

Energy Conservation Policies & Measures in Japan

Agency for Natural Resources and Energy(ANRE)

Ministry of Economy, Trade and Industry(METI)

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Table of Contents

..Japan's Mid-term Target

..Energy Conservation Law (revision 2008)

..Energy Conservation Measures .Eco Point-



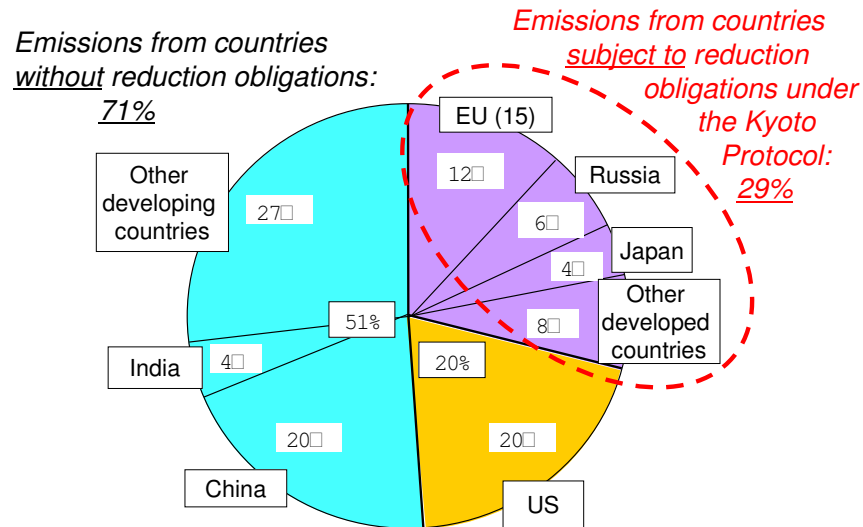
Japan's Mid-term Target



1-1. Japan's Mid-term Target

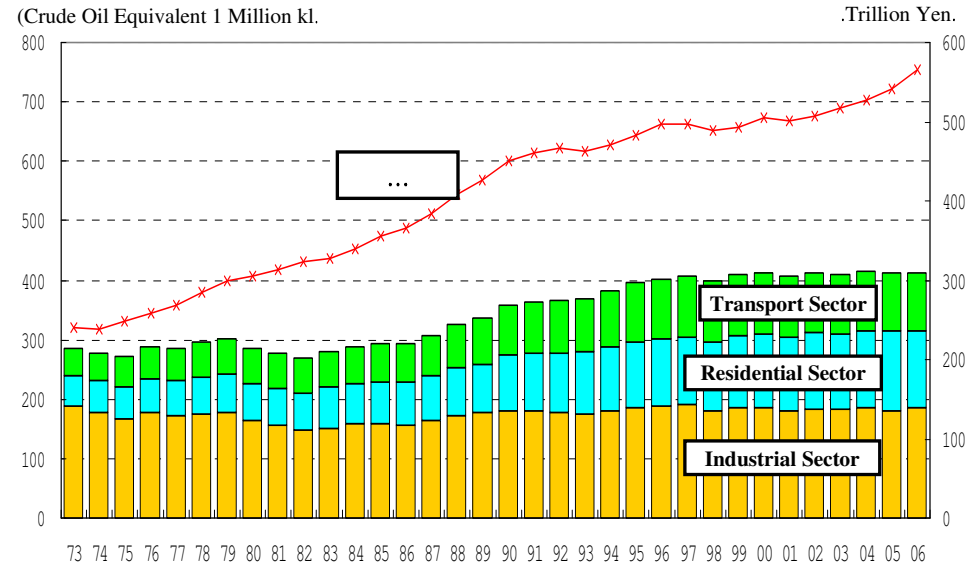
Three Basic Principles

. Participation of all major emitters



. Making the environment and the economy compatible

Japan's GDP Growth and Final Energy Consumption



. Achieving our long-term goal

. The G8 leaders agreed at the Hokkaido Toyako Summit and L'Aquila Summit that the world's total GHGs need to be halved by 2050.

