

## Session-2

# Green Products and Services from Matsushita Electric Industrial

Matsushita Electric Industrial Co., Ltd.  
Shinichi Imai

Ladies and gentlemen, I am Shinichi Imai of the Corporate Environmental Affairs Division of Matsushita Electric Industrial Company. I will be talking to you today about the "Green Products and Services" of my company.

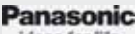
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- 3 **Product Service System (Light & Trust Service)**
- 4 **Social Contributions in the 21st Century**

I would like to begin my presentation by profiling our company and explaining our Business Vision and Environmental Vision. After that, I will explain how we evaluate green products and services at Matsushita, factor X calculations and eco labeling. As the third part of the presentation, I will explain about our Light & Trust Service, a new eco-friendly business model of ours. This Light & Trust System is a good example, in my opinion, of the product service systems (PSS) that are the main theme of this workshop. Finally, I will mention our strong determination on social contribution in the 21st century.

## 1. Company Profile, Business Vision and Environmental Vision

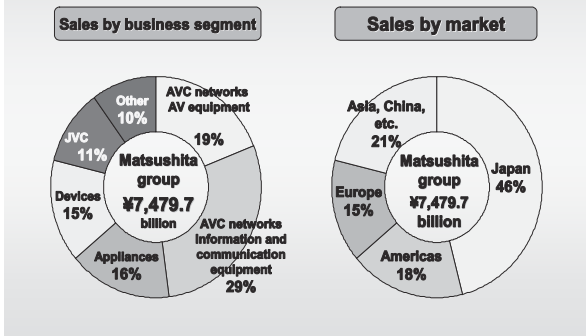
### 1-1 Company Overview

**Name:** Matsushita Electric Industrial Co., Ltd.  
**Head Office:** Kadoma City, Osaka  
**Date founded:** March 7, 1918  
**Capital:** ¥258.7 billion  
**Net Sales:** ¥7,479.7 billion (Consolidated for FY2003)  
**Employees:** 290,493 (Including 371 consolidated subsidiaries)  
**Global brand slogan:** 

The headquarters of Matsushita Electric Industrial (MEI) are in Kadoma-City, Osaka. The company was founded in 1918 by Konosuke Matsushita. Consolidated group sales for 2003 were ¥7.5000 trillion. Globally, the group has about 290,000 employees. Until recently, MEI has used the two brand names of National and Panasonic, but as of April 2003, all products, except for home appliances sold in Japan, were unified under the Panasonic label. The global brand slogan is "Panasonic ideas for life". This "ideas for life" carries the message that the "worldwide workforce of the Matsushita Group continues to provide valuable ideas that help consumers better their lives and help society to develop through development, manufacture, sales and services."

By business segment, the consolidated sales of ¥7.5000 trillion break down into 19% for audio visual equipment such as TVs, DVD recorders and digital cameras, 29% for information and communication equipment such as

## 1-2 Segment Information



cellular phones, personal computers, facsimiles and car navigation, 16% for home appliances such as refrigerators, air conditioners and washing machines, 15% for devices such as semiconductors and electronic components, and 10% for other products such as electronic component mounting machines.

By region, these sales break down into 46% from Japan, 18% from the USA, 15% from Europe and 21% from China and other Asian countries. The ratio is 46% domestic to 54% overseas, but we believe the share of overseas sales will raise even higher centered on business in China.

## 1-3 Business Vision

### Two Big Business Visions for 2010 at MEI

1. **Contribute to the formation of a ubiquitous network society with proprietary advanced technology.**
2. **Contribute to mankind's coexistence with the global environment with proprietary environmental technology.**

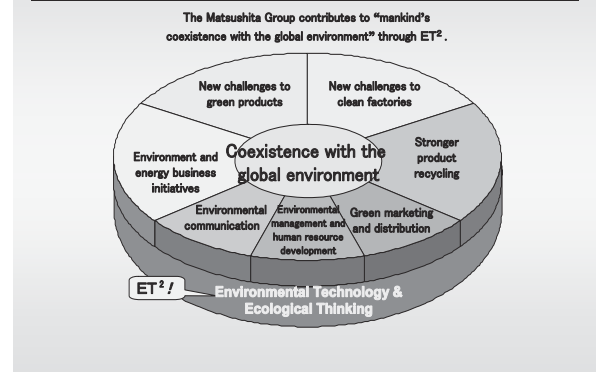
MEI has two business visions to take us up to 2010.

- ① Contribute to the formation of a ubiquitous network society with proprietary advanced technology.
- ② Contribute to mankind's coexistence with the global environment with proprietary

environmental technology.

We believe "coexistence with the global environment" is the theme not only related to products, services and production activities but to be emphasized in all aspects of operations on down to how we act as a company and how each individual employee of ours acts.

## 1-4 Environmental Vision



We also adopted an Environmental Vision and Green plan 2010 that are linked to these Business Visions, in October 2001.

What we mean by "the Matsushita Group contributing to mankind's coexistence with the global environment through ET<sup>2</sup>" in the chart is that we will promote environmental activities on the synergy of Environmental Technology and Environmental Thinking.

This Environmental Vision is divided into 7 areas of activity, and concrete targets have been set for each area activity in our Green plan 2010.

This chart describes the first half of Green plan 2010, which explains concrete target to be achieved in 2005 and 2010 in four area activities: "new challenges to green products", "new challenges to clean factories", "new challenges to product recycling" and "environment and energy business activities". Among these area activities, new challenges to "green products" and "clean factories" are especially important. I will explain how we calculate the global warming prevention rate and resource conservation rate of green products

### 1-5 Green Plan 2010 (1)

Concrete action plan to achieve the environmental vision Reference year: FY2000 Global targets

