

Japan's Top Runner Program: The Race for the Top



省エネのシンボルです
SMART CLOVER

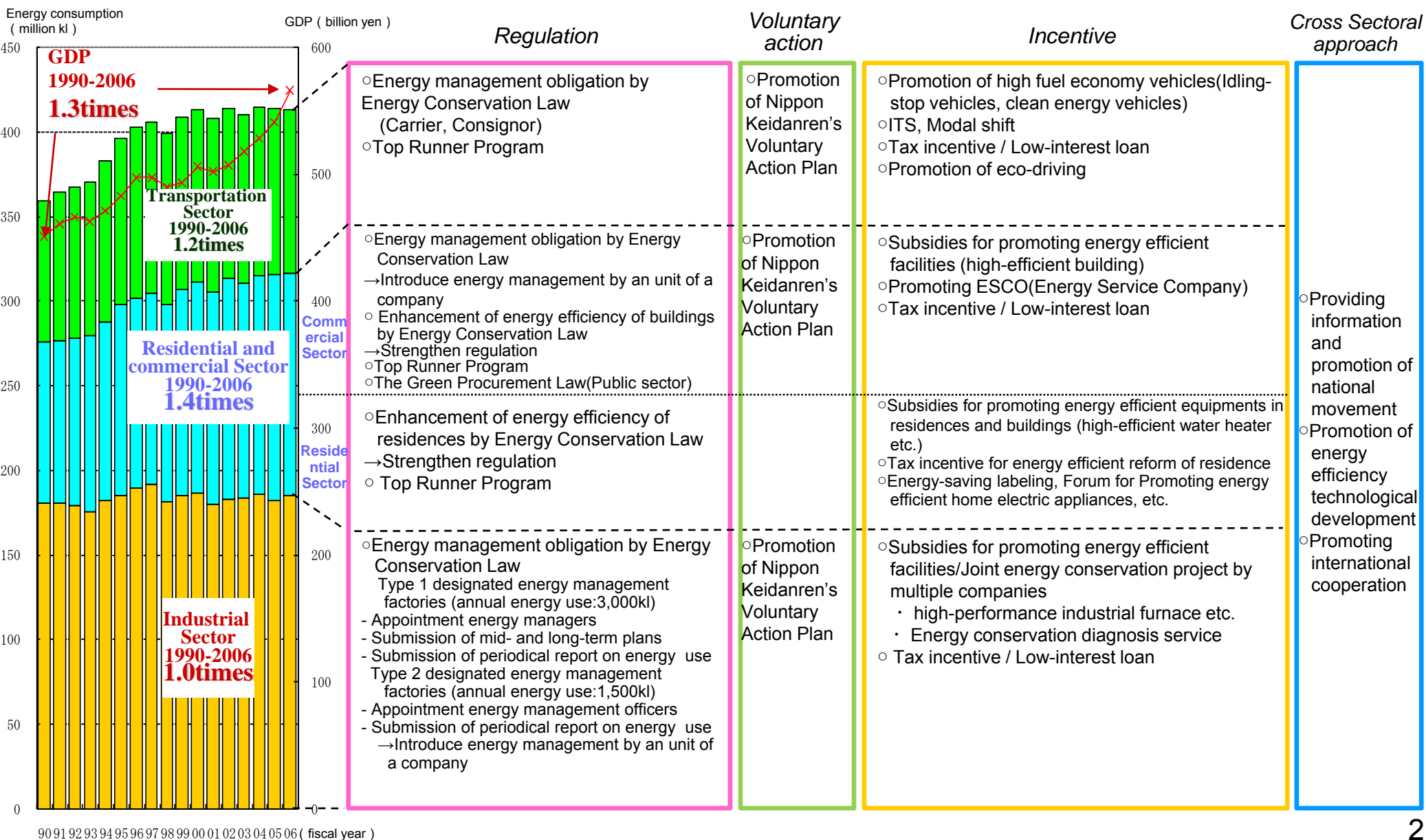
Atsushi Kodaka
Energy Efficiency and Conservation Division
Agency for Natural Resources and Energy
Ministry of Economy, Trade and Industry

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Overview of Japan's energy efficiency policy

○We should think such circumstances as “a chance for new growth”. Energy efficiency technology and know-how make new demand and employment.

