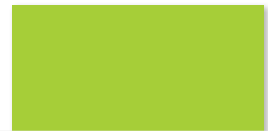




# Environmental Report 2012-2013 ORIX Group



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## Editorial Policy

“Environmental Report 2012–2013” has been published to familiarize stakeholders with the various Eco Services and Eco Activities of the ORIX Group.

The ORIX Group is working to help contribute to the resolution of the environmental issues faced by its customers and by society. In working toward that goal, the ORIX Group includes internal initiatives as well as its businesses: the Eco Services that it offers to customers. Accordingly, the bulk of this report is dedicated to introducing the ORIX Group's Eco Services, without strict adherence to environmental reporting guidelines.

Energy-related issues currently represent major challenges that must be addressed. These issues, such as reducing electricity consumption, conserving energy, and promoting the use of renewable energy, are closely related to environmental problems. Consequently, energy-related operations are also classified as Eco Services and are included in the scope of this report.

**Intended Readership:** This report has been published for the benefit of a broad range of stakeholders, particularly customers, stockholders and other investors, and ORIX Group employees.

**Scope:** ORIX Group Eco Services and Eco Activities

**Period Covered by the Report:** Fiscal 2011 (April 1, 2011 to March 31, 2012)  
The report also includes certain information that is outside this period.

**Publication Month:** October 2012 (Japanese-language edition)  
This English-language report is a translation of the Japanese-language edition.

## Website

In addition to this report, detailed information, examples, and news about ORIX Group Eco Services and Eco Activities are available on the following websites:

### ORIX Group website

<http://www.orix.co.jp/grp/en/>

This website introduces the ORIX Group's businesses and services as well as other corporate information. The Environment and Society section includes information about the ORIX Group's environmental policy and back issues of previous environmental reports.



### ECORIX Navi

<http://www.orix-eco.jp/en/>

This dedicated environmental website includes a wide variety of easy-to-understand information about ORIX Group Eco Services and Eco Activities that could not be included in this report.



The ORIX Group is focusing its combined strength to resolve environmental and energy issues through its business operations.



After the Great East Japan Earthquake, energy issues have become one of the most important themes needing to be addressed when considering the future development of the Japanese economy. All citizens of Japan are currently in the process of looking forward to the future as they search for a rational decision as to how we should go about building a society in which all may live with peace of mind.

Accordingly, Japan has identified green innovations as a new pillar for its future growth strategies. Based on this concept, the country aims to become a world leader in industrial education in areas such as promoting energy-saving and other themes that can be realized in the short-term as well as the creation of energy through renewable sources, energy storage, and other themes to be pursued over the medium- to long-term. I believe that the citizens of Japan are the driving force behind this movement.

The ORIX Group has been advancing its business in environmental and energy fields since it first began wind power operations in the mid-1990s. It now has operations in a wide variety of such fields. In the waste processing field, we provide area recycling systems and operate facilities that can completely recycle waste. Meanwhile, in the energy field, we conduct energy-saving businesses, an electric power trading business, solar power operations, and even operate a biomass power plant. We are expanding our operations in this area by financing and

investment in related businesses as well as directly operating such businesses. Our involvement in these service areas is vast and varied, spreading all the way from upstream areas to downstream areas. We will further advance these operations by leveraging the expertise we have accumulated throughout our years of experience. In Japan, we will focus on helping further the growth of the renewable energy industry. Overseas, we will concentrate on emerging countries in Asia and other regions. In these countries we aim to develop environmental and energy businesses that respond to the needs of each individual country.

The ORIX Group has continued to respond to customer needs with solutions that cannot be found anywhere else. Going forward, we will strive to contribute to society as an Eco Services Integrator by addressing the environmental and energy issues it faces through our business and thereby creating new value.

October 2012

A handwritten signature in black ink, which appears to read 'Yoshihiko Miyauchi'. The signature is fluid and cursive, written on a white background.

Yoshihiko Miyauchi  
Chairman and CEO



**Kazuhiro Ueta**  
Professor  
Graduate School of Economics  
Faculty of Economics, Kyoto University

**Makoto Inoue**  
President and COO

## Developing Eco Services that Leverage Strengths in Finance and Business

### —The ORIX Group's forward-looking expansion in Japan and overseas—

Recently, there have been significant changes in society's relationship with energy. Amidst these changes, the Innovative Strategy for Energy and the Environment was established, and a subsequent feed-in tariff system\*<sup>1</sup> was launched in July 2012. In this changing environment, the ORIX Group aims to grow its environmental and energy businesses into a new pillar of its operations. To discuss how we might go about this, we asked the opinion of Professor Kazuhiro Ueta, who is an active member in such organizations as the Advisory Committee on Energy and Natural Resources.

(Held in July 2012)

### A New Vision to Change the Energy Crisis into an Opportunity

**Inoue:** Following the Great East Japan Earthquake, there have been significant changes in how environmental and energy issues are viewed by the people and government of Japan. This has shifted society's focus from reducing CO<sub>2</sub> emissions to stabilizing electricity supplies and ensuring the safety of power generation facilities. The state of the Japanese economy has also become a topic of debate.

**Ueta:** That's absolutely right. The very foundation of energy issues has changed significantly. In the face of what is called the "energy crisis," or the "electricity crisis," it seems as though issues related to CO<sub>2</sub> emissions have become less of a focus. At present, society is undergoing notable changes. I think that, in this environment, it is important for private-sector companies to develop management visions that take into account the energy crisis and how they will respond to this crisis. I therefore believe that we will see the creation of various new business fields, such as renewable energy and electricity systems.

In the energy field, I expect that usage of renewable energy and cogeneration\*<sup>2</sup> systems will increase. Both systems utilize regionally distributed networks, meaning that each individual power supply is relatively small. I think these fields have the potential to grow into an expansive field for green innovations by coordinating energy linkage and storage functions and further enhancing these by employing information technologies.

**Inoue:** Exactly. Significant changes in frameworks create important business chances. However, private-sector companies must also keep generating revenues as their top priority.

**Ueta:** Revenues are an important issue for companies. I was personally involved in formulating the pricing schemes for the feed-in tariff system for renewable energy. The purchase prices are guaranteed for 20 years, and I believe that this will be a powerful stimulus for businesses.

**Inoue:** In regard to solar power, I think a purchase price of ¥42 per 1kWh will make business development feasible. The ORIX Group's operations in this field are wide ranging. We sell solar power systems, we conduct solar power generation by renting

\*1. The feed-in tariff system is a system in which the electricity generated by renewable power sources, such as solar and wind power, is purchased at a fixed price by power companies over a long-term period.

\*2. Cogeneration systems make heated water or steam using waste heat from electricity generation, thereby allowing for electricity and heat to be supplied simultaneously.

the roofs of factories and other facilities on which we install solar panels, and we even have mega solar operations. Other renewable energy business themes include storage batteries and geothermal power.

### Businesses Founded on Environmental Principles

**Inoue:** The ORIX Group continues to expand its business. We have evolved from only providing financing to directly operating our own businesses. However, as the scale of our business increases, so does our energy usage, which in turn leads to increased CO<sub>2</sub> emissions.