Item	2005 target	2010 target	
New challenges to green products	Global warming prevention	<ul style="list-style-type: none"> <li>Improve global warming prevention rate by 30%.</li> </ul>	<ul style="list-style-type: none"> <li>Improve by 50%</li> </ul>
	Chemical substances	<ul style="list-style-type: none"> <li>Abolish use of lead, cadmium, mercury, hexavalent chromium, bromine and chlorine flame retardants.</li> </ul>	
	3R's	<ul style="list-style-type: none"> <li>Improve resource conservation rate by 50%.</li> </ul>	<ul style="list-style-type: none"> <li>Improve by 70%</li> </ul>
New challenges to clean factories	Product development	<ul style="list-style-type: none"> <li>Develop product lines with 70% green products.</li> </ul>	<ul style="list-style-type: none"> <li>Improve to 90%</li> </ul>
	Global warming prevention	<ul style="list-style-type: none"> <li>Reduce CO2 unit emission by 5%.</li> <li>Reduce CO2 emissions to FY1990 level <math>\pm 0\%</math> (Japan).</li> </ul>	<ul style="list-style-type: none"> <li>Reduce by 10%</li> <li>Reduce by 7% (Japan)</li> </ul>
	Chemical substances	<ul style="list-style-type: none"> <li>Reduce use, discharge and transfer by 40%.</li> </ul>	<ul style="list-style-type: none"> <li>Reduce by 60%</li> </ul>
	Waste	<ul style="list-style-type: none"> <li>Reduce quantity per unit sales by 10%.</li> </ul>	<ul style="list-style-type: none"> <li>Reduce by 20%</li> </ul>
	Water	<ul style="list-style-type: none"> <li>Reduce consumption per unit sales by 5%.</li> </ul>	<ul style="list-style-type: none"> <li>Reduce by 10%</li> </ul>
Stronger product recycling	Production methods and schemes	<ul style="list-style-type: none"> <li>Build production methods and schemes that efficiently use resources and energy.</li> </ul>	
		<ul style="list-style-type: none"> <li>Establish system for expanding product lines.</li> <li>Improve recycle rate.</li> </ul>	<ul style="list-style-type: none"> <li>Establish recycle system for all home appliance products.</li> </ul>
Environment and energy business initiatives		<ul style="list-style-type: none"> <li>Develop home fuel cell cogeneration system.</li> </ul>	<ul style="list-style-type: none"> <li>Full-fledged spread of the system.</li> </ul>
		<ul style="list-style-type: none"> <li>Strengthen energy management business.</li> </ul>	<ul style="list-style-type: none"> <li>Expand the business.</li> </ul>

later in my presentation.

I won't go into details of each and every item, but what is important here is to set targets in specific figures.

### 1-6 Green Plan 2010 (2)

Item	2005 target	2010 target	
Green marketing and distribution	<ul style="list-style-type: none"> <li>Resource conservation</li> <li>Reduce resource consumption in sales activities by using Internet.</li> <li>Promote modal shift in distribution.</li> </ul>	<ul style="list-style-type: none"> <li>Introduce low emission vehicles.</li> </ul>	
Environmental communication	Information disclosure	<ul style="list-style-type: none"> <li>Evolve environmental report into sustainable development report.</li> <li>Publish site reports.</li> <li>Promote communication with all stakeholders.</li> </ul>	
	Corporate citizen activities	<ul style="list-style-type: none"> <li>Develop LE (Love the Earth) activities outside of company.</li> <li>LE family expansion: Increase to 50% or more of all employee families.</li> </ul>	<ul style="list-style-type: none"> <li>Build LE activity network between business.</li> <li>Increase to 80%.</li> </ul>
Environmental management and human resource development	Organizational structure	<ul style="list-style-type: none"> <li>Strengthen decision-making functions in each area of the world.</li> </ul>	
	Personal training	<ul style="list-style-type: none"> <li>Build environmental education curriculum for all levels and departments.</li> </ul>	
	Management assessment system	<ul style="list-style-type: none"> <li>Establish comprehensive environmental accounting system.</li> <li>Reflect environmental load reduction of products and business in performance evaluations.</li> </ul>	<ul style="list-style-type: none"> <li>Reflect environmental accounting system in performance evaluations.</li> </ul>

This chart describes the last half of Green plan 2010, which includes "green sales and distribution", "environmental communication", and "environmental management and human resource development".

## 2. Green Products (Factor X and Eco Labeling)

This section explains how we calculate Factor X for products and Eco Labeling practice at MEI.

First, the global warming prevention rate and resource efficiency of new products are obtained. These numbers are compared against past values and the factor for global warming prevention and resource efficiency are computed.

This figure gives the factor X of existing

### 2-1 Eco-efficiency and Factor X

**Eco-efficiency**

$$\text{GHG efficiency (Energy use index)} = \frac{\text{Product life} \times \text{Product function}}{\text{GHS emissions over entire lifecycle}}$$

$$\text{Resource efficiency} = \frac{\text{Product life} \times \text{Product function}}{\text{Resource consumption over entire lifecycle}}$$

$\text{Resource consumption over entire lifecycle} = \text{Newly consumed resources} + \text{Discarded resources}$   
 $\text{Newly consumed resources} = \text{Input resources} - \text{3R's resources}$   
 $\text{Discarded resources} = \text{Input resources} - \text{3R's applicable resources}$

**Factor X**

$$\text{GHG factor} = \frac{\text{GHG efficiency of target product}}{\text{GHG efficiency of reference product}}$$

$$\text{Resource factor} = \frac{\text{Resource efficiency of target product}}{\text{Resource efficiency of reference product}}$$

### 2-2 Factor X Examples

Product	CFC/HFC-free refrigerator	Air-conditioner	Natural refrigerant heat pump water heater	Fluorescent light bulb "Parukku Ball"
GHG factor	5.2	3.1	2.4	4.1
Resource factor	1.0	1.4	1.2	2.2
Reference product	Made in 1991	Made in 1990	Made in 2000	Incandescent bulb
Product function	1.0x	1.6x heating capacity	1.2x hot water storage capacity	1.0x
Product life	1.0x	1.0x	1.0x	6.0x

products at MEI. For example, a CFC-free refrigerator has a 5.2 global warming prevention factor compared to a refrigerator from 1991. This refrigerator uses isobutane as a refrigerant and cyclopentane in the place of foamed urethane insulation. It also employs vacuum insulation that greatly reduces power consumption, hence enabling a high factor of 5.2. The fluorescent light bulb lasts six times longer than incandescent bulbs and consumes but one-fourth the energy, therefore it has a global warming prevention factor of 4.1 and a resource factor of 2.2.

Some of the "environmental labels" that tell consumers about the eco-friendly products of the Matsushita Group are shown in the figure above. Until now, separate labels were used for the Panasonic and National brands, but as of April 2003, a single type of label has been used. Labels bear a symbol mark and comply with ISO14021.

**2-3 "Environmental Labeling" at MEI**

**Basic policy**

- Environmental conscious feature of the Matsushita Group  
Shown in product catalogs and attached to product and packaging to promote the product.
  - Integrates "feature sticker" used previously by brand.
  - Linked to GP products of the Matsushita Group.
  - Complies with "Type II Environmental Label" of ISO14021.
- Use also as a symbol mark of environmental protection activities at MEI.