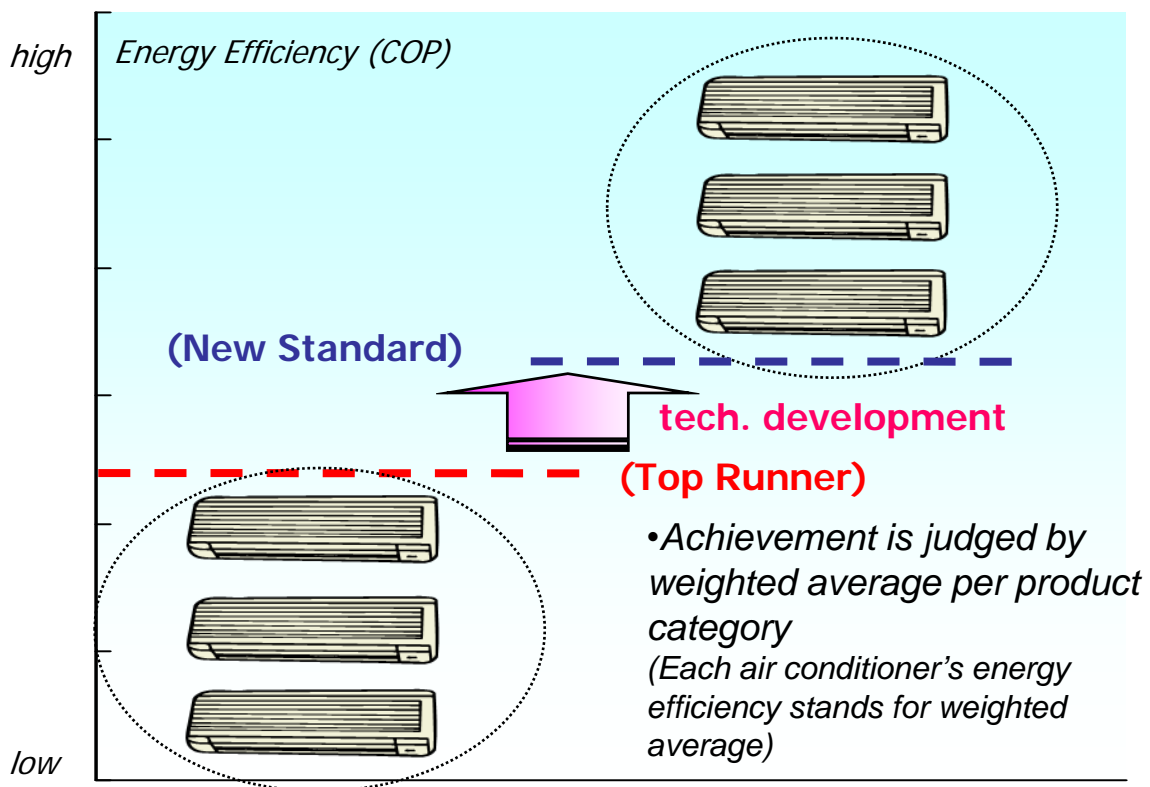


What is the Top Runner Program?

- Energy conservation law prescribes energy efficiency standards for appliances and vehicles according to the Top Runner method.
- The concept of the Top Runner Program is that standards are set higher than the best performance value of each product currently on sale in the market.
- Standard setting takes into account technological development.