. Japan proposed that emissions need to peak by 2015 in developed countries and by 2025 in developing countries in order to achieve this long-term objective.

. Japan set its long-term goal of reducing 60 to 80 percent of its current level of emissions by 2050.

1-2. Japan's Mid-term Target

Comprehensive and Scientific Approach

. The achievability in terms of technology and cost was seriously examined based on various economic models under the “Mid-term Target Committee”.

(Chairman: Toshihiko Fukui (former Governor of Bank of Japan))

. The Committee is comprised of members from research institutions, academia, etc.

Key Factors in Considering Each Option

- □ **Level of emissions**
- □ **Comparison of Japanese target level with those of other countries**
- □ **Measures and policies to be introduced**
- □ **Impacts on Japanese society and Economy**
- □ **Relationship with the long-term goal, costs incurred when relevant measures are not taken**

Bottom-up Model

□ a □ **Global Model**
For ensuring international comparability using MAC (Marginal Abatement Cost)

□ b □ **Domestic Model**
For identifying necessary Technologies and accumulating their mitigation impacts

General Equilibrium and Macro Model

Model that analyzes economic impact

1-3. Japan's Mid-term Target

Outcome of modeling analysis

| Options | | Japan | Comparability | | | Impact on economy |
|---|---------|----------|---------------|----------|---------------------|---|
| | | | □ □ | US | Developed Countries | |
| □ Comparable to EU & US/Continuation of current efforts | To 2005 | -4 | -9□ -14 | -7□ -18 | -6□ -14 | <ul style="list-style-type: none"> Photovoltaic 4 times Next generation cars 10% of sales 70% of new houses in line with the advanced energy standard Nuclear some 40% of electricity (from 31% in 2005) |
| | To 1990 | +4 | -14□ -19 | +6□ -5 | -9□ -18 | |
| □ Comparable in terms of equal MAC to DC 25% reduction | To 2005 | -6□ -12 | -18□ -23 | -30□ -33 | -22□ -23 | |
| | To 1990 | +1□ -5 | -23□ -27 | -19□ -24 | -25 | |
| □ Maximum introduction of technology | To 2005 | -14 | -21□ -23 | -33□ -34 | -23□ -26 | <ul style="list-style-type: none"> GDP ▲ 0.5-0.6% (2020) compared with option □ Photovoltaic 10 times Next generation cars 47-50% of sales 80% of new houses in line with the advanced energy standard Nuclear 43-44% of electricity (from 31% in 2005) |
| | To 1990 | -7 | -26□ -27 | -23□ -24 | -25□ -29 | |
| □ Comparable in terms of per GDP cost to DC 25% reduction | To 2005 | -13□ -23 | -25□ -27 | -19□ -28 | -22□ -23 | |
| | To 1990 | -8□ -17 | -30□ -31 | -7□ -18 | -25 | |
| □ Strengthened and compulsory measures for stock and flow with enforcement policy | To 2005 | -21□ -22 | -25□ -28 | -38□ -47 | -27□ -36 | <ul style="list-style-type: none"> GDP ▲ 0.8-2.1% (2020) compared with option □ Photovoltaic 25-40 times Next generation cars 53-100% of sales 100% of new houses in line with the advanced energy standard (80% of new houses in line with the advanced energy standard and 20% in line with the more stringent standard) Nuclear 45-51% of electricity (from 31% in 2005) |
| | To 1990 | -15 | -29□ -33 | -29□ -39 | -29□ -39 | |
| □ 25% reduction for all DC | To 2005 | -30 | | | | <ul style="list-style-type: none"> GDP ▲ 3.2-6.0% (2020) compared with option □ |
| | To 1990 | -25 | | | | |

* 6 gases included, but sink, overseas credits (CDM or JI) not included

* IEEJ: The Institute of Energy Economics, Japan

* Comparability is measured based on marginal abatement cost (except option □) * NIES: The National Institute for Environmental Studies

1-4. Japan's Mid-term Target

Support of the Public

. Shared discussion and public comments were reflected as fully as possible when deciding the target.