**New environmental labels**



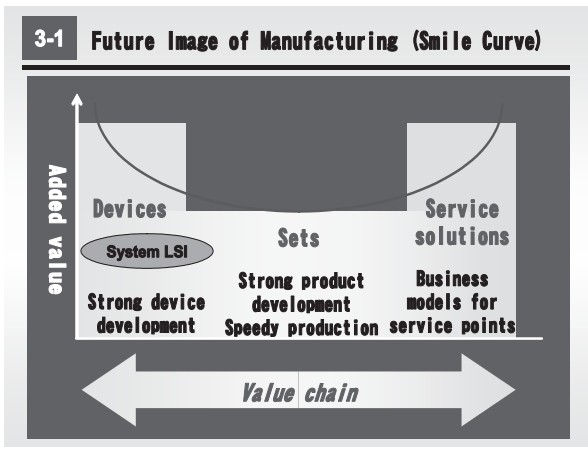
**Example use as symbol mark**



The new symbol mark is used elsewhere besides eco-labeling. For example, it appears on rail containers, which are replacing truck transport.

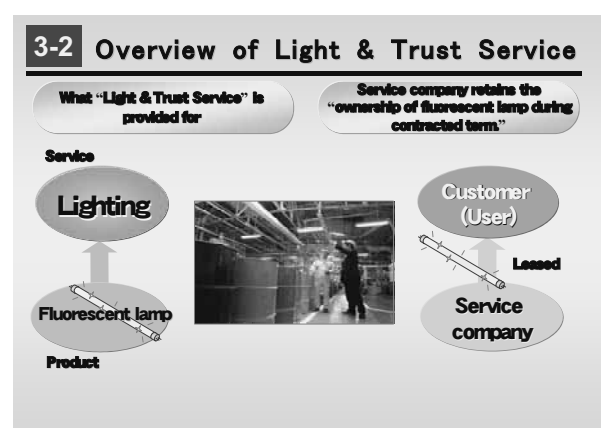
**3. Product Service System (Light & Trust Service)**

Now I would like to introduce a new eco-friendly business model of MEI. Before moving on to detail explanation on Light & Trust Service, let me talk briefly on Future Image of Manufacturing ('Smile Curve').



The added-value of manufacturing can no longer be enhanced by "Sets" alone, and source of added value has become diversified: "Devices" to "Service solutions". Furthermore, even greater value is born by linking these elements. So, it is important to build a new business model that generates synergy among "Devices", "Sets" and "Service".

I would like to introduce one example of



service-oriented business models of MEI, "Light & Trust Service," a new approach to selling fluorescent lamps for business use.

As you may know, fluorescent lamps contain a small quantity of inorganic mercury on the inside, which makes disposal of used lamps troublesome for users (businesses). The Light and Trust Service offers something functional rather than physical such as a fluorescent lamp. While under contract, the fluorescent lamp belongs to a service company, therefore it is their responsibility to dispose of the fluorescent lamp when used. The user buys only the service and need not worry about waste treatment.

**Current State of Disposal of Used Fluorescent Lamps**

**1. Related laws and regulations**

Stronger waste and recycling laws	Responsibility of discharger	Amended Waste Disposal Law (Enacted June 2000)
	Extended Producer Responsibility (EPR)	Basic Law for Establishing a Recycle-based Society (Enacted May 2000)
	Responsibility of national/local governments	Law on Promoting Green Purchasing (Enacted May 2001)

**2. Discharge of fluorescent lamps**

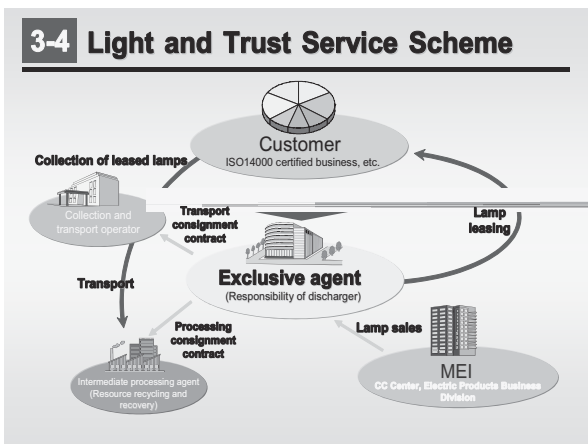
- 100 million fluorescent lamps for business a year
- Proper disposal required

**3. Current waste situation**

- Shortage of final disposal sites
- Global environment adversely affected by landfill of broken fluorescent lights
- Glass, metal and powder: Unseparated → Wasted resources

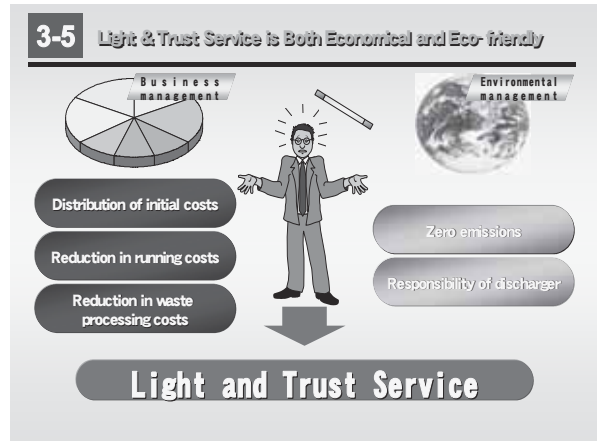
If you think a moment about the current state and future of disposal of used fluorescent lamps, the first thing that comes to mind is that environmental laws and regulations have been enacted and they have spell out the responsibilities of manufacturers and dischargers:

Extended Producer Responsibility (EPR), responsibility of discharger, green purchasing - there seems to be no way to get around. Today, some 160 million fluorescent lamps for business use are disposed of every year, but disposal costs are escalating due to the shortage of waste sites. Moreover, simply burying broken fluorescent lamps adversely affects the global environment. And, it will end up in wasting resources if lamps are disposed of without first separating the glass, metal and fluorescent powder in them.



The service is provided by an authorized dealer of MEI. Users contract the service with this dealer. The dealer provides the lamps, collects them when used and transports them to an intermediary handler of lamps. Actual collection and transport is outsourced by the dealer to a licensed operator. MEI sells the lamps to the dealer.

This system satisfies both the user's business needs (distribution of initial costs, reduction in running costs, reduction in waste treatment costs, etc.) and environmental protec-



tion needs (attainment of zero emissions, fulfillment of discharger responsibilities, etc.). This service was launched in April 2002 and, as of June 2004, it has been contracted by some 380 businesses.