Setting standard of Top Runner Program

Target products (21 products)



At the time of standard setting



Target Year

- | | |
|------------------------------|------------------------------|
| 1 . Passenger vehicles | 1 2 . Space heaters |
| 2 . Freight vehicles | 1 3 . Gas cooking appliances |
| 3 . Air-conditioners | 1 4 . Gas water heaters |
| 4 . TV sets | 1 5 . Oil water heaters |
| 5 . Video-cassette recorders | 1 6 . Electric toilet seats |
| 6 . Fluorescent lights | 1 7 . Vending machines |
| 7 . Copiers | 1 8 . Transformers |
| 8 . Computers | 1 9 . Electric rice cookers |
| 9 . Magnetic disc units | 2 0 . Microwaves |
| 1 0 . Electric refrigerators | 2 1 . DVD recorders |
| 1 1 . Electric freezers | |

※1: Heavy vehicles weighing over 3.5ton (buses, trucks) were added for the target products in April 2006.

※2: LCDs and plasma display TVs were added for the target products in April 2006.

Promotion of market competition: The race for the top

- The product on the market with the highest energy efficiency (the Top Runner) sets the standard. The Top Runner Program trigger the race for the top among manufacturers.

< Example of passenger vehicles >

Top Runner standards of passenger vehicles were set in 1999. Target year was 2010 and target fuel economy improvement was 22.8%.

Japanese automobile companies proclaimed one after another that they could meet the Top Runner Standards before the target year(2010), and they appealed their technology to consumer.

Then, fuel economy of passenger vehicle improved by 22.8% in 2005.

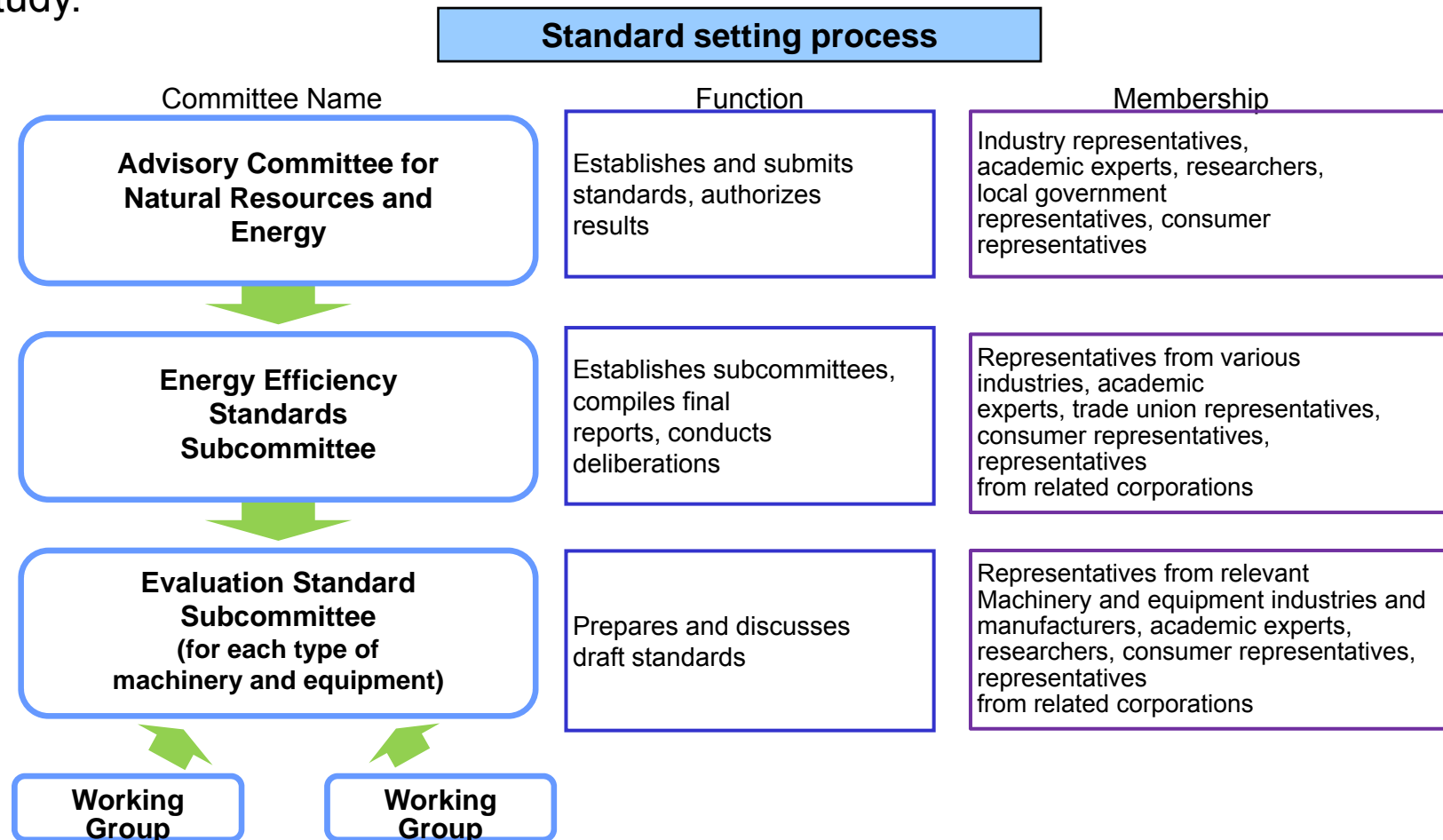
- The necessity of meeting the Top Runner Program provided the companies with an incentive to utilize the technologies, which they may otherwise have waited to commercialize.
- No other policy like MEPS(Minimum Efficiency Performance Standard) can get the such result than the Top Runner Program.