| | Public comment process (Apr.17□May 16; 10,671 opinions) | Opinion polls (May5~17; Valid responses 1,222 out of 4,000) |
|---|---|--|
| <input type="checkbox"/> <input type="checkbox"/> 4% compared to 2005 | <u>74.4%</u> | 15.3% |
| <input type="checkbox"/> <input type="checkbox"/> 14% compared to 2005 | 1.0% | <u>45.4%</u> |
| <input type="checkbox"/> <input type="checkbox"/> 21% compared to 2005 | 0.6% | 13.5% |
| <input type="checkbox"/> <input type="checkbox"/> 30% compared to 2005 | 13.0% | 4.9% |

. Other options: . -6%~-12% compared to 2005, . -13%~-23% compared to 2005

1-5. Japan's Mid-term Target

Key Points of Japan's Mid-term Target

- base year → 2005
- level of reduction → ▲... by 2020
- “Mamizu (Clear Water)” approach

→ Japan's target is calculated on the basis of energy- conservation, de-carbonization and other domestic efforts to be taken in Japan. The target does not include purchase of emission credits and sinks.

Why “Mamizu” is appropriate?

→.International comparability should be examined based on domestic efforts.

.Mitigation efforts should be primarily focused on domestic efforts.

.The treatment of offsets and sinks will be considered during the course of the negotiations.

1-6. Japan's Mid-term Target

Change of administration

- General election of the House of Representatives conducted on 30th August
- The result of the general election was that the Democratic Party winning a majority in the House of Representatives.
- New administration was inaugurated by Prime Minister ICHIRO HATOYAMA in 16th September 2009.

New administration spoke out the mid-term target

- In Summit on Climate Change in New York on 22 September 2009, Prime Minister ICHIRO HATOYAMA spoke about more ambitious the mid-term target.
- He said the goal of Japan is to cut emissions 25% by 2020 from 1990 levels.
- This goal is not accomplished without mobilizing all available policy tools (the consideration of a domestic emission trading mechanism and a feed in tariff for renewable energy and a global warming tax etc).
- However, The commitment of Japan to the world is premised on agreement on ambitious targets by all the major economies.

Energy Conservation Law (Amendment 2008)



Scope of Regulations under Energy Conservation Law

(1) Manufacturing plants and business locations

Business operators that conduct business operations by establishing a manufacturing plant.

Business operators that conduct business operations by establishing a business location (hospitals, hotels, schools, etc.).

(2) Transportation

Transportation service providers:
Business operators that provide cargo and passenger transport services as business.

Cargo owners: Business operators that have their cargo transported by transportation service providers.

(3) Residential buildings and structures

During construction: Business operators that place orders for construction of residential buildings or structures.

During extension or renovation, as well as extensive repair of existing building: Owners and managers of residential buildings and structures.

(4) Machinery and appliances

Manufacturers and importers of machinery and appliances that consume energy.

Overview of the Energy Conservation Law

Institution, promulgation in August, 2005, enforcement in April, 2006

Factories/Business Establishments

Announcement of business organizations' obligation to make efforts and evaluation criteria

- **Type 1 designated energy management factories** (Energy consumption 3,000kl/year)
 - Obligation to appoint energy managers
 - Obligation to submit mid-term and long-term plans
 - Obligation to periodically report the state of energy use
- **Type 2 designated energy management factories** (Energy consumption 1,500kl/year)
 - Obligation to appoint energy management officers
 - Obligation to periodically report the state of energy use



Transportation

Announcement of business organizations' obligation to make efforts and evaluation criteria

- **Specific transport business organizations (Freight, passengers)** (Number of cars owned: 200 trucks or more, 300 trains or more)
 - Obligation to submit mid-term and long-term plans
 - Obligation to periodically report the state of energy use
- **Specific cargo owners** (Transport volume a year, 30 million ton kilo or more)
 - Obligation to submit plans
 - Obligation to periodically report the state of energy used for consigned transport

Residences and Buildings

Announcement of construction owners' obligation to make effort and evaluation criteria

- **Specific buildings** (Total floor area, 2,000m² or more)
 - Obligation of construction owners who build or reform specific buildings to report energy conservation measures to administrative bodies
 - Obligation to report the state of periodic maintenance