#### 4. Social Contributions in the 21st Century

Finally, I would like to close my presentation with expressing MEI's devotion to social contribution in the 21st century:

**4 Social Contributions in the 21st Century**

*Advent of a "ubiquitous network society" and the need for mankind to seek coexistence with the "global environment" ...*

*In these changing times*

*The Matsushita Group ...*

*Will continue delivering "security, safety and appeal" as well as "dreams and excitement" to customers around the world.*

**Panasonic**  
ideas for life

Thank you very much for your kind attention.



**Session-2**

# Environmental Benefit of "Rental Business"

Duskin Co., Ltd.  
Toshiki Yoshimura

Consumption behavior that until now has been based on the mass-consumption of resources and business activities that are the pre-text to that behavior are today at a big turning point.

Problems associated with abnormal weather patterns, such as global warming, acid rain, desertification and resource depletion, are now seen as real problems for our children. It is commonly recognized today that the time has come for individual consumers and businesspeople to change their systems of values and economics.

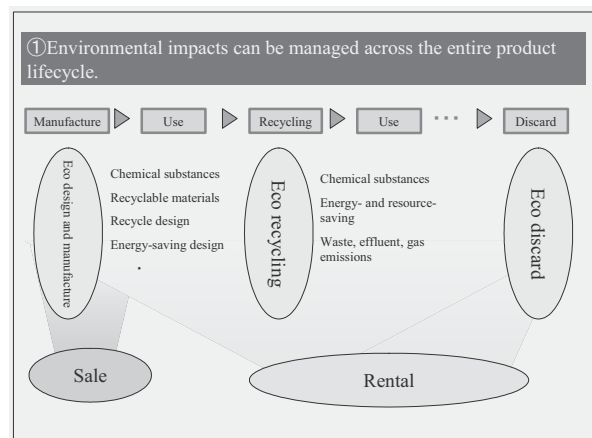
In these times, it is necessary to go beyond the simple relationship between business and customer providing products for consumption as has been practiced until now, and provide a combination of products and services that can satisfy customer needs by generating the maximum effect with the bare minimum of materials.

In that sense, "rental" may be one advan-

tageous direction in "providing combinations of products and services".

First of all, the environmental benefits of renting with Duskin can be generally summarized in the following six items. However, Duskin has not exhibited these benefits in full. If we look at them as the essence of "renting with Duskin," the possibilities have yet to be sufficiently understood and put into action by all parties, so the full advantages have yet to be manifested. Duskin continues to evaluate the situation.

## [1] Environmental impacts can be managed across the entire life cycle of a product.



By renting, customers can take advantage of the same products and features that they normally would buy, except that product ownership is not transferred to the customer. The product is managed as property of the business until the very end.

**Environmental Advantages of "Renting"**

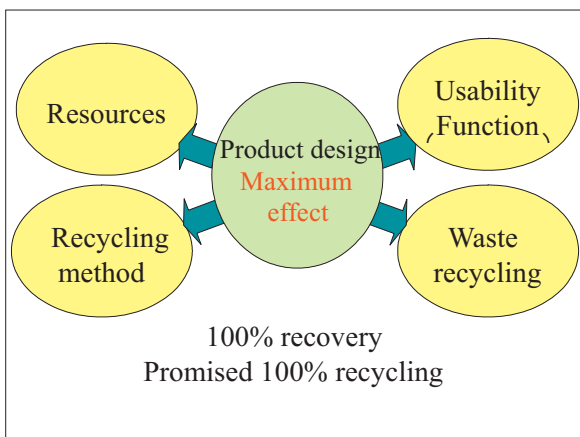
- ① Environmental impacts can be managed across entire life cycle of product.
- ② Similar used products can be collected and mass-processed
- ③ Can reduce quantity of introduced products by improving recycle technology.
- ④ Repairs are possible before repairs become impossible.  
※ Can use best repair method.
- ⑤ Products can be designed for secondary use.
- ⑥ Can provide products when needed.

All products are made with resources extracted from the earth. They sometimes are washed, repaired, or consumed parts are replaced, until the product is ultimately incinerated or buried and, hence, partially returned to the earth.

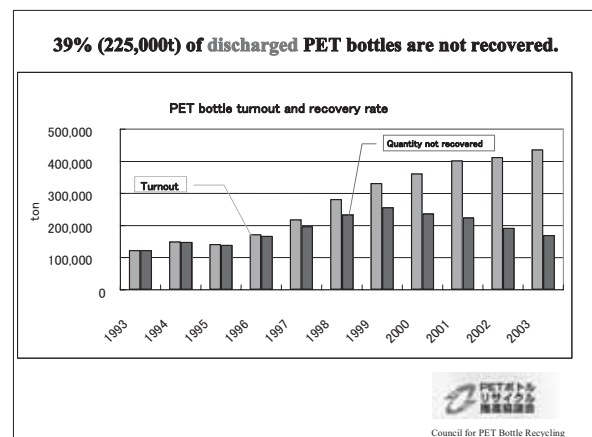
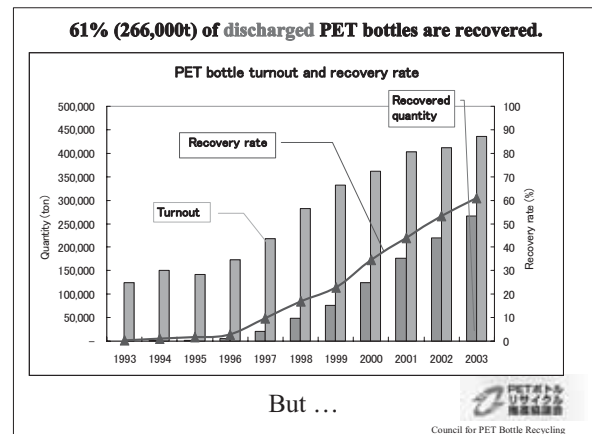
When renting, all elements regarding the product other than usage - that is to say, recycling and disposal of used products - can basically be managed as planned by the business. The big advantage here is that the business knows how the product is treated when it is time for disposal; products made of biodegradable plastic would not be incinerated, which would defeat the entire of purpose of their construction.

With Duskin products, the specifications are determined based on how they will be recycled or, in other words, based on temperature, detergent compatibility, how easy and safe it is to treat wastewater from washing, and whether to incinerate, bury or recycle the product when discarded.

With so many different ways of handling a product, the care that went into product design may be wasted, or product specifications may be designed in excess of what is normally necessary in order to take into account the worst possible handling scenario.



