminal | E | $E=0.02C+63$ |
| | | With digital network terminal | F | $E=0.02C+68$ |
| Having VCR only | Basic specifications | Without digital network terminal | G | $E=39$ |
| | | With digital network terminal | H | $E=44$ |
| | Having multiple tuners | Without digital network terminal | I | $E=39$ |
| | | With digital network terminal | J | $E=54$ |
| Having both HDD and VCR | Basic specifications | Without digital network terminal | K | $E=0.02C+58$ |
| | | With digital network terminal | L | $E=0.02C+63$ |
| | Having multiple tuners | Without digital network terminal | M | $E=0.02C+68$ |
| | | With digital network terminal | O | $E=0.02C+73$ |
| | Having multiple MPEG encoders | Without digital network terminal | P | $E=0.02C+76$ |
| | | With digital network terminal | Q | $E=0.02C+81$ |

Remarks : 1. "Digital network terminal" means iLink, USB, LAN, and HDMI.
 2. E and C represent the following numeric values.
 E: Standard energy consumption efficiency (unit: kWh per year)
 C: HDD storage capacity (unit: gigabytes)

○ DTB-Capable DVD Recorders (Ones with built-in digital broadcasting receivers)

| Category | | | | Standard energy consumption efficiency |
|-----------------------------|---|---------------------------------------|---------------|--|
| Integrated Recording Device | HDD Recording Capacity | Additional Function(s) | Category name | |
| With HDD only | HDD recording capacity of below 500 GB | No additional function | a | 58.1 |
| | | With one additional function | b | 64.4 |
| | | With two or more additional functions | c | 71.2 |
| | HDD recording capacity of 500 GB or greater | No additional function | d | 65.3 |
| | | With one additional function | e | 71.7 |
| | | With two or more additional functions | f | 78.4 |
| With HDD and VCR | HDD recording capacity of below 500 GB | No additional function | g | 65.0 |
| | | With one additional function | h | 71.9 |
| | | With two or more additional functions | i | 79.3 |
| | HDD recording capacity of 500 GB or greater | No additional function | j | 72.9 |
| | | With one additional function | k | 79.8 |
| | | With two or more additional functions | l | 87.2 |

Remarks : "Additional function" refers to simultaneous dual program recording function, iLink (DV terminal) or simultaneous encoding function.



7.21 DVD Recorders(2)

| | |
|--|--|
| Target Fiscal Year | (1) DVD recorders incompatible with terrestrial digital TV: FY 2008 and each subsequent fiscal year (2) DVD recorders compatible with terrestrial digital TV: FY 2010 and each subsequent fiscal year |
| Energy Saving Effects | (1) DVD recorders incompatible with terrestrial digital TV: Efficiency was improved by about 40.9% over the FY 2004 level by the target year (FY 2008). (2) DVD recorders compatible with terrestrial digital TV: Efficiency was improved by about 45.2% over the FY 2006 level by the target year (FY 2010). |
| Display Items | Product name and type, category name, HDD storage capacity(limited to DVD recorders with HDD), energy consumption efficiency, and manufacturer's name |
| Place of Display | Locations that can be readily seen in catalogs and instruction manuals that include performance indications. |
| Target Requirements of Recommendations and Orders | Manufacturers or importers whose manufacturing volume or importing volume (limited to shipment to the domestic market) is 4,000 units or more. |

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7.22 Routers(1)

Target Scope

Routers (devices for transmitting and receiving telecommunication signals (limited to ones dedicated to Internet use), which have a function, in transmitting telecommunication signals, to transmit the telecommunication signals over what is considered the most appropriate in terms of the route situation and other factors and selected out of routes leading to the destination device), except the following:
 1) ones for use, when a communication terminal unit is to be connected to the Internet via a telephone line in making a telephone call to the provider of Internet connection service and having the communication terminal unit connected to the Internet (dialup router), 2) ones that do not transmit or exchange Internet Protocol packets, 3) ones of which, in transmitting Internet Protocol packets, the maximum sum of the signal bit numbers of the packets surpass 200 megabits per second (ones of over 200 Mbps), 4) one permitting no easy removal of a device for using an asynchronous transfer mode (router having a permanently mounted ATM interface), 5) ones having a function to overlap a high frequency current of or above 10 kHz over a power line (PLC products), 6) ones having three or more ports for transmitting/receiving aural signals (other than ones using the Internet Protocol), among connection ports for transmitting/ receiving telecommunication signals, (ones having a VoIP terminal with three or more ports), 7) ones of which, in performing wireless transmission of Internet Protocol packets, the maximum sum of the signal bit numbers of the packets surpass 100 megabits per second (wireless routers of over 100 Mbps), 8) ones having a function to use artificial satellites (satellite-interfaced routers), 9) ones having a function to transmit 53 or more multiplexed subcarriers by orthogonal frequency division multiplexing system (802.11n products), 10) ones having a function to set a virtual private network (VPN) (ones with VPN function), or 11) ones designed to permit incorporation into a computer or the like (to be incorporated into the expansion throttle or the like of a PC or a similar product).

Energy Consumption Efficiency

Energy consumption efficiency shall be in terms of power consumption (wattage) at the highest effective transmission velocity.

Category, Target Values

In the target fiscal year and each subsequent fiscal year, energy consumption in each category shall be at or smaller than the target standard value.

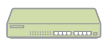
| Category | | | Standard energy consumption efficiency or calculation formula thereof |
|----------------------------|-----------------------------|---------------|--|
| Type of WAN side interface | Type of LAN side interface | Category name | |
| Only for Ethernet | Only for Ethernet | A | 4.0 |
| | For Ethernet, with VoIP | B | 5.5 |
| | For Ethernet, with wireless | C | For wireless transmission only in 2.4 GHz band: E=0.10×X2+3.9 For wireless transmission only in 5 GHz band: E=0.15×X5+3.9 For simultaneous transmission in the two bands: E=0.10×X2+0.15×X5+5.1 |
| Only for ASDL | Only for Ethernet | D | 7.4 |
| | For Ethernet, with VoIP | E | 7.4 |
| | For Ethernet, with wireless | F | 8.8 |

- Remarks : 1. “WAN side” refers to the side of the port for connection to a network, such as the Internet, and “LAN side”, to that of the port for connection to any other device or the like.
 2. E, X2 and X5 represent the following values, respectively.
 E: Standard energy consumption efficiency (unit: watts)
 X2 : Wireless output in 2.4 GHz band (unit: milliwatts/MHz)
 X5 : Wireless output in 5 GHz band (unit: milliwatts/MHz)
 3. Regarding ones for which the 2.4 GHz band or the 5 GHz band wireless transmission can be selectively accomplished where category name C applies, the value of the standard energy consumption efficiency is calculated by using the calculation formula for the frequency band of the higher effective transmission speed defined by the measurement method of energy consumption efficiency.