Mandatory Standards

- Manufacturers and importers are under the obligation to comply with the standards by Energy Conservation Law.
- Enforcement within the Top Runner Program relies on “blame and shame” which works well in Japan with Japanese manufactures and importers.
- Most of appliances and vehicles in Japan are provided by Japanese domestic manufacturers and importers.
- For noncompliance, following penalties are executed.
 - 1) recommendation,
 - 2) publication of the name of the company,
 - 3) order,
 - 4) penalty (under one million yen penalty)

Dynamic standards setting process with stakeholder input

- The revision of criteria is triggered when the target year for a product group approaches, or earlier when the criteria have been met well before the target year.
- Strong involvement of industry associations in the standard setting process.
- In case that measurement methods have not yet been established, a working group composed of industry associations, academic experts, and consumers is established to study.



Energy-saving Effects from the Top Runner Program

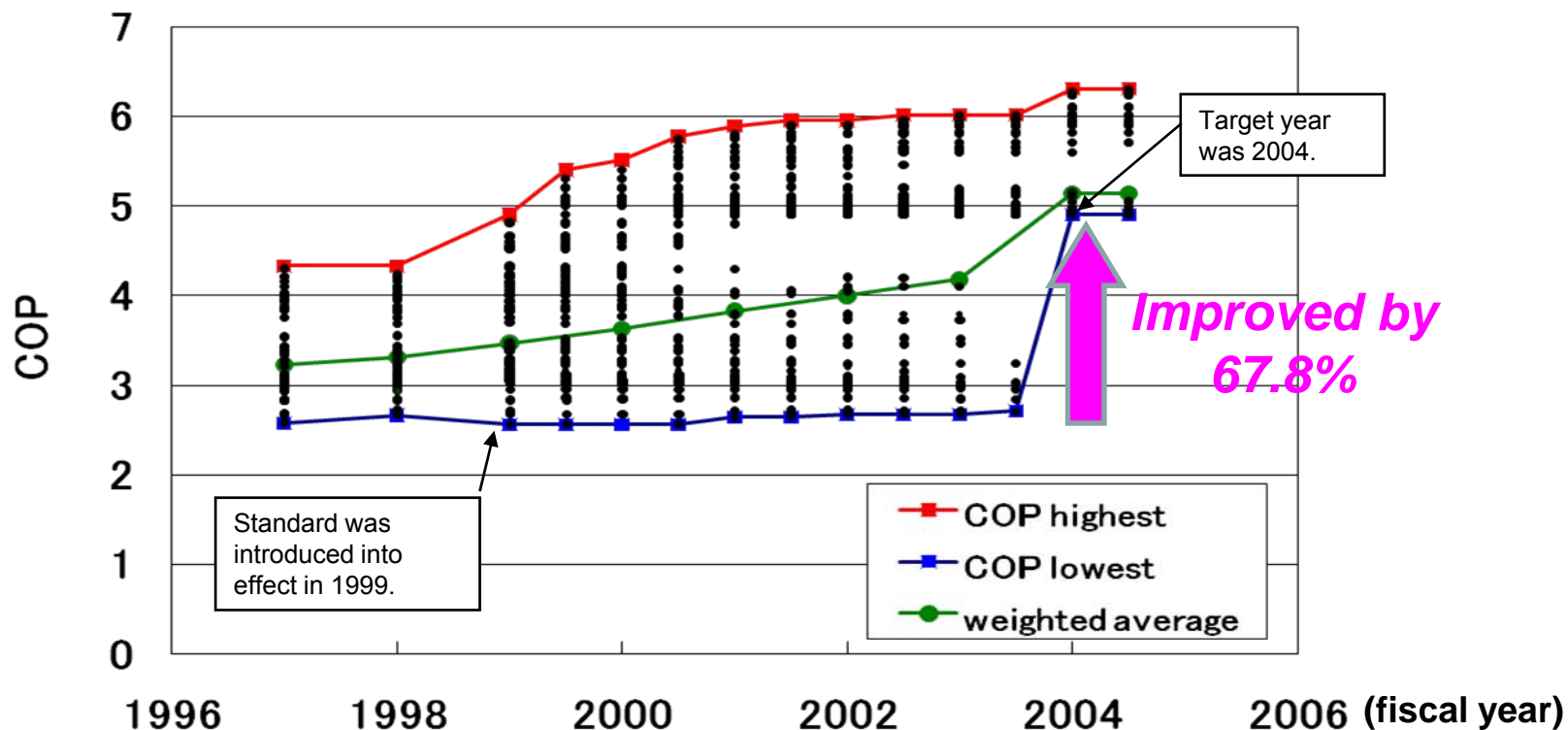
| Equipment | Improvement of energy consumption efficiency (Results) | Improvement of energy consumption efficiency (Initial expectation) |
|--------------------------------|--|--|
| TV sets (CRT-based television) | 25.7% (FY1997→FY2003) | 16.4% |
| Videocassette recorders | 73.6% (FY1997→FY2003) | 58.7% |
| Air conditioners* | 67.8% (FY1997→FY2004) | 66.1% |