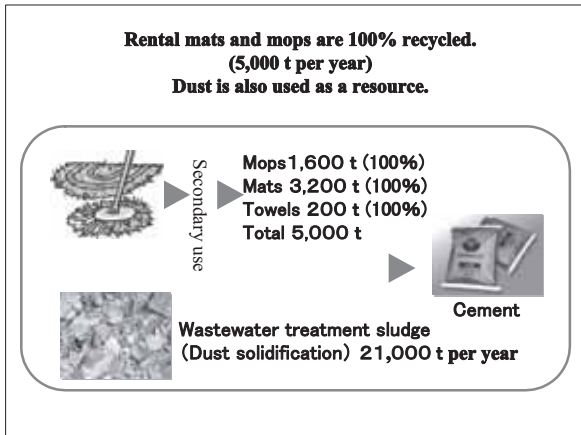
Moreover, another big advantage of renting is that all products that are rented out are returned (or at least are supposed to be



returned).

Recently, PET bottle recovery systems have rapidly been built and the recovery rate is uncommonly high. Nowadays, 60% or more of all PET bottles are recovered. Last year alone, more than 260,000 tons were recovered. However, when this same graph is looked at from the opposite approach, more than 220,000 tons have not been recovered. Though some of it appears to be recycled via other routes such as in China, even so, about 200,000 tons of the material held a beverage only once before becoming waste. Looking only at the amount discarded, the entire turnout of the year 1996 turned into waste. To recycle PET bottles, there are a number of technologies and considerations involved, but 220,000 tons of the total produced vanished without any results. As you can understand, it is very difficult to recover an item once it has been sold. In that sense, renting has a big advantage.





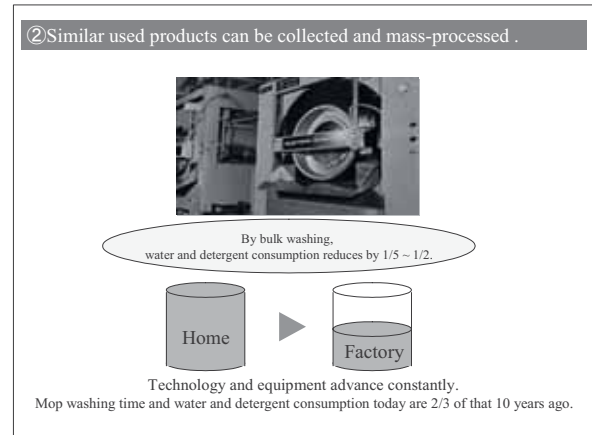
Duskin uses a product repeatedly and, if it cannot be used any longer, it is converted in various ways. All mops, mats and towels are used either as fuel or materials for cement. Moreover, the dust that clings to these mops and mats equates to 21,000 tons a year, but all of it is used as cement material.



As the next step, Duskin initiated activities to recycle all mop handles and air purification systems this year. Operations are already underway in the Kanto area.

**[2] Similar used products can be collected and mass-processed.**

The rental products collected from customers are grouped by category and mass-processed. Thus, the most effective dedicated equipment can be used and fewer supplies are needed. Especially with washing, it does not take twice the water, detergent and energy to wash two items. There is a major benefit in



grouping items because the same water, detergent and temperature can be used with product A and product B.

Compared to the small laundry loads done at home, washing at Duskin's factories requires anywhere from one-fifth to one-half the water, detergent and energy, and in some cases even less. Of course, there are products that cannot be recycled without special equipment and, hence, must be discarded.

We continue to make progress with product materials, construction and recycling technology. For example, the resources used to wash mops are two-third or less than those used 10 years ago. Since the effect is only needed for a limited number of products, such as the mops and mats we designed, we have many processes that would be viewed as illogical by other cleaning operators.

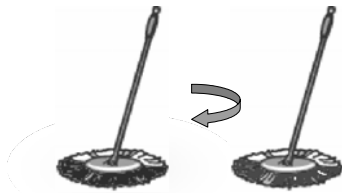
**[3] Renting can reduce the quantity of products introduced by improving recycling technology.**

Duskin products are used 20 or more times on the average. In other words, even if 100 persons were to use a given product, we would only need to introduce 5 new products. Since Duskin believes that the fewest products there are the better it is, we are naturally putting a lot of effort into long-lasting products and highly recyclable products.

In short, by making less, Duskin makes more (profit).

③ Can reduce quantity of introduced products by improving recycle technology.

A single product is used 20 times on the average.



Quantities can be sustained with 5% new products.

**[4] Repairs are possible before repairs become impossible.**

④ Repairs are possible before repairs become impossible.  
※Can use best repair method.



Most products do not break beyond repair right away.

More than half of the products that are discarded because of breakage started with minor damage that got bigger or minor damage that led to fatal damage.

It goes for homes, cars and electric products: if a small leak or damage, loose screw or broken part goes unnoticed and is left for a period of time, irreparable trouble can occur.

Similarly with Duskin products, small breaks and tears, and part damage and deterioration occur, but since the product is inspected at our factory every 2 or 4 weeks, repairs can be made before fatal damage that would require the product to be discarded occurs.

Moreover, since we are always developing

specialized repair tools and techniques, we minimize the number of products that would be discarded due to breakage before the product reaches the end of its service life.

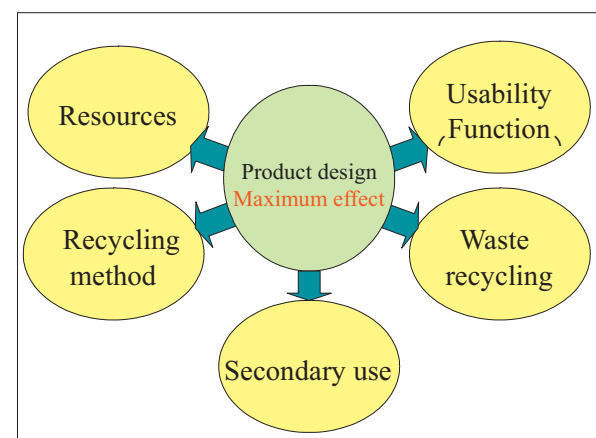
**[5] Products can be designed for secondary use.**

Duskin has long considered a product at the end of its service life as a "treasure" not to be discarded. Our workforce focuses knowledge on whether there is anything useful in these treasures that can be used for new needs of society. We call this a "treasure hunt".

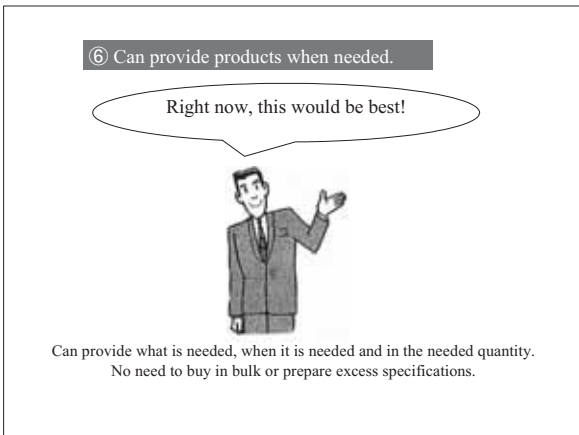
There are many home products that, at the end of their service life, are turned into industrial products and used over and over again.