Measures for Machinery and Equipment

Obligation of business organizations who make or import equipment consuming energy

Top runner criteria

- Energy conservation criteria for passenger cars, air conditioners, TV, etc. From among the products currently available in the market, the product the energy conservation efficiency of which is the best in the same product category is selected, and other products in the same product category are asked to make their performance the same as or better than the product thus selected

Provision of Information

Obligation to make efforts to provide general consumers with information

- Announcement of energy conservation products introduced by electricity and gas companies, and announcement of activities, including implementation and achievement, to provide information
- Provision of understandable energy conservation information (yearly energy consumption, fuel efficiency, etc) by retail stores of home electric appliances, etc.

Central Features of Amended Energy Conservation Law (1)

- In order to further promote strategies against global warming, it is necessary to enhance energy conservation strategies in business operations and homes where energy consumption is growing dramatically.
- For that end, the Energy Conservation Law must be amended in order to enhance energy conservation strategies pertaining to offices, convenience stores, residential buildings and structures.

Strategy 1: Enhancement of energy conservation strategies pertaining to business operations sector

Implementation of regulatory system for individual business operators

<Current situation>

Obligation to manage energy in units of individual manufacturing plants imposed on large scale manufacturing plants that are over a certain size.

Coverage of regulations under current Energy Conservation Law (Based on energy consumption)



<After amendment>

- (1) Obligation to manage energy in units of individual business operators (individual business enterprises) implemented.
- (2) Franchise chains are also considered to be a single business operator and regulations that are similar to those imposed on individual business operators are implemented.

Other provisions

<After amendment>

Regulations call for comprehensive evaluation of energy conservation activities implemented by individual business enterprises with considerations for following conditions:

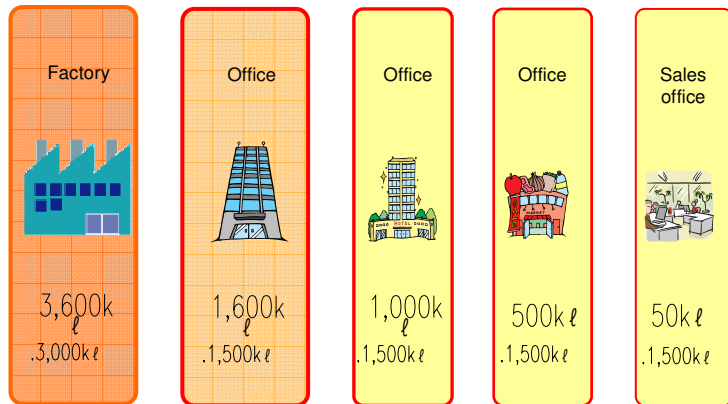
- . Status of energy conservation in individual business line (benchmark for individual industrial sectors formulated).
- . Activities undertaken cooperatively by multiple business operators (joint energy conservation projects).

Threshold in Units of Entrepreneur and Franchise Chain

- Government specifies a corporation as “designated corporation” when the total energy consumption of all factories and workplaces of this corporation exceeds 1,500 kl (in crude oil equivalent) annually.
- Government specifies a franchise headquarters (chain business operator) as “designated chain business operator” when the total energy consumption of all factories and workplaces, and the member stores satisfying certain conditions exceeds 1,500 kl (in crude oil equivalent) annually
- Designated corporations and chain business operators should submit medium-to-long term plans and regular reports, appoint energy management control officer from executives and energy management planning promoter to support the officer, and so on.
- Government also specifies factories and workplaces exceeding 3,000 kl as “Class-1 designated energy management factory” and those exceeding 1,500 kl as “Class-2 designated energy management factory”.
- Type 1 or Type 2 energy manager should be appointed for designated energy management factories.