7.22 Routers(2)

| | |
|--|---|
| Target Fiscal Year | FY 2010 and each subsequent fiscal year |
| Energy Saving Effects | Efficiency was improved by about 40.9% over the FY 2006 level by the target year (FY 2010). |
| Display Items | Product name and type, category name, wireless transmission output (only when wireless transmission solely in the 2.4 GHz band or simultaneous transmission in both bands is to be accomplished where category name C applies), wireless transmission output in the 5 GHz band (only when wireless transmission solely in the 5 GHz band or simultaneous transmission in both bands is to be accomplished where category name C applies), energy consumption efficiency, and manufacturer's name. |
| Place of Display | Locations that can be readily seen in catalogs with performance indications and documents provided by the manufacturer for selecting equipment. |
| Target Requirements of Recommendations and Orders | Manufacturers or importers whose manufacturing volume or importing volume (limited to shipment to the domestic market) is 2,500 units or more. |

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7.23 Switching Units(1)

Target Scope

Switching units (devices for transmitting and receiving telecommunication signals (limited to ones dedicated to Internet use), which have a function, in transmitting telecommunication signals, to transmit the telecommunication signals over the route uniquely prescribed for each destination out of two or more routes over which the pertinent device can transmit), except the following:

- 1) ones having a function to perform wireless communication (L2 switches with wireless capability),
- 2) ones which neither transmit nor exchange Ethernet frames,
- 3) ones which transmit and exchange packets of Internet Protocol,
- 4) ones of whose connection ports for transmitting/receiving telecommunication signals a half or a majority use two-wire connection system (a half or a majority do not conform to the IEEE 802.3 standard),
- 5) ones designed to permit incorporation into a casing, computer or the like (such as chassis type),
- 6) ones to control devices for wireless relaying of telecommunication signals, or
- 7) ones mainly intended for supplying electric power, having a maximum PoE supply capacity of more than 16 times the power consumption of the L2 switch circuit.

Energy Consumption Efficiency

Energy consumption efficiency shall be expressed in the quotient of dividing power consumption (wattage) by the highest effective transmission velocity (gigabits/second).

Category, Target Values

In the target fiscal year and each subsequent fiscal year, energy consumption in each category shall be at or smaller than the target standard value.

| Category | | | | Calculation formula of standard energy consumption efficiency |
|-------------------------------------|---|---------------------------------------|---------------|---|
| With or without management function | Type of management function | With or without IP filtering function | Category name | |
| With | Having SNMP function | With | A | $E=(\alpha_A+P_A) / T$ |
| | | Without | B | $E=(\alpha_B+P_B) / T$ |
| | Having Web management and/or other function | | C | $E=(\alpha_C+P_C) / T$ |
| Without | | | D | $E=(\alpha_D+P_D) / T$ |

Remarks :1. “Management function” refers to the function enabling a person managing a network to acquire information regarding hardware constituting the network, situation of communication and the like in order to efficiently administer the network.

2. E represents the value of standard energy consumption efficiency (in watts/gigabit per second).

3. The values of α_A , α_B , α_C and α_D shall be calculated by the following formulas, respectively.

$$\alpha_A = 0.578 \times X_1 + 1.88 \times X_2 + 15.9 \times X_3 + \beta_A$$

$$\alpha_B = 0.375 \times X_1 + 1.88 \times X_2 + \beta_B$$

$$\alpha_C = 0.375 \times X_1 + 1.133 \times X_2 + \beta_C$$

$$\alpha_D = 0.272 \times X_1 + 1.133 \times X_2 + \beta_D$$

Where the switching unit has only a port or ports of 100 megabits/second or has ports of 100 megabits per second and 1 gigabit per second and the values of α_A , α_B , α_C and α_D are less than 3 each, the values of α_A , α_B , α_C and α_D shall be deemed to be 3. Or where the unit has only a port or ports of 1 gigabit per second and the values of α_A , α_B , α_C and α_D are less than 4.5 each, the values of α_A , α_B , α_C and α_D shall be deemed to be 4.5.

4. The value of X_1 shall be the number of ports whose line velocity is 100 megabits per second, that of X_2 , the number of ports whose line velocity is 1 gigabit per second, and that of X_3 , the number of ports whose line velocity is 10 gigabit per second.

5. The values of β_A , β_B , β_C and β_D shall be as stated in the respectively corresponding columns and lines in the following table.

| Category | β_A | β_B | β_C | β_D |
|--|-----------|-----------|-----------|-----------|
| Having only a port or ports of 100 Mb/sec | 3.976 | 3.4 | 3.4 | 0.824 |
| Having only a port or ports of 1 Gb/sec | 9.94 | -5.07 | -2.074 | -2.074 |
| Having only a port or ports of 10 Gb/sec | 0 | 0 | 0 | 0 |
| Having a port or ports of 100 Mb/sec and 1 port of 1 GB/sec | 2.276 | 1.7 | 2.447 | 1.494 |
| Having a port or ports of 100 Mb/sec and 2 or more ports of 1 GB/sec | 0.576 | 0 | 1.494 | 1.494 |
| Having a port or ports of 1 Gb/sec and a port or ports of 10 GB/sec | -10.24 | 0 | 0 | 0 |

7.23 Switching Units(2)

Remarks :6. The values of P_A , P_B , P_C and P_D shall be calculated by the following formulas, respectively.