At Duskin, a single product changes shape and form as it is used. And, when it can no longer be used in that form, it is recycled.

⑤ Products can be designed for secondary use.



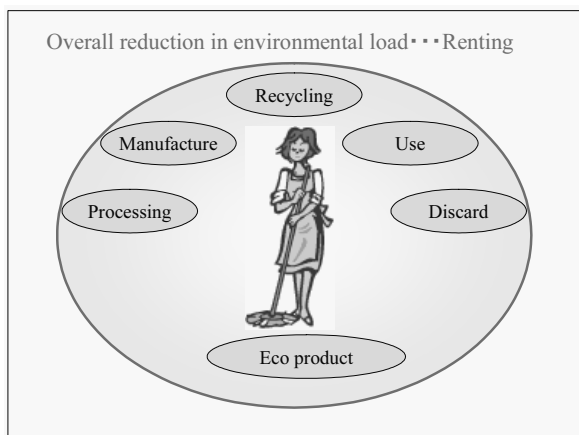
**[6] Renting can provide products when needed.**



When a person wants to buy something, often he or she thinks up various ways to buy it, such as buying large quantities at a low price or buying a slightly larger size. As a result, extras may become old and may be discarded without even being used, or the product may be too large to be used.

And, at times, it feels like torture not to be able to purchase a newer and better product just because some old ones are still left over.

In this regards, renting allows you to acquire only what is necessary, at the necessary time, and in the necessary amount. If, while using a product, the situation changes and a larger one is needed, it suffices to change out the product or the quantity as needed. And, products that are no longer used are not discarded but are used by someone who has need for them. Therefore, customers can use the product that best suits their needs.



In this way, renting has various advantages. Nonetheless, we as a provider must notice and understand the situation and deliver advantages that can be appreciated by customers and society.



As a final note, Duskin still relies on material things in some respects. That is because we are paid according to how many products we rent. If we were to double sales in this way, we would have to recommend to customers to consume twice as many resources. This is a serious dilemma.

But, when think about it carefully, a customer's need for a cleaning product is not a true customer need. He or she wants to use the cleaning product to clean somewhere. He ore she may attain his or her objective more effectively using a tool other than the selected product, or there may be other products or services that can do the job.

Furthermore...Duskin in the future

From providing just products→To providing both products and services

**Example**

Roach extermination system      Periodic checks and adjustments

**Extermination service**

「I want insecticide spread around.」→「I want to keep my place bug-free.」

By interpreting needs  
insecticide use has been reduced by 1/100 ~ 1/10,000.

For example, the extermination services that Duskin provided in the past used the same general method of spreading large quantities of insecticide underneath floors at the customer's request. The service aimed at ridding homes of infestations and preventing infestations in places where they were yet to happen.

Nevertheless, what customers really want is to never ever be overrun with insects. Today, the recommended approaches are to identify the initial stage of insect infiltration and use only the bare minimum of chemicals

needed or, with termites, use only a very small amount of a specially adapted chemical that, when eaten by larvae, prevents their development into adults. By using a method based on early discovery and forcing insects out before they proliferate, the job can be done with anywhere between one-hundredth and one-ten thousandth the original dose of the chemicals. Because the objective of these chemicals is not to directly annihilate entire communities of insects, safety is improved.

If Duskin had introduced a pricing system based on the amount of insecticide used, this kind of approach would never have been adopted.

We see "providing a combination of products and services," or "service's" will be granted more importance than "providing products only" in order to bring customers more "benefits" assuring safety and satisfaction. Nevertheless, as we said before, Duskin, in some ways, has not escaped from the system of collecting payment for products provided.

Since our founding, Duskin has carried out business as a "unification of discipline and economics". Duskin will continue to develop eco-friendly business so as to enjoy the safety, security, and high trust of our customers and society.

Thank you for your support.

Session-2


# Environmental Business of Sagawa Express

Environmental Preservation Promotion Department, Sagawa Express Co., Ltd  
 Kyoichi Bessho

Ladies and gentlemen, as you just heard me introduced, I am Kyoichi Bessho of Sagawa Express. I would like to thank the organizers for having me here today. So, let me get started. I will be talking about our environmental activities at Sagawa Express.

Japan, while consolidated sales were ¥760 billion with ¥42 billion in profit.

Company Overview	
<b>Sagawa Express Co., Ltd.</b>	
Head Office	Kyoto
Founded	March 1957
Employees	Approx. 40,000
Vehicles	Approx. 20,000
Branches	9
Offices	335
Sales	Approx. ¥760 billion (Consolidated), ¥720 billion (Unconsolidated)
Profits	Approx. ¥42 billion (Consolidated), ¥39 billion (Unconsolidated)
As of Mar. 2004	



I would like to begin with an overview of the company. Our headquarters are in Kyoto. The company was founded in 1957, starting with that Kiyoshi Sagawa, the founder of our company, transported commercial freight as a handyman between Kyoto and Osaka. Our main line of work is B-to-B freight, which has been around for some time, but as of recent, we have been handling an increasing amount of B-to-C packages. By the way, Yamato Transport started out with C-to-C, but I hear they have pretty much moved into B-to-C. There will be a brief explanation of that later. We have about 40,000 employees and a vehicle fleet of 20,000, consisting predominantly of delivery trucks. We have 335 offices across

*Environmental Protection Activities of Sagawa Express (Start)*

TRANSPORT COMMUNICATIONS  
**SAGAWA**

1997 ... United Nations Framework Convention on Climate Change (COP3) staged in Kyoto.  
 Kyoto Protocol adopted: Greenhouse gas reduction targets ... **Japan 6%, USA 7%, EU 8%**

**Sagawa launched Eco Project Promotion Committee.**

All directors sit on committee.

As a transporter whose primary means of transport is the truck,  
**“Air”** is the most important issue to address.

Global warming prevention: CO<sub>2</sub> reduction  
 Vehicle pollution prevention: NOx and PM reduction

Started introducing low-emission vehicles and promoting idling elimination.