| Electric refrigerators | 55.2% (FY1998→FY2004) | 30.5% |
| Electric freezers | 29.6% (FY1998→FY2004) | 22.9% |
| Gasoline passenger vehicles* | 22.8% (FY1995→FY2005) | 22.8% (FY1995→FY2010) |
| Diesel freight vehicles* | 21.7% (FY1995→FY2005) | 6.5% |
| Vending machines | 37.3% (FY2000→FY2005) | 33.9% |
| Computers | 99.1% (FY1997→FY2005) | 83.0% |
| Magnetic disk units | 98.2% (FY1997→FY2005) | 78.0% |
| Fluorescent lights* | 35.6% (FY1997→FY2005) | 16.6% |

Energy-saving standards for equipments with ※marks are defined by energy consumption efficiency per unit (ex: km/l), and those for equipments without ※marks are defined by energy consumption quantity (ex: kWh/year). “Improvements of energy consumption efficiency” in the above Table are judged by standards of each equipment (ex: If 10km/h changes to 15km/h, this is 50% improvement. (It is not calculated by fuel quantity of 10 liter/100km and improved quantity of 6.7 liter/100km to say the improvement is 33%). And if 10kWh/yr changed to 5kWh/yr, this is also 50% improvement.)

Improvement of Energy Efficiency (Example of Air Conditioner)

- Energy efficiency performance of air conditioner was improved by 67.8% from 1999 to 2004.
- Introduction of Energy-Saving Labeling Program, etc., contribute to this improvement.
- Though the Top Runner Program legislates the achievement of energy efficiency performance at the target year, the maximum performance and weighted average performance has been improved year by year.