**Ueta:** I think it is possible for all business operations to be founded on environmental principles. For example, I believe that environmental principles can be included as a fundamental part of real estate development operations, rather than simply as secondary environmental measures. By employing environmentally friendly technologies in such a business, an environmentally friendly real estate business can be established in which housing development entails a shift to smart houses and electric vehicle batteries serve other purposes such as power supplies for homes. In this way, there are areas in which a traditional business can be transformed into something different by changing what is set as its baseline.

**Inoue:** Seeing as nuclear power plants are being restarted in Japan, it seems as though the emphasis on low-carbon operations is being toned down. I therefore hope that we see increased activity in areas like those you speak of.

**Ueta:** It is important that we do not let the emphasis on low-carbon operations be toned down. This is because Japan is at a significant turning point in the history of electricity systems. While it is likely that there will be notable growth in smart houses and other technological fields in which Japan is particularly strong, it is also possible that such growth will be stifled by the restarting of nuclear power plants. In conducting a business, it is important to be able to envision future growth. I think the feed-in tariff system gives birth to many such visions, and I hope that the government of Japan will continue to institute such vision-inspiring measures. However, this does not address issues related to business infrastructure. For instance, the majority of candidate sites for geothermal power generation facilities are located in national parks. This means that, even if the potential for business development exists, this potential cannot be realized. It is therefore essential that regulations related to renewable energy be relaxed and usage plans be formulated.

**Inoue:** Likewise, progress of offshore wind power ventures is impeded by issues such as those pertaining to fishing rights. Tidal power is also affected by fishing rights and other issues, stifling advancement despite how beneficial this power source could be to Japan.

**Ueta:** Unlike nuclear and thermal power, the availability of renewable energy varies between different regions. In this manner, it is very much like a “regional natural resource.” This makes it similar



in nature to fishing and agriculture. Therefore, it is important for those in the wind power business to develop their operations in a manner that creates a beneficial win-win situation for fishermen and farmers. It is also important to create success stories in each region. This will make these ventures much more inviting, thus leading to a rise in the number of operators wishing to undertake such efforts.

**Inoue:** The idea of incorporating an environmentally friendly element into an electricity business is highly appealing. However, the initial investment associated with such a transformation is substantial, and consequently it has been previously very difficult to take this first step after one considers profitability.

**Ueta:** That’s exactly right. In Japan, power companies tend to have a monopoly on the electricity in their specific regions, which serves as an obstacle for the appearance of various new power generation ventures. However, I think we are entering into an era in which the most progress will be seen among companies that make overarching changes to these business systems.

### Transformation from a Financer to a Business Operator

**Ueta:** I had always viewed the ORIX Group as a financer, and I was therefore highly surprised that you were able to advance into the waste field.

**Inoue:** ORIX is quick to progress forward. When a manager sets their sights on a new business field, we do not hesitate to advance into it. However, we sometimes run into trouble when entering into new fields.

One example can be seen with regard to the Agatsuma Biomass Power Plant in Gunma Prefecture, which we started operating in fall 2011. The price of wood chips used as fuel for this plant rose higher than we had initially expected.

**Ueta:** Why did the price rise so high?

**Inoue:** The rise in price was due to the appearance of other prospective buyers for the wood chips. Power plant operation and other businesses that require facilities often require long development periods, and are therefore exposed to the risk of actual conditions differing from initial expectations. Our waste treatment plant in the town of Yorii, Saitama Prefecture, is now operated smoothly and with improved profitability, but realizing this took several years. Likewise, it is important that we take a long-term perspective toward the Agatsuma Biomass Power Plant and work to get it on the right track as soon as possible.

**Ueta:** Nobody is hesitant to enter into businesses that are guaranteed to succeed. For more questionable fields, it is



### Kazuhiro Ueta

Graduate School of Economics

Faculty of Economics, Kyoto University

Specializing in environmental economics, Professor Kazuhiro Ueta is active in a number of organizations. He is a member of the Advisory Committee on Energy and Natural Resources and the Fundamental Issues Committee of the Agency of Natural Resources and Energy of the Ministry of Economy, Trade and Industry; head of the FIT and the Price-Adjustment Committee of the same ministry; and chairman of the Osaka Energy Strategy Committee.

important to jump in and lay foundations as soon as you realize their potential. If not, you may miss your chance.

**Inoue:** It is impossible to tell whether or not a business will be successful until you actually try it. While we faced risks during the development process for the Agatsuma Biomass Power Plant, we also managed to accumulate technological and other expertise. Looking ahead, we are considering the possibility of launching biomass operations overseas as well.

You mentioned that you previously viewed the ORIX Group as a financier. In actuality, the portion of our business portfolio represented by leases and financing continues to shrink, while the portion representing businesses we operate directly continues to rise. For example, operating facilities such as golf courses, aquariums, and hotels have become a key revenue source in ORIX's real estate business. It does concern me though that some people have trouble understanding the ORIX Group's business.

### Managing "Natural Capital" and Stimulating Regional Economies

**Ueta:** Sustainability has become a subject of debate around the world. One area on which these debates focus is ecosystems. The term natural capital<sup>\*3</sup> has been used to refer to the stock of nature needed for the maintenance of ecosystems worldwide. There are those that hope to maintain the levels of this capital, and increase them if possible, so that this capital can be passed on to the next generation. Forests are a representative example of natural capital, and the maintenance of forests is viewed as a venture for managing natural capital. In other words, the act of "managing" the "capital" that was previously not seen as an aspect of business operations has come to be viewed as a business in itself. I believe that such businesses will need to be considered as options in the future.

**Inoue:** I feel that fishing and agriculture need to change their methods going forward, and I therefore think that we will see an

increase in opportunities for private-sector companies to participate in and further invigorate these areas.

**Ueta:** Fishing and agriculture both utilize regional natural resources, and renewable energy is an example of such regional natural resources. If knowledge regarding the management of natural resources is accumulated and properly incorporated in these areas, it will help stimulate regional economies.

Financing will help further the advancement of such initiatives. As you know, one wind power system requires substantial investment. Accordingly, such projects cannot proceed without financing.

**Inoue:** Many investors expect their investments to generate stable revenues over a period of 20 years. It is the job of financiers to arrange an appropriate lineup of such investors. The ORIX Group possesses extensive financing expertise, and is thus able to incorporate this expertise into its business development efforts.

**Ueta:** More and more operators are undertaking new power generation ventures. I think it would be most beneficial if more people would appear who could serve as regional financial institutions and offer such operators advice from a financing perspective. This would help these regions develop further.

**Inoue:** One of ORIX's businesses is the operation of the Kyoto Aquarium. Our aim was to operate this facility in a manner that is closely linked with the surrounding community, and for that reason we built it with the assistance of community members and reflected their opinions. Interestingly enough, ORIX's name was not attached to the aquarium, and there are some people who do not know that it is operated by ORIX. Likewise, ORIX's name is not attached to the Sumida Aquarium, which was opened at the foot of TOKYO SKYTREE®.

**Ueta:** That's a very interesting way to run a business.

**Inoue:** We thought that refraining from using the ORIX name would make the aquariums more easily accepted by the public. It is difficult to run a business without connections to the community. By using the name "Sumida Aquarium," we were able to win the support of people in Sumida City.

**Ueta:** From the Company's perspective, using its name would of course be best. Rather than taking that approach, however, you mean to say that you decided to build these establishments together with the community.