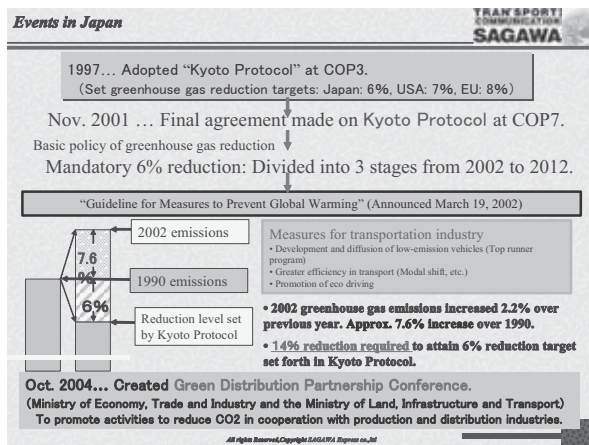
☆ Environmental protection is a corporate responsibility.  
 ☆ Environmental protection activities are an important management strategy.

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In 1997, COP3 was held in Kyoto. This was the year that our real environmental activities got started, so the history of our activity is still rather short. With our headquarters located in Kyoto, the local government and others came asking at the time if we could help out in some sort of way. We did not have an environment section at the time, so we launched an eco project promotion committee. The committee was chaired by our president and filled with directors, hence it was a decision-making body.

In our line of business, air is the most important environment issue. There are two air problems here, one is global warming, meaning a reduction of CO<sub>2</sub> (carbon dioxide), while the other is vehicle emissions, which means a reduction of NO<sub>x</sub> (nitrogen oxides) and PM (particulate matter). Since it is imperative that these two air problems be solved, we quickly

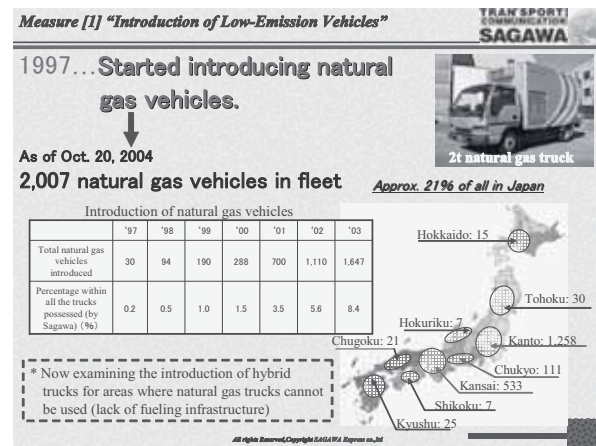
introduced low pollution natural gas vehicles that same year. Another thing we did, which is related to eco-driving, is to start instructing drivers to "stop idling" when parked. As for the company's stance on environmental protection, we of course view it as one of our social responsibilities as a company and have also positioned environmental protection activities as one of our important business strategies.



At COP3 in 1997, the Kyoto Protocol was adopted and Japan promised to reduce greenhouse gas emissions by 6%. This Kyoto Protocol has reached a final agreement in 2001 and the Japanese government decided, as the basic policy, to reduce greenhouse gas emissions in three stages over a period of ten years from 2002 to 2012. In March 2002, the government announced their Prospectus on Promoting Measures for the Prevention of Global Warming. Within that, as an undertaking by the transportation sector, they specify the "top runner" system whereby CO2 emissions are to be reduced by developing and diffusing low pollution vehicles without reducing its fleet size. Another undertaking is efficiency, which is a topic of discussion at this conference today. In our industry, this constitutes the approaches such as a modal shift. Furthermore, another thing that must not be forgotten is education. As a company, we are addressing the action of the transportation sector with awareness activities for all stakeholders, which

necessarily includes employees, their families, and the people in the communities where we do business.

Though it says October, 2004 at the bottom of the slide, it is not official yet. The Ministry of Economy, Trade and Industry and the Ministry of Land, Infrastructure and Transport plan to stage "Green Distribution Partnership Conference". The purpose of the conference is to jointly promote CO2 reduction activities in the manufacturing and transportation industries. I have heard that this conference will be officially launched next year.



One measure that we have taken is to introduce low pollution vehicles. Since 1991, we had been adding electric vehicles and methanol vehicles to our fleet, but we reexamined our strategy in 1997 and, since tests showed that natural gas trucks reduced both CO2 and NOx and did not emit any PM at all, we started introducing a large number of them into our fleet, realizing that this was the most environment-friendly vehicle around. As of October this year, we had about 2,000 natural gas trucks in our fleet. This is 21% of all the natural gas trucks in Japan. We are using these vehicles all across Japan, but there are problems concerning the use of natural gas vehicles in the countryside, because of the lack of infrastructure like filling stations. So, since October of last year, we have also been introducing hybrid vehicles instead of the natural

**Measure [2] "Greater Efficiency in Transport (Modal Shift)"**

**Converted major large truck lines that used expressway system to rail or marine transport, which produces lower environmental load.**

Rail transport    Converted approx. 23,000 truckloads per year to container transport.  
 Marine transport    Use ferries to carry approx. 4,000 truckloads per year.

CO<sub>2</sub> reduction effect: Approx. 47,000t/year (Rail transport: Approx. 45,000 t, Marine transport: Approx. 2,000 t)


Ministry of Land, Infrastructure and Transport:  
 Approved validation testing (TDM) to reduce environmental load (CO<sub>2</sub>) of major line distribution.

**Super Rail Cargo** (an express cargo train for container transport)  
 Service started on March 13, 2004.

Modal shift of major transport line between Tokyo and Osaka.  
 Approx. 56 containers per day  
 = Approx. 18,000 containers per year  
 Approx. 14,000 t-CO<sub>2</sub> reduction per year

- Helps solve problems associated with traffic regulations and jams.
- Reduces fuel consumption.
- Improves work and contributes to safety.

World's first container-back freight train



**Measure [3] "Greater Efficiency in Transport (Sagawa Ryutsu Center [SRC])"**

Handles all distribution operations for customer products from arrival, temporary storage, pricing and processing to shipping.

**Thoroughly streamlines distribution for all sectors.**  
 (Third party logistics [3PL])

Business description


- Outsourcing of distribution operations
- Distribution information support system
- Distribution space
- Outsourcing of distribution personnel
- Distribution consulting
- Sales of distribution materials

Ichinomiya SRC (Largest)

Tokyo SRC (Head office)

SRC and facilities with SRC capabilities  
**50 across in Japan**

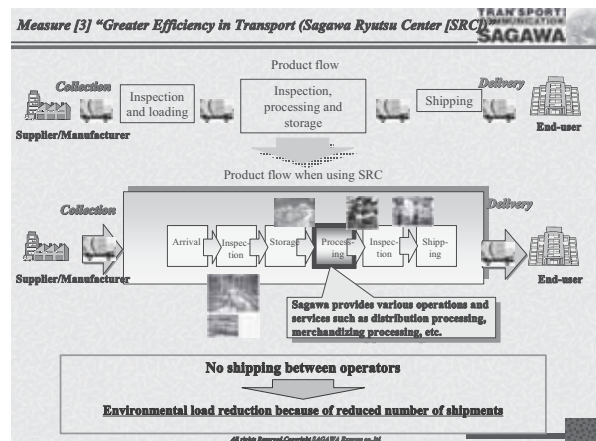
Volume handled by SRC  
**Approx. 70,000 parcel/day**



gas vehicles.