Transition of energy efficiency performance (Air Conditioner - cooling capacity:2.8kW)



Source: The Japan Refrigeration and Air Conditioning Industry Association

Revisions of the Top Runner Standards (since FY2006)

TV Sets

- LCD & Plasma TV were added.
- **15.3%** improvement in energy saving (plan) (FY2004→FY2008)
- Enforced in April 2006.

Microwave Ovens

- Newly added to specified equipment
- **8.5%** improvement in energy saving (plan) (FY2004→FY2008)
- Enforced in April 2006.

Refrigerators/Freezers

- Revising standards & measurements
- **21.0%** improvement in energy saving (plan) (FY2004→FY2010)
- Enforced in September 2006.

Vending Machines

- Revising standards. Introducing Paper Pack and Cup System.
- **33.9%** improvement in energy saving (plan) (FY2005→FY2012)
- Enforcing in Autumn 2007.

Routers, etc.

- Newly added to specified equipment
- Planning within 2008.

DVD Recorders

- Newly added to specified equipment
- **22.0%** improvement in energy saving (plan) (FY2004→FY2008)
- Announced & Enforced in April 2006.
- Digital Broadcasting DVDs are added.
- **20.5%** improvement of energy saving (plan) (FY2006→FY2010)
- Plan to enforce in autumn 2007.

Air Conditioners

- Revising standards, energy consumption efficiency and measurement.
- **22.4%** improvement in energy saving (plan) (FY2004→FY2010)
- Enforced in September 2006.

Electric Toilet Seats

- Revising standards, measurements
- **9.7%** improvement in energy saving (plan) (FY2006→FY2012)
- Enforcing in Autumn 2007.

Business-use Air Conditioners

- Revising standards, etc.
- Planning within 2008.

Trucks and Buses

- Newly added to specified equipment
- Improvements in energy-saving:
Trucks **12.2%** (plan)
Buses **12.1%** (plan)
(
FY2002→FY2015)

Enforced in April 2006.

Rice Cookers

- Newly added to specified equipment
- **11.1%** improvement in energy saving (plan) (FY2003→FY2008)
- Enforced in April 2006.

Cars/Small Trucks

- Revising standards and measurement
- Improvements in energy-saving :
Cars **23.5%** (plan)
Small Buses **7.2%** (plan)
Small Trucks **12.6%** (plan)
(FY2004→FY2015)
- Enforced in July 2007.

Lightings

- Revising standards, including incandescent lights.
- Planning within 2008.

Moreover, business equipments such as composite equipment, business use refrigerators, and showcase refrigerators are considered to be added to specified equipment.

Energy-Saving Labeling Program

- Energy-Saving Labeling Program was started in 2000. The purpose of this program is to promote popularization of highly energy efficient products, by means of providing information to consumers on their energy efficient performance.
- Although it is a voluntary program based on JIS standards, Energy-Saving Labels are actively utilized in product catalogs by manufacturers and point-of-purchase displays at retail stores.

Indication Examples of Energy-Saving Labels

(Product catalog by manufacturers)

REC <録画> XCodeHD VIXS 1000 ALIS PANEL Always Lighting of Surface method 2系統2端子 HDMI

42V プラズマ

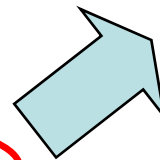
ハイビジョンHDDレコーダー内蔵、U/V 地上・BS・110度CSデジタル 42V型デジタルハイビジョンプラズマテレビ

W42P-HR9000

オープン価格 122、318

●テレビ本体質量:34.8kg
●テレビ本体寸法:幅113.4×高さ64.8×奥行9.9 (下部最大奥行10.9)cm

*JIS C 81000-3-2 適合品
スィーベルスタンド別売
*テレビ単体では自立しません。



| | Energy conservation standard achievement percentage | Annual energy consumption |
|--|---|---------------------------|
| <p>省エネ基準達成率</p> <p>108%</p> <p>年間消費電力量</p> <p>175kW h/年</p> <p>目標年度 2006年度</p> | | |
| Target fiscal year | | |
| <p>省エネ基準達成率</p> <p>91%</p> <p>年間消費電力量</p> <p>206kW h/年</p> <p>目標年度 2006年度</p> | | |