$$P_A = (0.0347 \times P_d / P_{SA}) / (1 - 0.0347 \times P_d / P_{SA}) \times \alpha_A$$

$$P_B = (0.0347 \times P_d / P_{SB}) / (1 - 0.0347 \times P_d / P_{SB}) \times \alpha_B$$

$$P_C = (0.0347 \times P_d / P_{SC}) / (1 - 0.0347 \times P_d / P_{SC}) \times \alpha_C$$

$$P_D = (0.0347 \times P_d / P_{SD}) / (1 - 0.0347 \times P_d / P_{SD}) \times \alpha_D$$

7. The values of P_{SA} , P_{SB} , P_{SC} and P_{SD} shall be calculated by the following formulas, respectively.

$$P_{SA} = \alpha_A \times 0.85 + 1$$

$$P_{SB} = \alpha_B \times 0.85 + 1$$

$$P_{SC} = \alpha_C \times 0.85 + 1$$

$$P_{SD} = \alpha_D \times 0.85 + 1$$

8. P_d shall represent the value of the maximum power supply (in watts) of power over Ethernet, and it shall be 0 where the function of power over Ethernet is absent.

9. T shall represent the value of the highest effective transmission velocity (in gigabits/second) where the frame length is 1518 bytes.

| | |
|--|---|
| Target Fiscal Year | FY 2011 and each subsequent fiscal year |
| Energy Saving Effects | Efficiency was improved by about 53.8% over the FY 2006 level by the target year (FY 2011). |
| Display Items | Product name and type, category name, line velocities of ports at the time of measurement and the number of ports for each different line velocity, highest effective transmission velocity (unit: gigabits/second) where the frame length is 1518 bytes, maximum power supply (only for ones having power over Ethernet function) , energy consumption efficiency, and manufacturer's name |
| Place of Display | Locations that can be readily seen in catalogs with performance indications and documents provided by the manufacturer for selecting equipment. |
| Target Requirements of Recommendations and Orders | Manufacturers or importers whose manufacturing volume or importing volume (limited to shipment to the domestic market) is 1,500 units or more. |

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7.24 Multifunction Devices

Target Scope

Multifunction devices (devices comprising one or more printing, facsimile, and scanning functions in addition to a copying function, and machines comprising one or more copying, facsimile, and scanning functions in addition to a printing function (limited to dry process, indirect electrostatic machines)), except the following:

- 1) ones capable of output onto A2 or larger paper,
- 2) ones which are not structured with a rated input voltage of 100 V,
- 3) ones which are structured without a copyholder,
- 4) monochrome multifunction devices which are structured to be capable of copying or printing 86 sheets or more per minute,
- 5) color multifunction devices which are structured to be capable of copying or printing 61 monochrome sheets or more per minute,
- 6) monochrome multifunction devices which are not structured to be capable of copying or printing 13 sheets or more per minute,
- 7) non-digital ones, or
- 8) ones with a built-in digital front end (computers designed for multifunction devices used for dedicated enhanced image processing).

Energy Consumption Efficiency

Energy consumption efficiency shall be expressed as the annual power consumption (kWh/year) obtained from the power consumption per week (Wh/week).

Category, Target Values

In the target fiscal year and each subsequent fiscal year, energy consumption in each category shall not be above the target standard value.

| Category | | | Calculation formula of standard energy consumption efficiency |
|---------------|--|--------------------------------|---|
| Category name | Color copying or color printing function | Copying or printing speed | |
| a | Y | Less than 43 sheets per minute | $E_k = 2.17X + 125$ |
| b | | 43 sheets or more per minute | $E_k = 8.48X - 140$ |
| c | N | Less than 50 sheets per minute | $E_k = 4.86X - 30$ |
| d | | 50 sheets or more per minute | $E_k = 8.72X - 223$ |

Remarks : 1. "Copying or printing speed" refers to the number of plain A4 paper sheets copied or printed per minute consecutively in monochrome.

2. E_k and X indicates the following numeric values:

E_k : Standard energy consumption efficiency (unit: kWh/year)

X : Copying or printing speed (where the value of the lower limit is used for machines with a copying or printing speed below the lower limit).

Lower limit: Category c: 22 ipm (unit: minutes per image)

Target Fiscal Year

FY 2017 and each subsequent fiscal year

Energy Saving Effects

Efficiency is expected to be improved by 46.8% over the FY 2007 level by the target year (FY 2017).

Display Items

Product name and type, category name, copying and printing speed, energy consumption efficiency, and manufacturer's name

Place of Display

Locations that can be readily seen in catalogs and instruction manuals that include performance indications.

Target Requirements of Recommendations and Orders

Manufacturers or importers whose manufacturing volume or importing volume (limited to shipment to the domestic market) is 500 units or more.



7.25 Printers

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Target Scope

Printers (dry process, indirect electrostatic printers), except the following:
 1) ones capable of output onto A2 or larger paper, 2) ones which are not structured with a rated input voltage of 100 V,
 3) monochrome printers which are structured to be capable of printing 86 sheets or more per minute,
 4) color printers which are structured to be capable of printing 61 sheets or more per minute,
 5) ones which are not structured to be capable of printing 13 or more sheets per minute in monochrome,
 6) non-digital ones, or
 7) ones with a built-in digital front end for copiers (computers designed for copiers used for dedicated enhanced image processing).

Energy Consumption Efficiency

Energy consumption efficiency shall be expressed as the annual power consumption (kWh/year) obtained from the power consumption per week (Wh/week).

Category, Target Values

In the target fiscal year and each subsequent fiscal year, energy consumption in each category shall not be above the target standard value.

| Category name | Category | | Calculation formula of standard energy consumption efficiency |
|---------------|-------------------------|--------------------------------|---|
| | Color printing function | Printing speed | |
| A | Y | Less than 43 sheets per minute | $E_k=5.34X-14$ |
| B | | 43 sheets or more per minute | $E_k=8.48X-146$ |
| C | N | Less than 50 sheets per minute | $E_k=4.07X-15$ |
| D | | 50 sheets or more per minute | $E_k=8.72X-247$ |

Remarks :1. "Printing speed" refers to the maximum number of plain A4 paper sheets printed per minute in monochrome consecutively.
 2. E_k and X indicates the following numeric values:
 E_k : Standard energy consumption efficiency (unit: kWh/year)
 X : Printing speed (where the lower limit is used for printers with a printing speed below the lower limit)
 Lower limit:Category A: 22 ipm (unit: minutes per image)
 Category C: 16 ipm (unit: minutes per image)

Target Fiscal Year

FY 2017 and each subsequent fiscal year

Energy Saving Effects

Efficiency is expected to be improved by 41.6% over the FY 2007 level by the target year (FY 2017).