### Environmental Needs in Asia and Low-carbon Development

**Inoue:** Recently, environmental awareness has been on the rise in China, and water pollution has become a pressing concern. In 2010, ORIX entered into a strategic alliance with the Chinese Academy of Sciences<sup>\*4</sup>. The academy possesses technological capabilities, but lacks operational know-how, which they look to gain from their relationship with ORIX. We are currently

\*3. Natural capital is the application of the economic concept of capital to natural ecosystems. It classifies mountains, forests, oceans, rivers, air, soil, and other sources of natural services and goods, such as mineral resources and fossil fuels, as a stock of natural capital. Elements of the natural environment, animals that make up ecosystems, and, by a broader definition, the entire biosphere can be viewed as natural capital.

\*4. The academy is a high-tech general resource facility and China's foremost research facility for natural sciences. It is under the direct supervision of China's State Council.



considering several different projects that may be conducted together with this organization.

In India, meanwhile, we are trying to introduce energy-saving technologies for buildings. However, the market is not displaying much interest. At the moment, it seems to be placing more emphasis on economic development.

**Ueta:** Developing the economy in a low-carbon manner and quickly introducing renewable energy systems are issues that are gaining much attention around the world as of late.

**Inoue:** It is true that we receive many inquiries relating to this matter. However, I feel it is ORIX, which was a forerunner in environmental and energy fields and is also capable of supplying funds, that must guide customers to the decision to employ renewable energy systems or other low-carbon options.

**Ueta:** Low-carbon development is a very substantial business. It has a massive market and contributes to international society. I therefore think you should make a little better use of your knowledge to place this business more firmly on the track to growth.

**Inoue:** This movement seems to have lost speed even in Europe, which was a leader in low-carbon development. However, this could be seen as a result of the sovereign debt crisis. If this movement was progressing smoothly, we would be seeing faster progress in Brazil and other major Latin American countries.

**Ueta:** Looking at such factors as the recent actions of Rio+20, the United Nations Conference on Sustainable Development, one cannot help but think that the movement has lost its leaders. Previously, the European Union had played a leadership role, but the current sovereign debt crisis situation has made it difficult for the union to continue this undertaking. While it would seem possible that emerging countries could take on a slightly heavier burden, discussions in these countries tend to lean toward prioritizing economic development, which is most unfortunate.

**Inoue:** That is unfortunate. I have heard that you hold educational forums for future manager candidates in China. I feel that such skilled Chinese people have a sense of danger with regard to their situation. This can be seen in the fact that, as China imports a great deal of oil, the country is highly interested in developing renewable energy technologies.

**Ueta:** Rather than individual technologies, people in China tend to be more interested in expertise regarding entire systems.

**Inoue:** Japanese companies seem to believe that they are 20 or 30 years ahead of China in terms of technologies. However, the people of China believe that they have already caught up with Japan. This means that talk of technologies rarely leads to business opportunities. Japanese companies make quality products, but their involvement ends with the sale of a product. Conversely, companies in the United States and China look at systems as a whole, which will help them continue to succeed. Sadly, this is an area in which Japanese companies are lacking.

**Ueta:** Does this mean that the ORIX Group intends to develop its business with a focus on overall systems?

**Inoue:** I would say so. Previously, our leasing business generated revenues in the form of interest rate spreads. However, this does not allow us to realize large returns. It is clear ORIX cannot grow significantly without developing systems and businesses, and we are shifting in this direction accordingly.

### Expectations of the ORIX Group

**Ueta:** The ORIX Group has defined its aim of “solving environmental and energy issues through business.” I think that such a management policy will also help resolve issues at actual operating sites.

I also believe that the presence of such a management policy will help clarify the direction in which the Company is aligned. This will be useful when discussing stability and the management of natural capital as well as when working together with and forming consensus with local communities.

**Inoue:** I believe so, too. The ORIX Group may be strongly linked with finance in people’s minds, but I am committed to making it known that we also conduct business operations, and I am also committed to forming sustainable bonds with members of the community. I thank you very much for your time today and the opinions you have offered.

**Ueta:** I would also like to thank you for giving me this opportunity.

# Overview of the ORIX Group

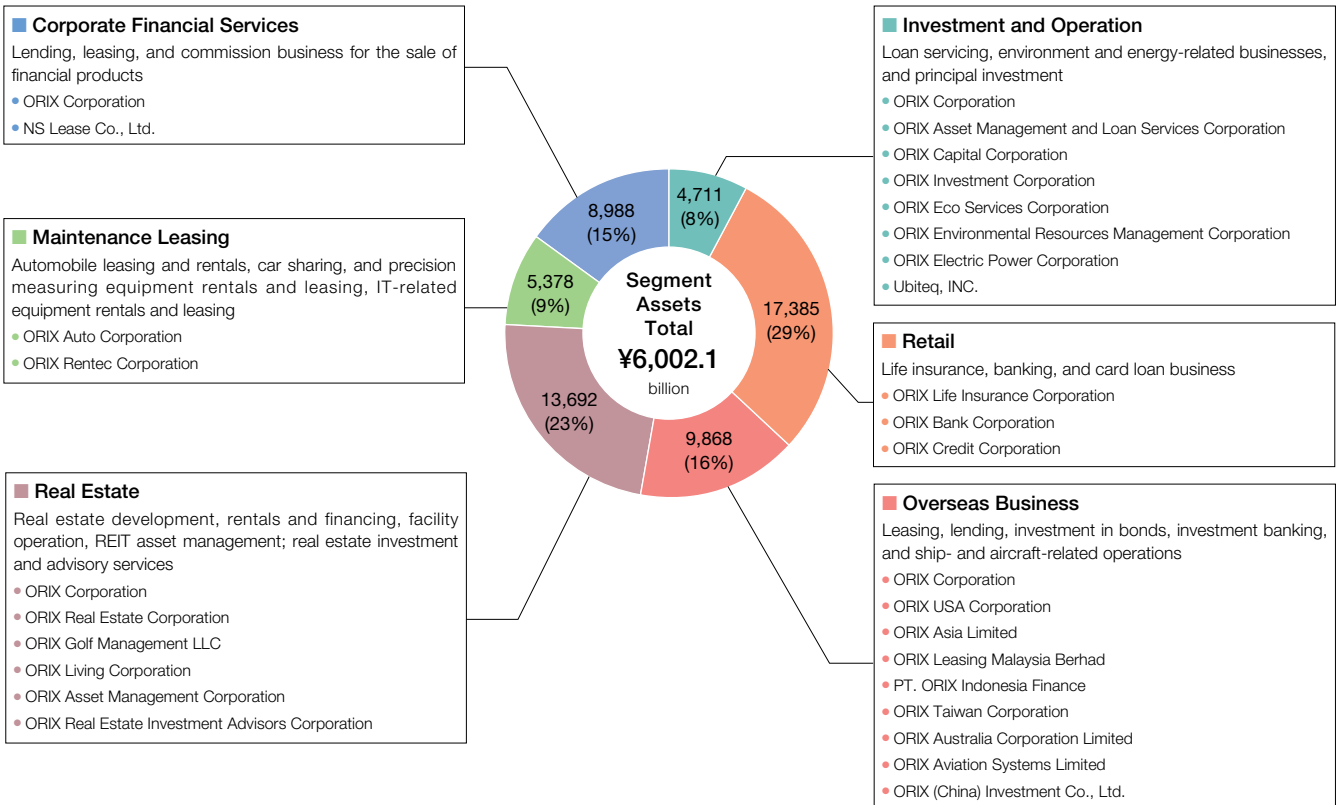
## Company Profile

Company Name	ORIX Corporation
Established	April 17, 1964
Location	Mita NN Bldg., 4-1-23 Shiba, Minato-ku, Tokyo, Japan
Representatives	Chairman and CEO: Yoshihiko Miyauchi President and COO: Makoto Inoue Deputy President and CFO: Haruyuki Urata
End of Fiscal Year	March
Shareholders' Equity	¥1,380,736 million