I would like to talk now about efficiency in transportation. The first point is a modal shift. A modal shift is the use of multiple means of transportation, which means a shift from trucks to more efficient combinations of trains, ships and aircrafts along primary transportation routes. Our primary means of transport is trucks, so we are converting them to trains and ships, which have less of a load on the environment than trucks do. In a year, we use rail transport equivalent to about 23,000 10-ton trucks and, with marine transport, mainly by ferries, it is about 4,000 trucks with the bulk. This modal shift has a CO<sub>2</sub> reduction effect of about 47,000 ton a year. Another effort of ours is the Super Rail Cargo service we jointly developed with Japan Freight Railway. Between Tokyo and Osaka, which has the largest amount of physical distribution in Japan and has difficult distance to shift, we have switched the freight traffic equivalent to 56 large trucks a day, or about 18,000 trucks a year. This reduces about 14,000 ton of CO<sub>2</sub> a year. These efforts have secondary effects such as helping to solve issues associated with traffic regulations and congestion, reducing fuel consumption, improving operations and contributing to safer transport. As you well know, a speed limit rule has gone into effect, which prohibits trucks from going over 90 kph, so the merits are diverse.

The second point in our efforts to enhance transport efficiency is the Sagawa Ryutsu Center (SRC). The SRC is a third party logistics operation that handles all distribution operations from various distribution process such as accepting packages from customers, temporarily storing them and attaching price tags to shipping them out. Operations are streamlined in every aspect. The content includes the outsourcing of distribution operations, an information support system, space, warehouses and tenants. We have facilities across all Japan to contract temporary staff, deploy personnel where needed, provide consulting and purchase supplies. There are 50 locations in Japan. In a single day, an SRC handles about 70,000 packages. When converted into CO<sub>2</sub>, the reduction effect is about 6,000 tons per year. It also reduces fuel consumption by 2,300 kl, which in monetary terms is a savings of about ¥200 million.



I have attempted to illustrate what I have just explained here. On top is the former package flow. In Japan, distribution used to flow like this; a package was brought to us by a supplier or by one of our own trucks, inspected and stored, then transported by truck to a wholesaler or retailer, where it was stored again, then transported by truck to the end user. By getting the manufacturer involved, we have streamlined the whole process from acceptance to out-shipping in the SRC, or in other words, made transport more efficient. This has made transport between businesses unnecessary and, because the number of shipments decreases, I can say that it reduces environmental load.

**Measure [3] "Greater Efficiency in Transport (Sagawa Ryutsu Center [SRC])"**

**Stronger in- and out-shipping system**

**SRC is a single system for in- and out-shipping. If using only Sagawa, products can be already arrived in the morning and you can start working right away.**  
 Handling shipping and warehousing on your own, you are subject to delivery delays and waiting caused by peculiarities of the local area, which can translate into overhead in the form of wasteful idle time and verification work.  
 To improve this, you can make full use of the SRC and gain the back-end support that will change distribution from a passive operation to an instantaneous response system.

**SRC support system**

Using SRC, you can control fluctuating distribution costs (space and personnel) that come with seasonal or daily changes in shipping volume.  
**Space ... Space in the building can be reserved in spots during busy periods.**  
**Personnel ... Personnel support can be provided to lessen the expense risks of keeping full-time personnel during that same period.**  
 (Advantages of using SRC)

Additionally, the system of in-shipping and out-shipping have been strengthened. Packages are already there when employees report for work in the morning, so they can start working from that moment. It used to be that employees waited for the packages to arrive and, once they did, then started working. When deliveries were late because of traffic and all sorts of things, that very much affected operations, but all of that has been eliminated. The SRC is helping customers to improve the efficiency of their operations and reduce expenses at the same time.

Another key aspect is the support system. In a nutshell, space is always a problem; there are seasonal ups and downs, but even during

★Introduce 7,000 natural gas trucks by 2012.  
 ★Install solar panels at some natural gas stands.  
 ★Improve transport efficiency by modal shift, etc.

**Reduce CO<sub>2</sub> emissions  
 to 6% below 2002 level by 2012.**

*Sagawa Express is making an aggressive challenge to protect the global environment.*

the busiest periods, we can minimize the flood by sharing space in our facilities. Moreover, in order to reduce the cost risks of full-time employees, we have a personnel deployment subsidiary operating inside the SRC. They can send personnel around during busy periods to help keep the customer's costs down.

Before closing, let me say that Sagawa Express is taking part in the WWF's Climate Savers Program. In this program, together with the WWF, an environmental NGO, we are staking a challenge to Japan's 6% CO<sub>2</sub> reduction target in whatever way we can as an individual company. We have plans to introduce 7,000 natural gas trucks by 2012 and install solar power chargers at natural gas stations, in order to achieve this 6% reduction. As you well know, the amount of CO<sub>2</sub> emissions from the transport sector has increased with respect to the 1990 levels. As a distributor, we want to challenge this 6% target and then, by introducing low pollution vehicles and taking steps to improve the efficiency of our operations, set even higher targets and stake a challenge at attaining them.

This concludes my presentation. Thank you for your attention.

\*\*\*\*\* Q & A \*\*\*\*\*

**Bleischwitz:**

I have a question regarding the activities you mentioned on the Modal Shift. Usually, in



Europe here, logistics companies are complaining that such a Modal Shift is difficult for technological reasons. Because the speed of which you lift containers is too slow. I wonder if your system in Japan might be superior or whether you are intending to invest in research and development in this area together with other companies.

**Bessho:**

I believe the situation is the same as in Europe. Before, Japan's freight trains went no faster than 110 kph, but we have enabled a top speed of 130 kph with the challenge of our Super Rail Cargo service. Tokyo - Osaka

is the maximum distance we can apply a modal shift without delays or drops in service level. However, there is still a difference between Japan and the West in this regard. In Japan, passenger trains are the mainstream in railway traffic. Freight train schedules accommodate passenger trains, which have priority on the rails, so it is hard to organize the train schedule that meets the needs of our truck operators. The Super Rail Cargo service, an entire freight train, finally started running just this year. As to whether it will grow rapidly or not, there are still many difficult problems to tackle in the future.