Display Items

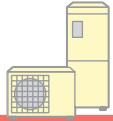
Product name and type, category name, printing speed, energy consumption efficiency, and manufacturer's name

Place of Display

Locations that can be readily seen in catalogs and instruction manuals that include performance indications.

Target Requirements of Recommendations and Orders

Manufacturers or importers whose manufacturing volume or importing volume (limited to shipment to the domestic market) is 700 units or more.



7.26 Electric Water Heaters (1)

(Heat Pump Water Type Supply Systems)

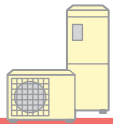
Target Scope Electric water heaters (limited to those that use heat pump (limited to those that use carbon dioxide as a refrigerant)), except the following:
1) ones for heating, or 2) ones for commercial use.

Energy Consumption Efficiency Energy consumption efficiency is the ratio of the heating amount (MJ) per unit time imparted to the circulated water to the amount of power consumption (kWh) when operated by a heat pump, the annual water heating and retaining efficiency for those with a bathtub water reheating function, and the annual water heating efficiency for those without a bathtub water reheating function. The measurement method is in accordance with the method specified in JIS C 9220 (2011).

Category, Target Values In the target fiscal year and each subsequent fiscal year, energy consumption efficiency in each category shall not be below the target standard value.

| Category name | Designated household | Category | | | | Standard energy consumption efficiency |
|---------------|----------------------|--|-------------------------------------|--------------------|-------------------------|--|
| | | Storage capacity | Specifications | Reheating function | Number of storage tanks | |
| 1 | Standard | Less than 240 liters | Except cold district specifications | Y | One | 2.8 |
| 2 | | | | Multiple | 2.4 | |
| 3 | | | | N | One | 3.0 |
| 4 | | | | Multiple | 2.6 | |
| 5 | | | With cold district specifications | Y | One | 2.3 |
| 6 | | | | Multiple | 2.0 | |
| 7 | | | | N | One | 2.6 |
| 8 | | | | Multiple | 2.3 | |
| 9 | | 240 liters or more Less than 320 liters | Except cold district specifications | Y | One | 2.8 |
| 10 | | | | Multiple | 2.8 | |
| 11 | | | | N | One | 3.2 |
| 12 | | | | Multiple | 2.8 | |
| 13 | | | With cold district specifications | Y | One | 2.3 |
| 14 | | | | Multiple | 2.0 | |
| 15 | | | | N | One | 2.7 |
| 16 | | | | Multiple | 2.3 | |
| 17 | | 320 liters or more Less than 550 liters | Except cold district specifications | Y | One | 3.3 |
| 18 | | | | Multiple | 2.8 | |
| 19 | | | | N | One | 3.2 |
| 20 | | | | Multiple | 2.8 | |
| 21 | | | With cold district specifications | Y | One | 2.7 |
| 22 | | | | Multiple | 2.3 | |
| 23 | | | | N | One | 2.7 |
| 24 | | | | Multiple | 2.3 | |
| 25 | | 550 liters or more | Except cold district specifications | Y | One | 2.9 |
| 26 | | | | Multiple | 2.5 | |
| 27 | | | | N | One | 2.9 |
| 28 | | | | Multiple | 2.5 | |
| 29 | | | With cold district specifications | Y | One | 2.4 |
| 30 | | | | Multiple | 2.1 | |
| 31 | | | | N | One | 2.5 |
| 32 | | | | Multiple | 2.2 | |
| 33 | Small family | — | Y | — | 2.4 | |
| 34 | | | N | — | 2.8 | |
| 35 | | With cold district specifications | Y | — | 2.0 | |
| 36 | | | N | — | 2.4 | |

- Remarks : 1. “Storage capacity” refers to the capacity of a tank capable of storing hot water specified in JIS C 9220 (2011) “Residential Heat Pump Water Heaters.”
2. “Cold district specifications” refers to specifications that assume use in a region that is severely cold in winter, specified in JIS C 9220 (2011).
3. “Reheating function” refers to a function that circulates and heats bathtub water.

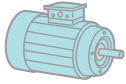


7.26 Electric Water Heaters (2)

(Heat Pump Water Type Supply Systems)

| | |
|--|--|
| Target Fiscal Year | FY 2017 and each subsequent fiscal year |
| Energy Saving Effects | Efficiency is expected to be improved by 27% over the FY 2009 level by the target year (FY 2017). |
| Display Items | Product name and type, category name, energy consumption efficiency, and manufacturer's name |
| Place of Display | Locations that can be readily seen in catalogs and instruction manuals that include performance indications. |
| Target Requirements of Recommendations and Orders | Manufacturers or importers whose manufacturing volume or importing volume (limited to shipment to the domestic market) is 500 units or more. |

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7.27 AC Motors (1)

Target Scope

AC motors (limited to three-phase, cage-induction motors).

This Regulation shall not apply to:

- 1) motors specifically designed to operate in potentially explosive atmospheres;
- 2) motors which does not satisfy all of the following conditions from a to g:
 - a. have a rated frequency or a base frequency of 50Hz \pm 5%, 60Hz \pm 5%, or compatible with both 50Hz \pm 5% and 60Hz \pm 5%;
 - b. have a single speed;
 - c. have a rated voltage of 1,000 V or less;
 - d. have a rated output from 0.75 kW or more to 375 kW or less;
 - e. have either 2, 4, or 6 poles;
 - f. are rated on the basis of either duty type S1 (continuous duty) or S3 (intermittent periodic duty) with a rated cyclic duty factor of 80% or higher, specified in JIS C 4034-30 (2011);
 - g. are driven by a commercial power supply (capable of continuous operating direct on-line);
- 3) motors integrated into a product (excluding models for export), for which the energy consumption efficiency cannot be measured independently from the product, as a designated energy-consuming device as defined in Article 80 Item 1 Section a;
- 4) motors which have a thermal class specified in JIS C 4003 (2010) of 180 (H), 200 (N), 220 (R), or 250;
- 5) motors which have a delta-star starting system;
- 6) motors designed for vessels or ocean structures (floating facilities for production, storage or loading of oil, oil platforms, etc.);
- 7) motors designed to operate wholly immersed in liquid;
- 8) motors whose difference ratio between the synchronous speed and the rotational speed of the rotor is either (a) or (b) of the following conditions:
 - a. 5% or more in a case where the output is 0.75 kW or more and 110 kW or less;
 - b. 3% or more in a case where the output is over 110 kW and 375 kW or less;
- 9) motors designed for gates of dams or flood gates;
- 10) motors whose stators and rotors are covered with metal materials (Canned motors);
- 11) motors designed for extremely low ambient air temperatures (ambient air temperatures are less than -20 °C);
- 12) motors made solely for inverter driving, those of external fan cooling types;
- 13) motors manufactured for incorporation in products for exportation.

Energy Consumption Efficiency

A numeric value (%) obtained by dividing output (input - total loss) by input (W) using the numeric value measured by the method stipulated in JIS C 4034-2-1.

Category, Target Values

In the target fiscal year and each subsequent fiscal year, energy consumption efficiency in each category shall not be below the target standard value.

Table 1 Standard Energy Consumption Efficiency in Each Category

| Category name | Category | | Standard energy consumption efficiency |
|---------------|-----------------------------------|--|--|
| | Rated frequency or base frequency | Rated output | |
| 1 | 60Hz | 0.75 kW or more and less than 0.925 kW | 85.5 |
| 2 | | 0.925 kW or more and less than 1.85 kW | 86.5 |
| 3 | | 1.85 kW or more and less than 4.6 kW | 89.5 |
| 4 | | 4.6 kW or more and less than 9.25 kW | 91.7 |
| 5 | | 9.25 kW or more and less than 13 kW | 92.4 |
| 6 | | 13 kW or more and less than 16.75 kW | 93.0 |
| 7 | | 16.75 kW or more and less than 26 kW | 93.6 |
| 8 | | 26 kW or more and less than 33.5 kW | 94.1 |
| 9 | | 33.5 kW or more and less than 41 kW | 94.5 |
| 10 | | 41 kW or more and less than 50 kW | 95.0 |
| 11 | | 50 kW or more and less than 100 kW | 95.4 |
| 12 | | 100 kW or more and less than 130 kW | 95.8 |
| 13 | | 130 kW or more and 375 kW or less | 96.2 |
| 14 | 50Hz | 0.75 kW | 82.5 |
| 15 | | 1.1 kW | 84.1 |
| 16 | | 1.5 kW | 85.3 |
| 17 | | 2.2 kW | 86.7 |
| 18 | | 3 kW | 87.7 |
| 19 | | 4 kW | 88.6 |



7.27 AC Motors (2)

Table 1 Standard Energy Consumption Efficiency in Each Category

| Category name | Rated frequency or base frequency | Category | |
|---------------|-----------------------------------|-----------------------------------|--|
| | | Rated output | Standard energy consumption efficiency |
| 20 | 50Hz | 5.5 kW | 89.6 |
| 21 | | 7.5 kW | 90.4 |
| 22 | | 11 kW | 91.4 |
| 23 | | 15 kW | 92.1 |
| 24 | | 18.5 kW | 92.6 |
| 25 | | 22 kW | 93.0 |
| 26 | | 30 kW | 93.6 |
| 27 | | 37 kW | 93.9 |
| 28 | | 45 kW | 94.2 |
| 29 | | 55 kW | 94.6 |
| 30 | | 75 kW | 95.0 |
| 31 | | 90 kW | 95.2 |
| 32 | | 110 kW | 95.4 |
| 33 | | 132 kW | 95.6 |
| 34 | | 160 kW | 95.8 |
| 35 | | 200 kW or more and 375 kW or less | 96.0 |
| 36 | | Other | Refer to Remarks 2. |

Remarks : 1. The evaluation is made using the numeric value obtained by multiplying the coefficients a to f set forth in Table 2 and Table 3 by the energy consumption efficiency obtained by measurement, respectively, and rounding to the nearest tenth.

For outputs other than the rated outputs set forth in Table 2 (60Hz), if the output in question is equal to or higher than the middle point between two of the rated outputs set forth in Table 2 which are one class higher and lower than the output in question, the coefficients a to c of the lower rated output shall be used.

Table 2 Coefficient of Each Output of 60Hz

| Rated output [Kilowatts] | 2 poles | 4 poles | 6 poles |
|--------------------------|---------------|---------------|---------------|
| | Coefficient a | Coefficient b | Coefficient c |
| 0.75 | 1.1104 | 1.0000 | 1.0364 |
| 1.1 | 1.0298 | 1.0000 | 0.9886 |
| 1.5 | 1.0117 | 1.0000 | 0.9774 |
| 2.2 | 1.0347 | 1.0000 | 1.0000 |
| 3.7 | 1.0113 | 1.0000 | 1.0000 |
| 5.5 | 1.0246 | 1.0000 | 1.0077 |
| 7.5 | 1.0166 | 1.0000 | 1.0077 |
| 11 | 1.0154 | 1.0000 | 1.0076 |
| 15 | 1.0220 | 1.0000 | 1.0142 |
| 18.5 | 1.0207 | 1.0000 | 1.0065 |
| 22 | 1.0207 | 1.0000 | 1.0065 |
| 30 | 1.0184 | 1.0000 | 1.0000 |
| 37 | 1.0161 | 1.0000 | 1.0043 |
| 45 | 1.0150 | 1.0000 | 1.0053 |
| 55 | 1.0192 | 1.0000 | 1.0095 |
| 75 | 1.0138 | 1.0000 | 1.0042 |
| 90 | 1.0042 | 1.0000 | 1.0042 |
| 110 | 1.0084 | 1.0000 | 1.0000 |
| 150 | 1.0084 | 1.0000 | 1.0042 |
| 185~375 | 1.0042 | 1.0000 | 1.0042 |