Employees	17,488 (12,628 in Japan; 4,860 overseas)
Issued Shares	110,254,422
Stock and Security Exchange Listings	Tokyo Stock Exchange, First Section Osaka Securities Exchange, First Section (Securities Code: 8591) New York Stock Exchange (Trading Symbol: IX)
Main Business	Diversified Financial Services
Group Companies	Consolidated: 721; Affiliated: 96
URL	<a href="http://www.orix.co.jp/grp/en">http://www.orix.co.jp/grp/en</a>

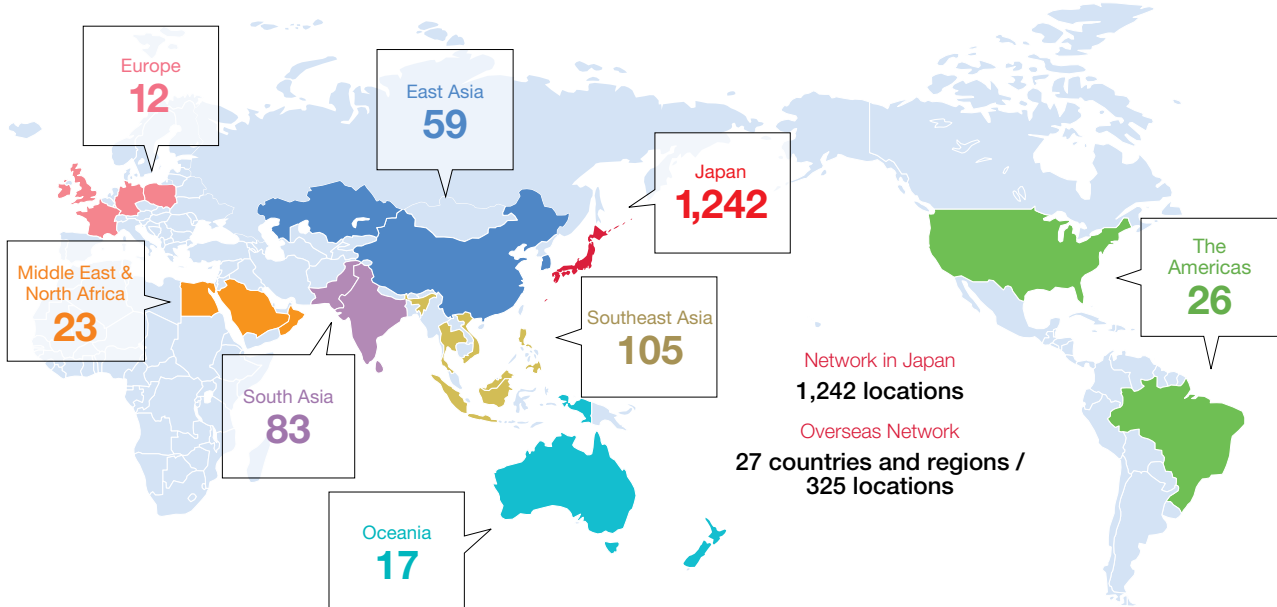
As of March 31, 2012

## Business Segments and Main Group Companies



As of March 31, 2012

## Group Network

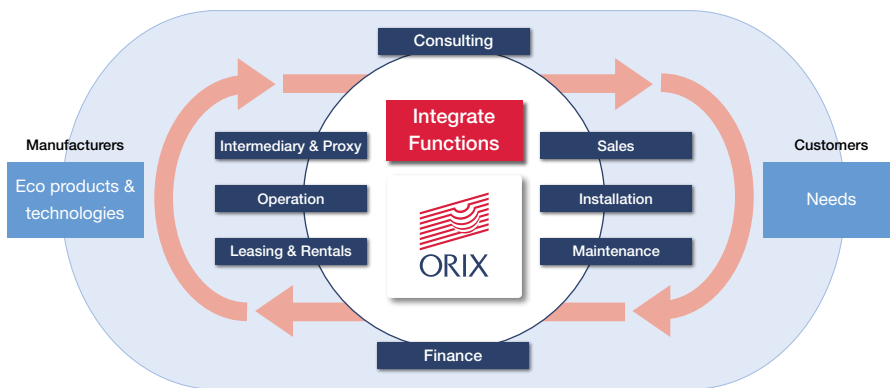


As of September 30, 2012



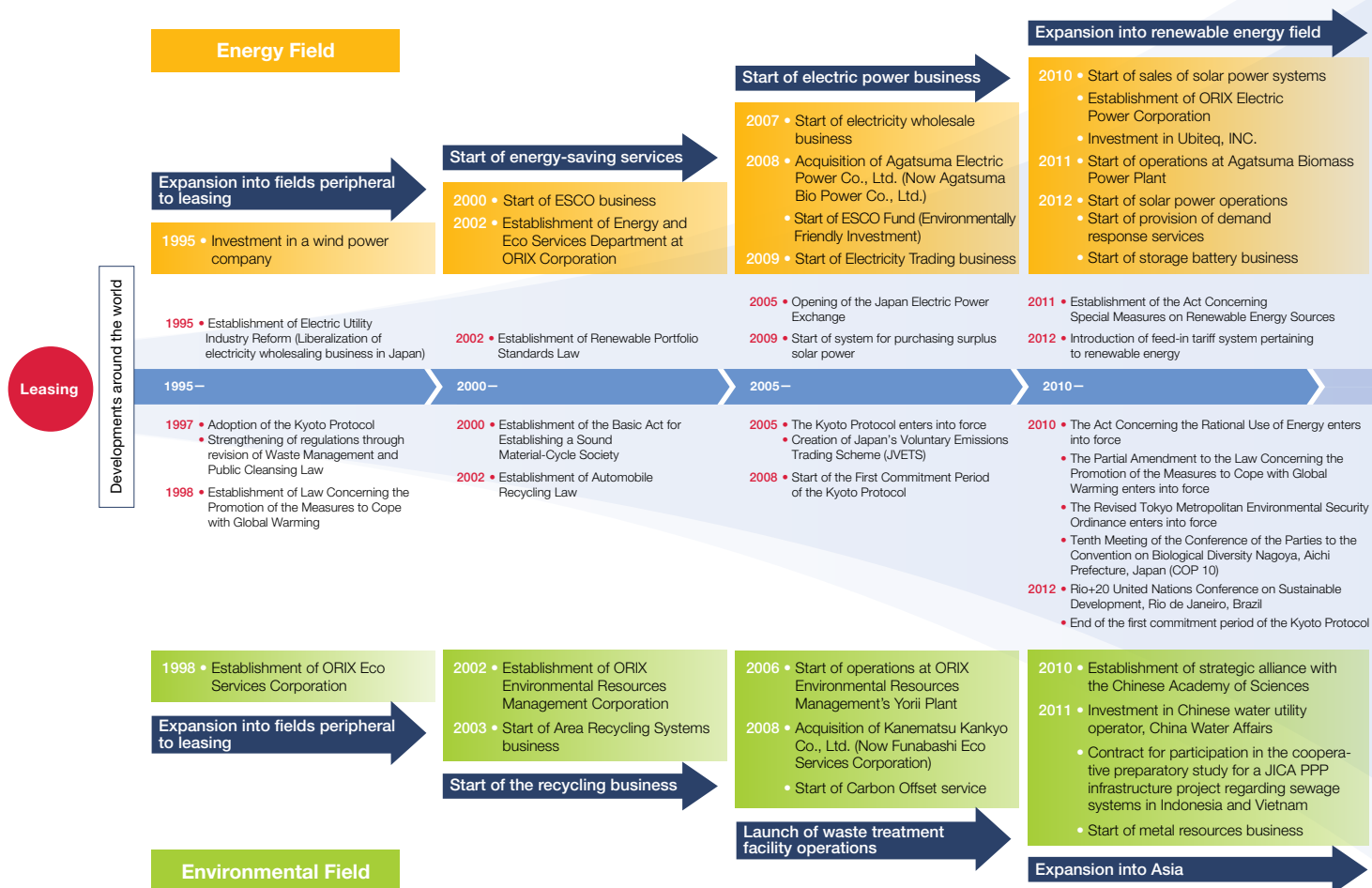
## As an Eco Services Integrator

The ORIX Group entered the field of environmental and energy businesses in the mid-1990s. As an Eco Services Integrator, the ORIX Group provides a comprehensive range of functions that respond to customer needs for eco products and technologies as well as energy.



## Progress and Development of ORIX's Environmental and Energy Businesses

Since it started in operations in 1964, ORIX has continued to pursue new businesses and provide revolutionary financial products and services. Originally created as a leasing company, throughout the process of developing its business foundation, ORIX has continued to accumulate specialized expertise in both finance and tangible assets. It has subsequently refined and utilized this expertise to evolve its business by expanding into neighboring fields. In the environmental field, ORIX promotes reusing and recycling resources by efficiently recovering items across Japan for which leases have expired and then selling these used articles. These ventures have helped the Company further accumulate expertise, and it is utilizing this to expand its business from these areas into new fields such as the operation of waste treatment facilities. In the energy field, ORIX has a diverse range of operations including the provision of energy-saving services, an electric power business, and renewable energy generation operations.



# ORIX Group Eco Services and Eco Activities

The ORIX Group is committed to contributing to society by solving environment and energy issues through its business and eco activities.

## Eco Services



### Energy

#### Renewable Energy

Sales of Solar Power Systems