○As of April 2008, labeling is applied to the following 16 products:
air conditioners, refrigerators, freezers, fluorescent lights, TV sets, space heaters, gas cooking appliances, gas water heaters, oil water heaters, electric toilet seats, computers, magnetic disks, transformers, DVD recorders, rice cookers and micro wave ovens.

Energy-Saving Labeling System for Retailers

- The Revised Energy Conservation Law enforced in April 2006 prescribes that retailers shall make efforts to provide information. In light of this, a guideline was formulated, including providing information by using uniform energy-saving labels.
- The system started in October 2006. Uniform energy-saving labels shall be attached to TV sets, air conditioners and refrigerators.

Uniform Energy-saving Label

2006年度版

この商品の
省エネ性能は?

省エネ基準達成率
100%未満

100%以上

省エネ基準達成率
100%

年間消費電力量
450kWh/年

1年間使用した場合の目安電気料金
9,900円

使用期間中の環境負荷に配慮し、省エネ性能の高い製品を選びましょう。

【Multi-stage rating system】

- Energy-saving performance is indicated in 5 stages, from 1 to 5 stars, from low to high performance of products offered on the market.
- In order to clarify the compliance level with the Top Runner standard, arrows are placed under the stars, showing achievement and non-achievement.

【Energy-saving labeling system】

- Products which achieved the Top Runner standard carry a green “e” mark, while others carry an orange “e” mark.
- Achievement level and energy consumption efficiency (annual electricity consumption) are also indicated.

【Estimated annual electricity rates】

- The estimated annual electricity rates are indicated to show the energy consumption efficiency (annual electricity consumption) clearly.

Energy Efficient Product Retailer Assessment Program

- “Energy Efficient Product Retailer Assessment Program” has been implemented since FY 2003.
- This program acclaims retailers who actively promote sales of energy efficient products and who provide relevant information on energy saving.
- Awards such as “Minister of Economy, Trade and Industry Award” and “Minister of Environment Award” were established in FY 2004.