Before revision

Energy management per factory or workplace



Specified as class-1 designated energy management factory

Specified as class-2 designated energy management factory

Not specified

Not specified

Not specified

[Energy management system]

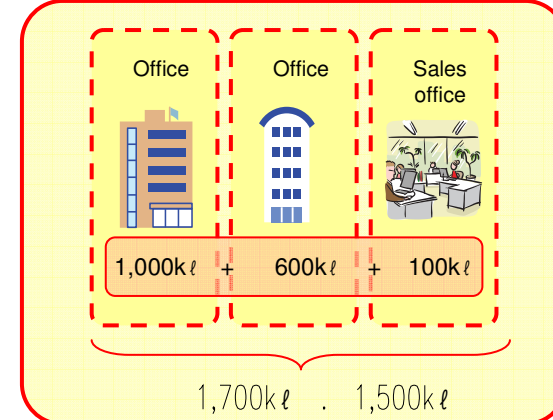
- Energy managers are selected for each designated energy management factory

[Plan settlement and report]

- Each class-1 designated energy management factory should submit medium-to-long term plan.
- Each designated energy management factory should submit regular report.

After revision

Energy management as whole corporation



In this case, the total energy consumption exceeds 1,500 kl, this corporation is specified as designated corporation.

[Energy management system]

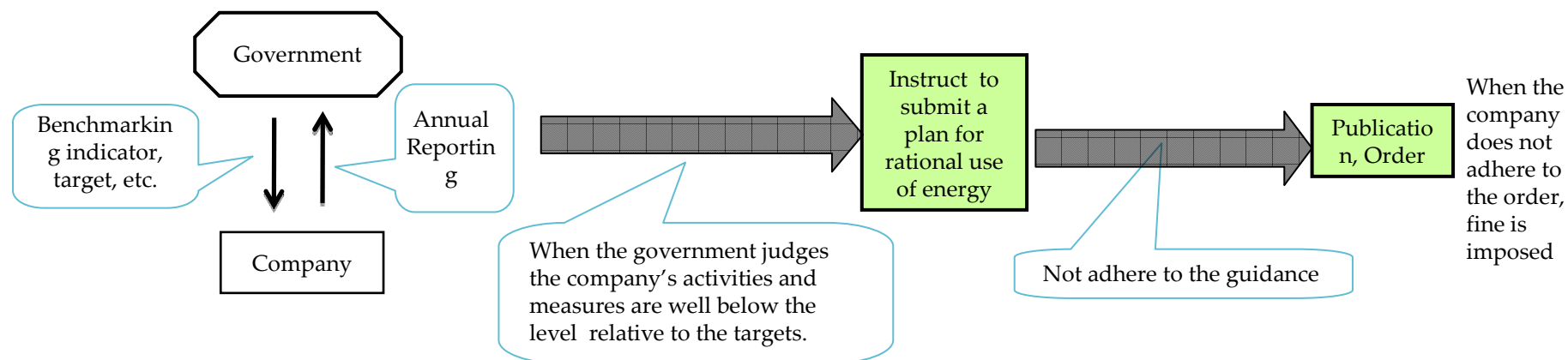
- Energy management control officer is selected from executives.
- Energy management planning promoter to support energy management control officer is selected.
- Energy managers are selected for each designated energy management factory.

[Plan settlement and report]

- Corporation should submit medium-to-long term plan and regular report.

Sectoral Approaches as National Regulation (Sectoral Benchmarking)

- **Sectoral approaches are introduced as a domestic regulatory measure as the world's first attempt.**
- Specifically for certain sub-sectors initially in energy intensive industries,
 - Determine **indicators enabling companies to benchmark** the levels of energy efficiency against others within the same sub-sector.
 - Set **medium and long-term targets** (to be achieved around 2015-2020).
- **Target setting under the current law:** Each factory and workplace is required to achieve annually on average **1 % reduction or more of energy intensity**.
- **Target setting after revision:** In addition to the energy intensity target as above, **benchmarking indicators and targets** thereof, which are required to **achieve in the medium and long-term**, are set for energy intensive industries such as **iron and steel, cement, and electricity suppliers**.
- Targets are set at the energy efficiency level of the best performing companies (**top 10%-20%**) in each sub-sector (“Average value - Standard deviation”).
- Companies in these sub-sectors are obligated to **report every year the status of benchmarking indicator**, in addition to the ratio of energy intensity reduction and implementation of energy management system.
- Based on the companies' reports, the government may take necessary measures when it sees substantial lack of efforts in reference to the targets. The measures include guidance, publication of the company's name, and order (fine is imposed when the company does not adhere to the order).