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Overview of the Top Runner Program

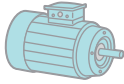
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7.27 AC Motors (3)

Table 3 Coefficient of Each Output of 50Hz

| Rated output [Kilowatts] | 2 poles | 4 poles | 6 poles |
|-----------------------------|---------------|---------------|---------------|
| | Coefficient d | Coefficient e | Coefficient f |
| 0.75 | 1.0223 | 1.0000 | 1.0456 |
| 1.1 | 1.0169 | 1.0000 | 1.0383 |
| 1.5 | 1.0131 | 1.0000 | 1.0339 |
| 2.2 | 1.0093 | 1.0000 | 1.0285 |
| 3 | 1.0069 | 1.0000 | 1.0245 |
| 4 | 1.0057 | 1.0000 | 1.0207 |
| 5.5 | 1.0045 | 1.0000 | 1.0182 |
| 7.5 | 1.0033 | 1.0000 | 1.0146 |
| 11 | 1.0022 | 1.0000 | 1.0122 |
| 15 | 1.0022 | 1.0000 | 1.0099 |
| 18.5 | 1.0022 | 1.0000 | 1.0098 |
| 22 | 1.0032 | 1.0000 | 1.0087 |
| 30 | 1.0032 | 1.0000 | 1.0075 |
| 37 | 1.0021 | 1.0000 | 1.0064 |
| 45 | 1.0021 | 1.0000 | 1.0053 |
| 55 | 1.0032 | 1.0000 | 1.0053 |
| 75 | 1.0032 | 1.0000 | 1.0042 |
| 90 | 1.0021 | 1.0000 | 1.0032 |
| 110 | 1.0021 | 1.0000 | 1.0032 |
| 132 | 1.0021 | 1.0000 | 1.0021 |
| 160 | 1.0021 | 1.0000 | 1.0021 |
| 200~375 | 1.0021 | 1.0000 | 1.0021 |

Remarks: 2. The standard energy consumption efficiency E of Category 36 set forth in Table 1 shall be calculated using the following formula.

$$E = A_0 \times (\log_{10}(PN/PC))^3 + B_0 \times (\log_{10}(PN/PC))^2 + C_0 \times \log_{10}(PN/PC) + D_0$$

Here, E: Standard energy consumption efficiency (unit: percent)

PN: Rated output (unit: kilowatts)

PC: 1 (unit: kilowatts)

A₀: 0.0773, B₀: -1.8951, C₀: 9.2984, D₀: 83.7025 (interpolation coefficients)

However, for those whose number of poles is 2 poles and 6 poles, the evaluation shall be made using the value calculated by multiplying the energy consumption efficiency obtained by measurement by coefficient g in the case of 2 poles, and by coefficient h in the case of 6 poles (rounding to the nearest tenth).

$$\text{Coefficient } g = (A_0 \times (\log_{10}(PN/PC))^3 + B_0 \times (\log_{10}(PN/PC))^2 + C_0 \times \log_{10}(PN/PC) + D_0) / (A_1 \times (\log_{10}(PN/PC))^3 + B_1 \times (\log_{10}(PN/PC))^2 + C_1 \times \log_{10}(PN/PC) + D_1)$$

Here, PN: Rated output (unit: kilowatts)

PC: 1 (unit: kilowatts)

A₁: 0.3569, B₁: -3.3076, C₁: 11.6108, D₁: 82.2503 (interpolation coefficients)

$$\text{Coefficient } h = (A_0 \times (\log_{10}(PN/PC))^3 + B_0 \times (\log_{10}(PN/PC))^2 + C_0 \times \log_{10}(PN/PC) + D_0) / (A_2 \times (\log_{10}(PN/PC))^3 + B_2 \times (\log_{10}(PN/PC))^2 + C_2 \times \log_{10}(PN/PC) + D_2)$$

Here, PN: Rated output (unit: kilowatts)

PC: 1 (unit: kilowatts)

A₂: 0.1252, B₂: -2.6130, C₂: 11.9963, D₂: 80.4769 (interpolation coefficients)

Remarks: 3. If shipment includes 3 ratings (6 ratings), for 200 V / 60Hz (400 V / 60Hz), the evaluation shall be made using the value obtained by multiplying the energy consumption efficiency obtained by measurement by each of the coefficients i to k set forth in Table 4, and rounding to the nearest tenth.

For outputs other than the rated outputs set forth in Table 4 (60Hz), if the output in question is equal to or higher than the middle point between two of the rated outputs set forth in Table 4 which are one class higher and lower than the output in question, the coefficients i to k of the lower rated output shall be used.

The 3 ratings and 6 ratings are defined as follows:

3 ratings: 200 V / 50Hz, 200 V / 60Hz, 220 V / 60Hz, or 400 V / 50Hz, 400 V / 60Hz, 440 V / 60Hz

6 ratings: 200 V / 50Hz, 200 V / 60Hz, 220 V / 60Hz, 400 V / 50Hz, 400 V / 60Hz, and 440 V / 60Hz



7.27 AC Motors (4)

Table 4 Coefficient by Rated Output of 3 Ratings (6 Ratings)

| Rated output [Kilowatts] | 2 poles | 4 poles | 6 poles |
|-----------------------------|---------------|---------------|---------------|
| | Coefficient i | Coefficient j | Coefficient k |
| 0.75 | 1.1325 | 1.0130 | 1.0452 |
| 1.1 | 1.0485 | 1.0188 | 1.0023 |
| 1.5 | 1.0298 | 1.0188 | 0.9908 |
| 2.2 | 1.0468 | 1.0147 | 1.0170 |
| 3.7 | 1.0229 | 1.0147 | 1.0170 |
| 5.5 | 1.0362 | 1.0099 | 1.0246 |
| 7.5 | 1.0246 | 1.0099 | 1.0246 |
| 11 | 1.0244 | 1.0109 | 1.0221 |
| 15 | 1.0310 | 1.0142 | 1.0288 |
| 18.5 | 1.0286 | 1.0119 | 1.0207 |
| 22 | 1.0286 | 1.0119 | 1.0207 |
| 30 | 1.0262 | 1.0107 | 1.0107 |
| 37 | 1.0227 | 1.0107 | 1.0150 |
| 45 | 1.0215 | 1.0106 | 1.0128 |
| 55 | 1.0258 | 1.0032 | 1.0171 |
| 75 | 1.0192 | 1.0032 | 1.0117 |
| 90 | 1.0095 | 1.0032 | 1.0117 |
| 110 | 1.0138 | 1.0042 | 1.0074 |
| 150 | 1.0126 | 1.0042 | 1.0116 |
| 185~375 | 1.0084 | 1.0042 | 1.0116 |

Remarks: 4. In regards to the number of units shipped by each business operator, if the shipment includes the 3 ratings (6 ratings) set forth in Remarks 3, the quantity ratios set forth in Table 5 shall be used to find the quantity of each rating. In the calculation, the first place after the decimal point is rounded off to obtain an integer value and, if it is necessary to adjust the fractional quantity, the adjustment shall be made by the rating whose quantity ratio is highest.