ORIX

▶ P.12

Biomass Power Generation Business



Agatsuma Bio Power

▶ P.13

Mega Solar Power Generation Business



ORIX

▶ P.11

Wind Power Generation Business



ORIX

▶ P.12

Rooftop Solar Power Generation Business



ORIX

▶ P.12

#### Electric Power

Electric Power Trading Business

ORIX

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Bulk Electric Power Purchasing Service



ORIX Electric Power

▶ P.14



### Finance and Services

Eco-lease Promotion Business

ORIX

▶ P.27

Testing Services for Renewable Energy Related Equipment



ORIX Rentec

▶ P.26

ESCO Fund

ORIX

▶ P.27

Rentals



ORIX Rentec

▶ P.26

Environmentally Friendly Loan Guarantee System

ORIX

▶ P.27

Used Equipment Sales and Purchasing



ORIX Rentec

▶ P.26

Carbon Offset Service



ORIX

▶ P.27

Water-related Business



ORIX

▶ P.28-29

Sales of Carbon Credits

ORIX

▶ P.27

Tradable Green Certificates



ORIX

▶ P.28



### Resources and Waste

Area Recycling Systems



ORIX Eco Services

▶ P.24

Sophisticated Waste Processing Facility (Gasification Furnace)



ORIX Environmental Resources Management

▶ P.25

Industrial Waste Processing, Collection and Transportation



Funabashi Eco Services

▶ P.25

Office Relocation Support Service



ORIX Eco Services

▶ P.25

## Eco Activities

Geothermal Power Generation



ORIX Real Estate

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Enosui ECO



ORIX Real Estate

▶ P.18

Mangrove Planting



ORIX Baseball Club

▶ P.20

Golf Course Initiatives



ORIX Golf Management

▶ P.19

SANGO ORIX



ORIX Group

▶ P.20

Hotel Food Recycling Project



ORIX Real Estate

▶ P.19

Environmental Impact Reduction Initiatives for End-of-lease Items



ORIX

▶ P.24

Support for Regional Environmental Activities



ORIX Environmental Resources Management

▶ P.25

### Energy Conservation

ESCO Business



ORIX

▶ P.15

“Hatto Watto” Demand Response Service

ORIX

▶ P.16

Greater “Visibility” and Automatic Control of Electric Power **UBITEQ GREEN SERVICE**

Ubiteq

▶ P.16

### Batteries

Storage Battery Business



ORIX

▶ P.13

## Real Estate

Eco-friendly Real Estate Development



ORIX Real Estate

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Aquariums



ORIX Real Estate

▶ P.18

## Automobiles

ORIX Telematics Service “e-Telematics”



ORIX Auto

▶ P.21

Rental of Electric-assist Bicycles “e-bike”