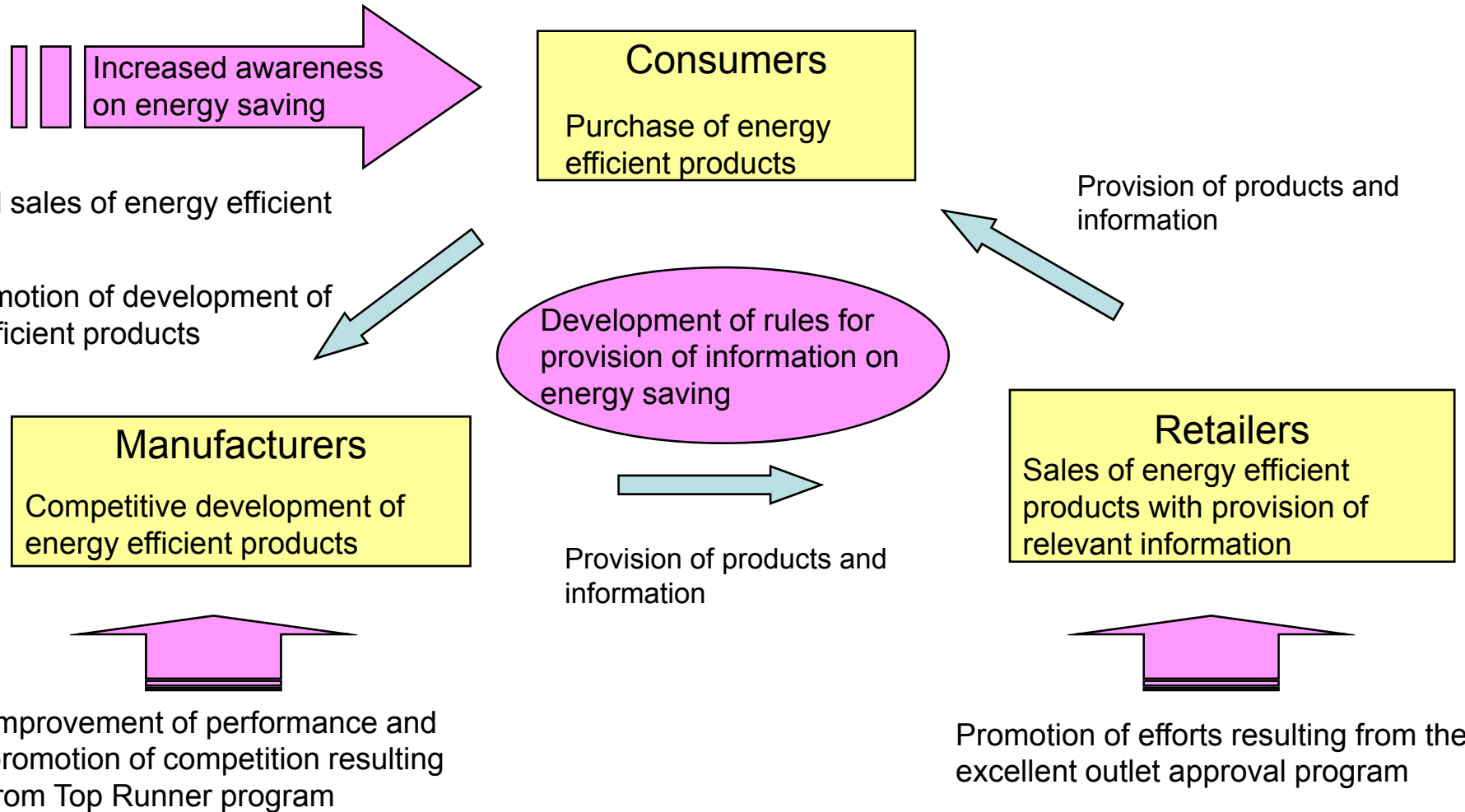
Forum for Promoting energy efficient home electric appliances

- “The forum for promoting energy efficient home electric appliances was established on October 18 last year by the parties concerned including home electric appliance manufacturers, retailers and consumer groups to promote the energy efficient home electric appliances (such as air-conditioners, refrigerators, lights) as people’s movement.
- Chairman: Setsuhiro Shimomura, President & CEO of Mitsubishi Electric Corporation
Members: 162 (manufacturers 55, retailers 73, consumers 2, others 32 (as of October 22))
- Energy conservation home electric appliance promotion week (scheduled in the summer (June 19 to July 13) and in the winter (November 22 to December 14) this year)



Positive Growth Cycle in Popularization of Energy Efficient Products

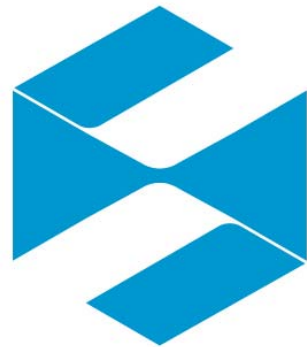
- By providing necessary information, encourage consumers to select energy efficient products.
- Popularization of energy efficient products will act as incentives for development of further energy efficient products.



Conclusions

- Energy efficiency performance of appliances has been significantly improved more than expected in Japan, since the introduction of Top Runner Program.
- The Top Runner Program promote market competition. Manufacturers do the best efforts for the improvement of energy efficiency by the competition one another.
- Manufacturers recognize that the products with higher energy efficiency performance are accepted by consumers. Varieties of information for the awareness of energy saving provided for consumers and retailers by labeling system etc. “Positive Growth Cycle” works well in Japan.
- The Top Runner Program is hoped to become an initiative not just in Japan, but also on a global scale.

Thank you very much for your attention.



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