Table 5 Quantity Ratio of Each Voltage and Frequency of 3 Ratings (6 Ratings)

(1) 3 ratings of 200 V and 220 V

| Rated voltage | 200V | | 220V |
|-----------------|------|------|------|
| Rated frequency | 50Hz | 60Hz | |
| Quantity ratiot | 50% | 30% | 20% |

(2) 3 ratings of 400 V and 440 V

| Rated voltage | 400V | | 440V |
|-----------------|------|------|------|
| Rated frequency | 50Hz | 60Hz | |
| Quantity ratiot | 50% | 30% | 20% |

(3) 6 ratings of 200 V, 220 V, 400 V, and 440 V

| Rated voltage | 200V | | 220V | 400V | | 440V |
|-----------------|------|------|------|------|------|------|
| Rated frequency | 50Hz | 60Hz | | 50Hz | 60Hz | |
| Quantity ratiot | 40% | 25% | 10% | 10% | 5% | 10% |

Target Fiscal Year

FY 2015 and each subsequent fiscal year

Energy Saving Effects

Efficiency is expected to be improved by about 7.4% over the FY 2010 level by the target year (FY 2015).

Display Items

Product name, rated output, number of poles, rated voltage, rated frequency or base frequency, category of usage, energy consumption efficiency, efficiency class, and manufacturer's name

Place of Display

Location that can be readily seen on the main body of the motor, and locations that can be readily seen in catalogs with performance indications or in documents provided by the manufacturer for selecting equipment

Target Requirements of Recommendations and Orders

Manufacturers or importers whose manufacturing volume or importing volume (limited to shipment to the domestic market) is 1,500 units or more.

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7.28 Self-ballasted LED Lamps

Target Scope

Self-ballasted LED lamps, except the following:
 1) ones with a rated voltage of 50 V or less,
 2) ones for which the code representing the category and shape specified in JIS C 8158 (2012) is not "Type A (LDA),"
 3) ones for which the average color rendering index(CRI) specified in JIS Z 8726 (1990) is 90 or higher,
 4) ones comprising a function for dimming the luminous flux.

Energy Consumption Efficiency

The energy consumption efficiency is the value obtained by dividing the total luminous flux (lm) measured by the method stipulated in (a) by the power consumption (W) measured by the method stipulated in (b).
 (a) Total luminous flux measurement method
 Measured by the method stipulated in JIS C 7801 (2012).
 (b) Power consumption measurement method
 Measured by the method stipulated in JIS C 8157 (2011).

Category, Target Values

In the target fiscal year and each subsequent fiscal year, energy consumption efficiency in each category shall not be below the target standard value.

| Category name | Category | Standard energy consumption efficiency |
|---------------|--------------------------------|--|
| | Light source color | |
| 1 | Daylight, neutral white, white | 110.0 |
| 2 | Warm light, lamp color | 98.6 |

Target Fiscal Year

FY 2017 and each subsequent fiscal year

Energy Saving Effects

Efficacy is expected to be improved by about 50.8% over the FY 2011 level by the target year (FY 2017).

Display Items

Product name or type, category name, total luminous flux, power consumption, energy consumption efficiency, light source color, manufacturer's name, manufactured month/year or lot number, the fact of total luminous flux and power consumption^{※1} measured by JNLA accredited testing laboratory ^{※2}

- ※1 These items should be marked on the package as follows (the numeric values are merely examples).
- ※2 The JNLA accredited testing laboratory refers to a laboratory that is registered based on the provisions of the Japan Industrial Standardization Act (Law No. 185 enacted in 1949), Article 57, Clause 1 and Article 65, Clause 1.

Total luminous flux 75lm (※)
 Power consumption 8W (※)

JNLA accredited testing laboratory (000000JP) test
 (※) Refer to the instruction manual or catalog.

- An asterisk(※) is shown next to the total luminous flux and power consumption.
- "000000JP": Registration number of accredited testing laboratory who performed the measurement.
- Writing manner of instruction manual and catalog. Example:
 "These rated values are indicated under our responsibility based on test result(s) by a JNLA accredited testing laboratory."

Place of Display

Catalogs or documents provided by the manufacturer for selecting equipment: All display items except manufactured month/year or lot number
 Packaging and instruction manuals:Product name and type, category name, total luminous flux, power consumption, the fact of total luminous flux and power consumption measured by JNLA accredited testing laboratory
 Main body of product:Manufactured month/year or lot number

Target Requirements of Recommendations and Orders

Manufacturers or importers whose manufacturing volume or importing volume (limited to shipment to the domestic market) is 25,000 units or more.



7.29 Insulation Materials

Target Scope

Insulation materials (limited to those that use extruded polystyrene foam, glass fiber (including glass wool; the same applies hereinafter) slag wool, or rock wool), except the following:
 1) Vacuum insulation material, 2) blow-in insulation material that uses glass fiber, slag wool, or rock wool, or 3) insulation material that uses glass fiber and also has a density of at least 24 kg/m³

Heat loss prevention performance

Thermal conductivity (W/(m·K)) obtained by the measurement method specified in JIS A 9521 (2014).