ORIX Auto

▶ P.22

Car Sharing



ORIX Auto

▶ P.22

Maintenance Services

ORIX Auto

▶ P.22

Leasing and Rentals of Electric and Hybrid Automobiles



ORIX Auto

▶ P.22

Auctions and Certified Used Car Sales



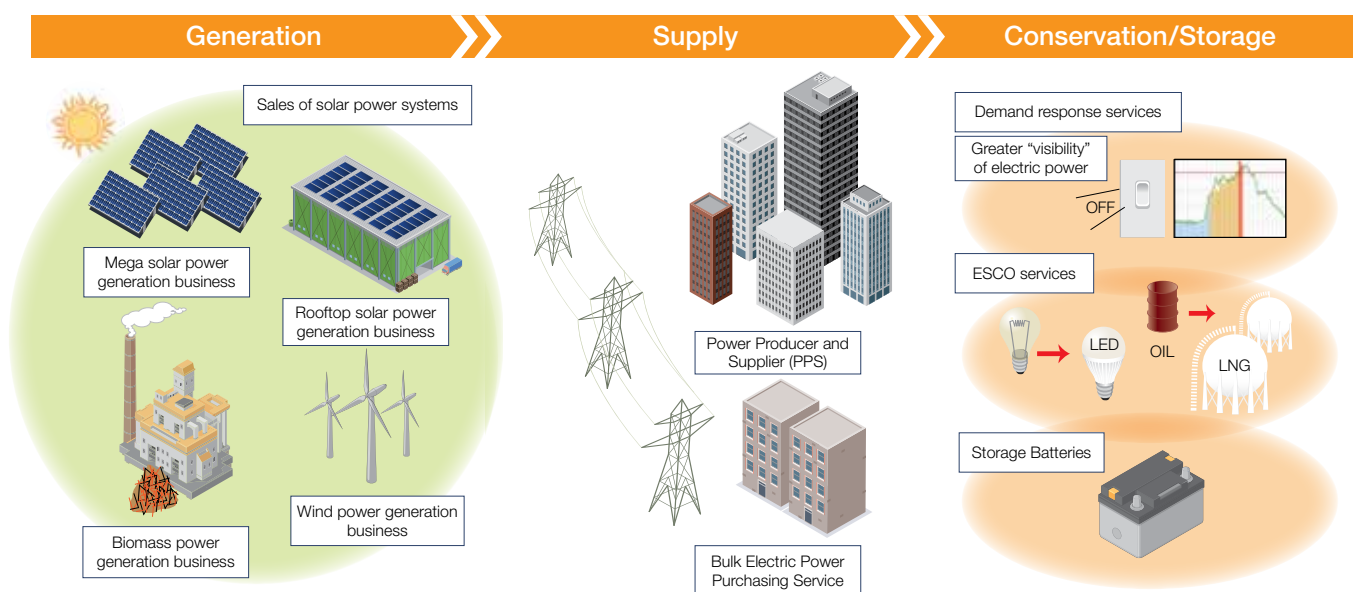
ORIX Auto

▶ P.22



Sweeping across Japan are debates about how to overhaul electric power systems in a manner that strikes a balance between economic development and the safety and security of people’s lives. Amidst these debates, government policy regarding energy in Japan is undergoing great changes, and the driving force behind these changes is the Japanese population. In this environment, the ORIX Group is responding to the energy needs of customers in a variety of fields, extending from upstream to downstream areas of energy services. Specific fields include the generation of energy from renewable sources, supply of lower priced electricity, and provision of energy-saving services.

## The ORIX Group’s Energy Businesses



## Renewable Energy

Usage of renewable energy is expanding around the world as people aim to stabilize energy supplies, develop green economies, and address global warming. In Japan, a feed-in-tariff (FIT) system was introduced for renewable energy in July 2012. Meanwhile, ORIX is helping increase the usage of energy from solar power, biomass, and other renewable sources.

### Solar Power

#### Mega Solar Power Generation Business

**ORIX Corporation**

ORIX is renting unused land owned by companies and municipal governments across Japan to build large-scale mega solar power generation facilities that will have maximum generation capacities of more than 1MW (1,000kW).

Going forward, ORIX will work to further promote the use of renewable energy, an initiative that will be financed by raising funds and procuring capital from an increasingly diverse range of sources.

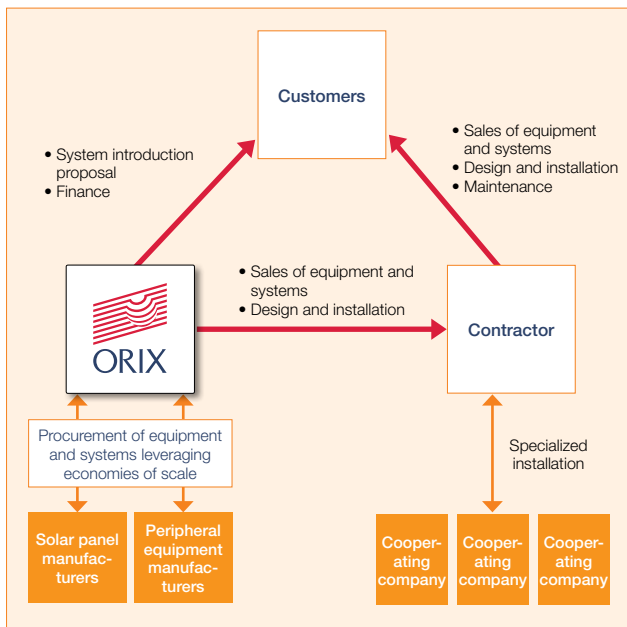


Artist’s rendition of completed mega solar power facility in Mitoyo City, Kagawa Prefecture (maximum output 2.2MW)

## Sales of Solar Power Systems

ORIX Corporation

By procuring equipment directly from manufacturers and leveraging its nationwide network of installation companies, ORIX offers low-cost support for customers investing in solar power systems. ORIX offers customers one-stop support for all aspects of introducing solar systems to help smooth this process. This entails selecting appropriate equipment from multiple manufacturers and formulating financing plans that optimally meet customers' needs by utilizing leases and installment payment plans, issuing prepayments on behalf of customers, or renting equipment. Other aspects of this support include providing support in certifying facilities for the feed-in-tariff systems, installing equipment, performing post-introduction maintenance, and providing a wide range of other services.



### Case Study

#### Fuji Logicargo Co, Ltd.

ORIX sold a solar power system to Fuji Logicargo, a transporter and warehouse operator located in Kawachi-gun, Tochigi Prefecture. The system, which was installed on a warehouse roof, is expected to supply all of the electricity used by the warehouse via solar power. In addition, this active introduction of renewable energy systems allows Fuji Logicargo to advertise its environmental awareness to customers.



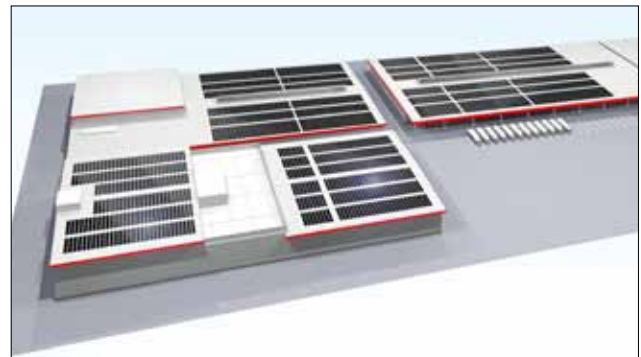
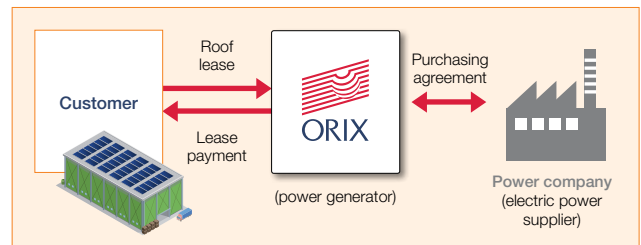
Roof of Fuji Logicargo's warehouse equipped with 2,300 solar panels (maximum output of 345.8kW)

## Rooftop Solar Power Generation Business

ORIX Corporation

ORIX conducts a solar power generation business in which it leases the roofs of factories, warehouses, and other large-scale facilities from its customers, and installs solar power systems on them. This allows ORIX to realize even higher levels of efficiency in power generation by fully utilizing customers' facilities in addition to unused land owned by companies and municipal governments. Further, not only does this venture enable customers to utilize their assets more effectively, it also brings benefits such as the fact that the heat shielding properties of the solar panels help improve the efficiency of air-conditioning equipment within the facilities while simultaneously limiting the degree to which the roofs deteriorate due to aging.

In addition, we are further accelerating the development of this business by placing solar power systems on the roofs of commercial and other facilities belonging to the ORIX Group.



Artist's rendition of completed solar panels on roof of Hokuriku Coca-Cola Bottling's Tonami Plant

## Wind Power Generation Business

ORIX Corporation

ORIX is investing in four wind power generation ventures with a total of 34 units. The combined generation capacity of these units is 35,950kW.

- Akitaaraya Wind Farm (Akita Prefecture) 6,800kW
- Tachikawa Wind Farm (Yamagata Prefecture) 3,200kW
- Goto-Kishiku Wind Power Plant (Nagasaki Prefecture) 1,200kW
- Nikaho Kogen Wind Power Plant (Akita Prefecture) 24,750kW



Akitaaraya Wind Farm

## Biomass Power Generation Business

Agatsuma Bio Power Co., Ltd.