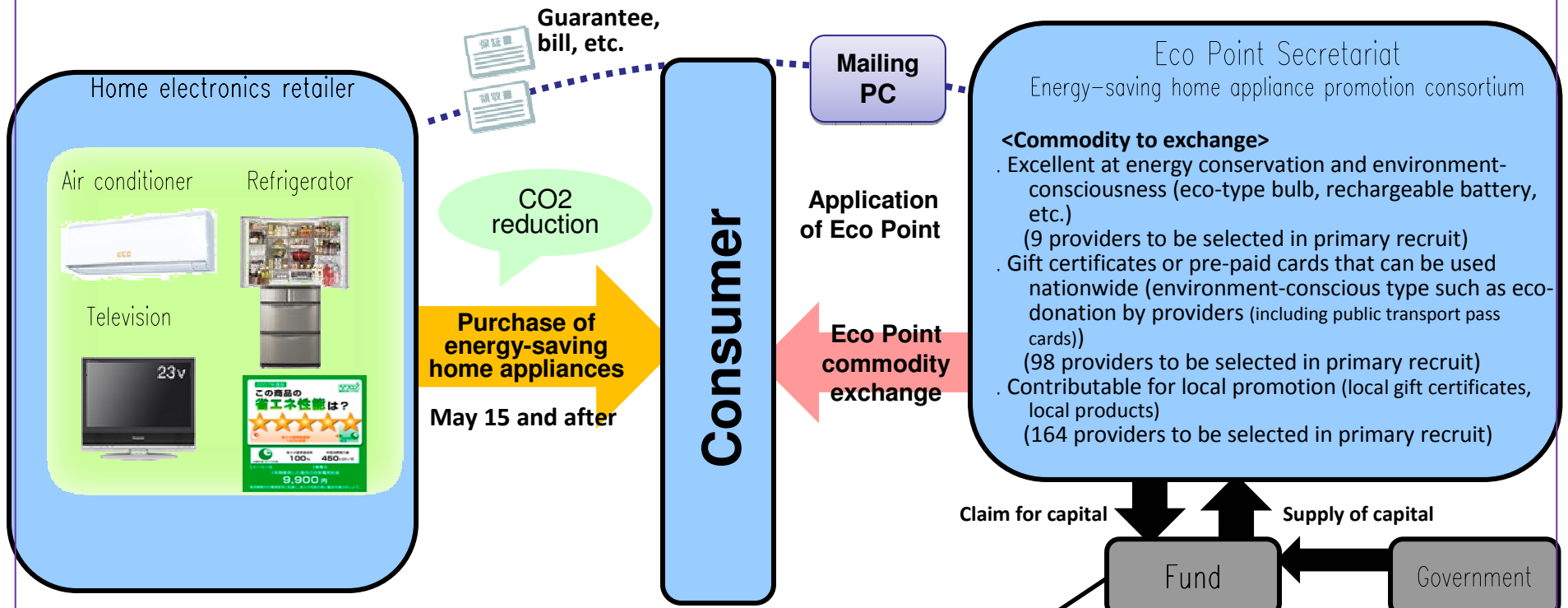
Energy Conservation Measures .Eco Point–



Spread of energy-saving home appliances by using Eco Point

[Purpose] . CO2 reduction, . Economic activation, . Spread of ground-wave digital television

[When to start] Acceptance of Eco Point application starts in July and commodity exchange starts in August.



<Eco Points>

Environmental Partnership Council

| | Air conditioner | Refrigerator | Television |
|--|---|--|---|
| Purchase of product with uniform energy-saving label equivalent to 4 stars | 6,000 to 9,000 (3 steps according to cooling capacity) | 3,000 to 10,000 (4 steps according to capacity) | 7,000 to 36,000 (5 steps according to screen size) |
| Further recycling | 3,000 | 5,000 | 3,000 |

Thank you for
attention!