Category, Target Values

In the target fiscal year and each subsequent fiscal year, heat loss prevention performance in each category shall not be above the target standard value.

| Category | Category name | Standard heat loss prevention performance |
|---|---|---|
| Insulation material that uses extruded polystyrene foam | Extruded polystyrene foam insulation material | 0.03232 |
| Insulation material that uses glass fiber | Glass wool insulation material | 0.04156 |
| Insulation material that uses slag wool or rock wool | Rock wool insulation material | 0.03781 |

Target Fiscal Year

FY 2022 and each subsequent fiscal year

Energy Saving Effects

Comparison with FY 2012 level by target year (FY 2022)
 Performance is expected to be improved by 6.19% for extruded polystyrene foam insulation material.
 Performance is expected to be improved by 6.04% for glass wool insulation material.
 Performance is expected to be improved by 0.50% for rock wool insulation material.

Display Items

Enforced as of July 1, 2015
 Product name or type, category name, heat loss prevention performance, and manufacturer's name

Place of Display

Location that can be readily seen on the insulation material (including packaging), and locations that can be readily seen on catalogs with performance indications or on documents provided by the manufacturer selecting insulation material.

Target Requirements of Recommendations and Orders

Manufacturers, producers or importers whose manufacturing volume or importing volume (limited to shipment to the domestic market) is 180,000 m² or more.

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7.30 Sashes

Target Scope

Sashes, except the following:

- 1) ones made of iron or wood, 2) ones not used for single hung and double hung windows, single sliding windows, double sliding windows, separate sliding windows and single-sliding double windows, fixed windows, outward projecting windows, and vertical projected windows (excluding bay windows for each), 3) ones which are structured to be integrated with storm shutters, sliding shutters or bars, 4) ones which are structured for installation to an outer wall by being welded to the outer wall and being embedded in a cavity that contacts the outer wall via mortar, 5) ones which are not structured for waterproofing using waterproof paper, or 6) ones which serve as a safeguard against fire as defined in the Building Standards Act (Law No. 201, 1950), Article 2-9-2(ii).

Heat loss prevention performance

The numeric value (W/K) obtained by multiplying the heat transmission coefficient (W/(m²·K)) found by the method specified in JIS A 4710 (2004) or JIS A 2102 (2011), using the window glass and sash specifications defined for each sash type by the window surface area (m²) constituting the sash.

Category, Target Values

In the target fiscal year and each subsequent fiscal year, heat loss prevention performance in each category shall not be above the target standard value.

| Category | Category name | Calculation formula of standard heat loss prevention performance |
|--|--------------------|--|
| Sash used in single hung and double hung window | Single hung | $q=2.54S^{0.79}+1.02S^{0.88}+0.12S^{1.06}$ |
| Sash used in single sliding window, double sliding window, separate sliding window, and single-sliding double window | Double sliding | $q=2.21S^{0.91}+1.38S^{0.94}+0.14S^{0.99}$ |
| Sash used in fixed window | Fix | $q=1.71S^{0.89}+1.27S^{0.97}+0.28S^{1.03}$ |
| Sash used in outward projecting window | Outward projecting | $q=1.71S^{0.86}+1.30S^{0.92}+0.40S^{1.08}$ |
| Sash used in vertical projected window | Vertical projected | $q=1.49S^{0.77}+1.56S^{0.87}+0.37S^{1.12}$ |

Remarks: S is the surface area (unit: m²) of the window constituting the sash.

Target Fiscal Year

FY 2022 and each subsequent fiscal year

Energy Saving Effects

Comparison with FY 2012 level by target year (FY 2022)

- Performance is expected to be improved by 6.40% for single hung.
- Performance is expected to be improved by 15.49% for double sliding.
- Performance is expected to be improved by 7.81% for fix.
- Performance is expected to be improved by 3.04% for outward projecting.
- Performance is expected to be improved by 6.94% for vertical projected.
- ※ Estimated based on the typical sash size.

Display Items

Enforced as of March 1, 2017

Product name or type, category name, heat loss prevention performance, and manufacturer's name

Place of Display

Locations that can be readily seen in catalogs with performance indications or documents provided by the manufacturer for selecting sashes

Target Requirements of Recommendations and Orders

Manufacturers, producers or importers whose manufacturing volume or importing volume (limited to shipment to the domestic market) is 94,000 windows or more.



7.31 Multi-Paned Glazing

Target Scope

Multi-paned glazing, except the following:
1) ones using stained glass, 2) ones for which the total sum of the thicknesses of the glazing that constitute the multi-paned glazing exceeds 1 cm, or 3) heat reflecting glazing specified in JIS R 3221 (2002).

Heat loss prevention performance

The heat transmission coefficient ($W/(m^2 \cdot K)$) found by the method specified in JIS R 3107 (1998)*.
* A separate method is established for multi-paned glazing that uses vacuum glazing.

Category, Target Values

In the target fiscal year and each subsequent fiscal year, heat loss prevention performance shall not be above the target standard value.

| Thickness of layer | Standard heat loss prevention performance or the calculation formula thereof |
|--------------------------------|--|
| Less than 2 mm | 3.85 |
| 2 mm or more and 16 mm or less | $U = -1.00 \ln(X) + 4.55$ |
| Over 16 mm | 1.77 |

Remarks : 1. "Thickness of layer" is the distance of the space that occurs between the paned glazing placed side by side. In this case, the value is the total sum of the thickness of the layers when multiple layers exist in one multi-paned glazing.

2. U and X indicate the following numeric values:

U: Standard heat loss prevention performance (unit: $W/(m^2 \cdot K)$)

X: Thickness of layer (unit: mm)

3: ln indicates the natural logarithm.

Target Fiscal Year

FY 2022 and each subsequent fiscal year

Energy Saving Effects

Performance is expected to be improved* by 7.33% over the FY 2012 level by the target year (FY2022).
* Assuming that the shipment share by layer thickness does not change from that in FY 2012.

Display Items

Enforced as of December 1, 2015
Product name or type, heat loss prevention performance, and manufacturer's name

Place of Display

Locations that can be readily seen in catalogs with performance indications or documents provided by the manufacturer for selecting multi-paned glazing.

Target Requirements of Recommendations and Orders

Manufacturers, producers or importers whose manufacturing volume or importing volume (limited to shipment to the domestic market) is 110,000 m² or more.

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