Agatsuma Bio Power Co., Ltd. operates the Agatsuma Biomass Power Plant, a wood chip-fired thermal power station located in Gunma Prefecture. Wood chip-fired power generation works by using wood chips\*1 as fuel to heat a boiler and then using the steam from the boiler to power a turbine to generate electricity. The use of biomass\*2 as an alternative to fossil fuels not only helps to reduce CO<sub>2</sub> emissions but also enables more environmentally friendly power generation through the use of thermal recycling\*3 technology. Furthermore, the use of biomass helps to promote the optimal use of waste wood materials. The Agatsuma Biomass Power Plant has a power generation capacity of 13,600 kW, with annual power transmission of 85 million kWh. Converted to ordinary household electricity use, this equates to the annual power consumption of approximately 24,000 households. The power generation facilities of this power plant have been certified as a green power facility by the Green Energy Certification Center, Japan (GECCJ) of the Institute of Energy Economics, Japan. With this certification, electricity generated at the power plant will be certified as green power produced from renewable energy sources.

Part of the environmental value added will be converted into certificates and issued as Tradable Green Certificates (see page 28).



Agatsuma Biomass Power Plant



- \*1. Wood chips are produced by crushing biomass resources, such as pruned branches and waste wood materials.
- \*2. Biomass refers to renewable organic resources derived from biological matter other than fossil fuels.
- \*3. Thermal recycling refers to the process of collecting and utilizing heat energy generated from combustion, rather than merely incinerating waste materials.

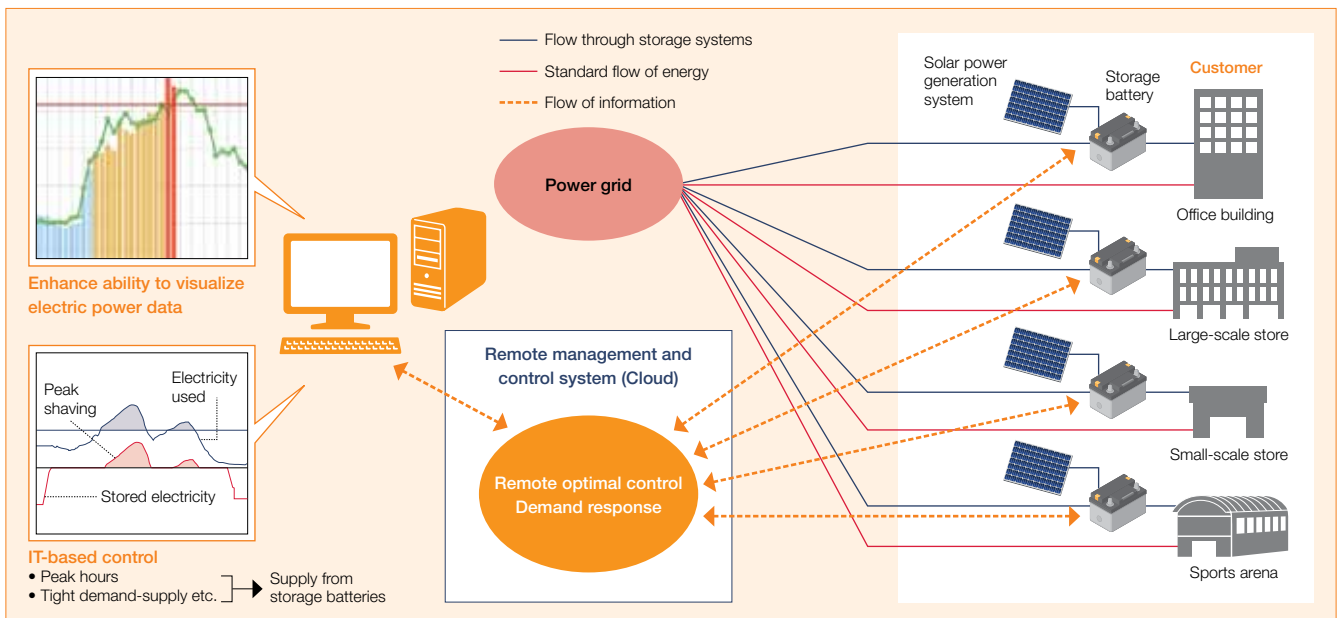
## Storage

### Storage Battery Business

ORIX Corporation

Together with NEC Corporation, ORIX conducts development and field trials of distributed energy management and control system technologies that use storage batteries. This project is conducted in three prefectures in the Tohoku region of Japan. The project is being undertaken by the two companies in their roles as contractors chosen by the Ministry of Economy, Trade and Industry for the “R&D Project for the Creation of IT Integration-

based New Industries in the Fiscal 2011 Supplementary Budget.” Part of this project will entail the installation of solar power generation systems and power storage systems at distributed sites, including stores and office buildings in the Tohoku region. The two companies will perform field trials designed to optimize energy supply and demand through remote management and control systems linked with demand response functions. ORIX will perform a simulation of the effects of installing such systems and will formulate and investigate related business models.



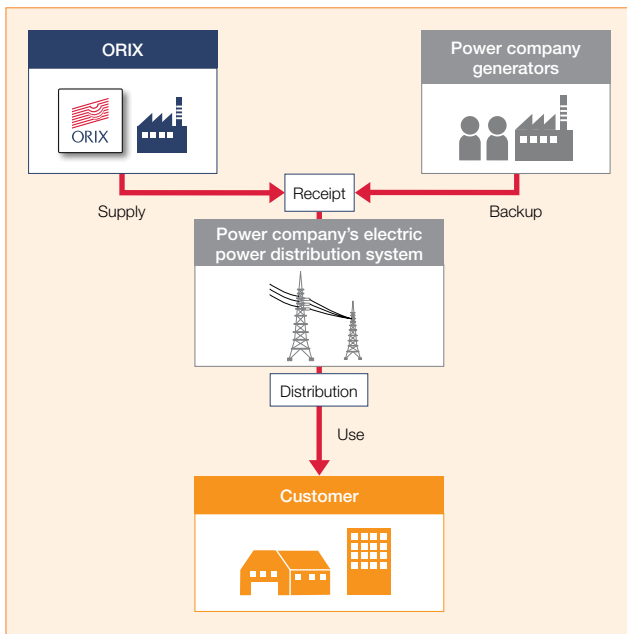
## Electric Power

The ORIX Group offers services that provide affordable electric power for business operators' factories, office buildings, and other facilities. ORIX also offers its Bulk Electric Power Purchasing Service, a service that enables it to help reduce the electricity costs of the residents and management associations of condominiums.

### Electric Power Trading Business

#### ORIX Corporation

As a power producer and supplier (PPS), ORIX supplies electric power at affordable prices, mainly to private businesses in need of high-voltage power within the transmission areas of the Tokyo Electric Power Company, Incorporated, Kansai Electric Power Co., Inc., and the Chugoku Electric Power Co., Inc. PPS refers to businesses that supply electric power on a contractual basis to customers in need of more than 50 kW through the power lines of power companies and other suppliers of electric power.

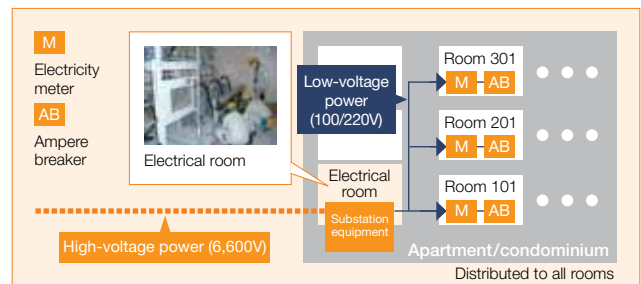
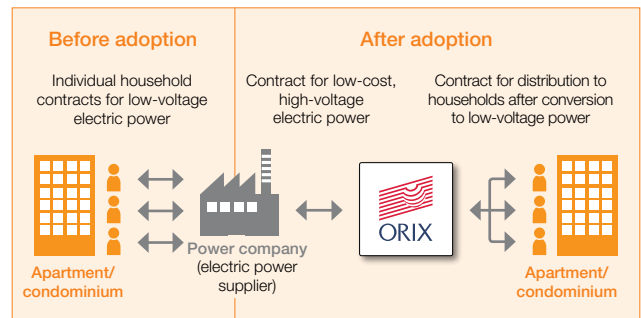


### Bulk Electric Power Purchasing Service

#### ORIX Electric Power Corporation

ORIX Electric Power purchases affordably priced, high-voltage bulk electric power from power companies, which it then redistributes as low-voltage power to customers residing in condominiums, resulting in lower electricity bills for the customers. Installation, maintenance, and management of the necessary infrastructure are conducted entirely by ORIX Electric Power, thereby freeing customers from time-consuming paperwork and lowering their financial burden.

ORIX Electric Power has also started to provide systems incorporating solar power systems in newly built condominiums.



Energy  
Real Estate  
Automobiles  
Resources and Waste  
Finance and Services  
Overseas

#### Case Study

### Combining Bulk Electric Power Purchasing Services with Solar Power Systems and Green Power

ORIX Electric Power has begun offering a service combining its Bulk Electric Power Purchasing Service, which helps reduce the electricity bills of condominiums and apartments, with a solar power generation system and green power. This service will be employed at Brillia City Yokohama Isogo, located in Yokohama City, Kanagawa Prefecture. This new 1,230-unit condominium complex will become the largest condominium complex in Japan to use the Bulk Electric Power Purchasing Service. Brillia City Yokohama Isogo will also employ a service for distributing electricity generated by a solar power system installed on the roof to each unit, utilizing the equipment associated with the Bulk Electric Power Purchasing Service. Utilizing both the Bulk Electric Power Purchasing Service and the solar power system will enable condominium unit electricity rates to be reduced by around 10%\*, while also allowing the building to use renewable energy. Further, ORIX Electric Power will purchase a Green Certificate from the Agatsuma Biomass Power Plant. In this way, a portion of the electric power consumed by condominium units that have adopted the Bulk Electric Power Purchasing Service will be deemed to be green power.

\*1. Reduction rate is calculated by ORIX Electric Power.



Artist's rendition of completed Brillia City Yokohama Isogo, which is scheduled to use the service combining the Bulk Electric Power Purchasing Service with a solar power generation system and green power

## Energy Conservation

Energy conservation has become an indispensable part of efforts to optimize supply and demand balances for electricity and address global warming issues. The ORIX Group offers one-stop support for energy conservation. It provides a wide range of services that help customers reduce energy usage volumes and costs. The ESCO services and services for enhancing the ability to visualize electric power usage data that realize these benefits are fine-tuned to customer needs and span all areas relevant to energy conservation, including tracking energy usage, installing energy-saving equipment, and operating this equipment.

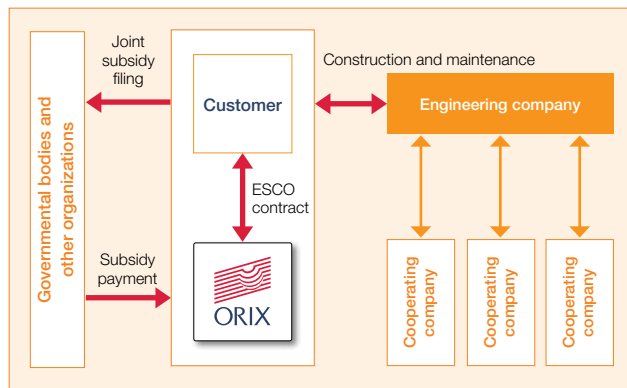
### ESCO Business

#### ORIX Corporation

The ESCO (Energy Service Company) business provides comprehensive services pertaining to energy efficiency in buildings, thereby achieving energy conservation without compromising the existing use of each facility. In the ESCO business, energy cost reductions attributable to the ESCO business itself cover various costs, including the installation costs for energy-efficient equipment, maintenance costs, and the cost of assessing the energy conservation benefits. Many private-sector companies and municipal governments have embraced the ESCO business model as a means of simultaneously conserving energy and reducing running costs.

ORIX offers one-stop services ranging from energy assessments that determine customer energy usage to the proposal and implementation of energy conservation solutions. ORIX also provides ESCO services custom tailored to the needs of a variety of facilities, including factories, warehouses, other

commercial facilities, and hotels. In order to maximize energy conservation benefits, ORIX selects the best equipment and items for the customer's specific needs, without being limited to a particular manufacturer. ORIX provides continuous post-ESCO service implementation support, including operation and maintenance of equipment, energy conservation assessment, and operations consulting.



#### Case Study

##### Industrial Sector ESCO (Factories) SEKISUI MEDICAL Co., Ltd.

ORIX helped SEKISUI MEDICAL's Iwate Plant, which is located in Hachimantai City, Iwate Prefecture, to reduce its energy usage and CO<sub>2</sub> emissions. ORIX installed an LNG satellite tank, changing the plant's main fuel source from type A oil to LNG. In addition, when installing a high-efficiency boiler, ORIX also proposed multi-faceted energy-saving solutions that could be provided in conjunction with an ESCO contract, including verification testing for the pressure of gas. SEKISUI MEDICAL accepted these proposals. This project has been approved by Sustainable open Innovation Initiative (SII) as a project supporting businesses subject to energy rationalization restrictions for the fiscal year ended March 31, 2012, and SEKISUI MEDICAL was thus able to limit the initial costs of introducing the equipment. Moreover, the completed system is expected to realize a reduction of approximately 10% in energy usage.



LNG satellite tank introduced at SEKISUI MEDICAL's Iwate Plant

#### Case Study

##### Service Sector ESCO (Office Buildings) Okiden Kaihatsu Company, Inc.

With the aim of helping Okiden Kaihatsu Company, located in Urasoe City, Okinawa Prefecture, more stringently manage energy usage levels and realize greater energy savings, ORIX updated the building and energy management system (BEMS)\*1 already in place at the Okiden Naha Building and installed new lighting. The climate of the region where this building is located had resulted in heavy usage of air conditioning systems, creating a significant need for a means of controlling air conditioning usage. Also, frequent typhoons had resulted in substantial maintenance fees. Based on this situation, ORIX proposed the introduction of an optimal lineup of equipment and recommended joint filing for subsidies, and both proposals were accepted. Further, as a project that promotes the introduction of high-efficiency energy systems in buildings by supporting the introduction of BEMS, this project was selected to receive subsidies under the SII in the fiscal year ended March 31, 2012. This has served to limit initial costs and will also help keep ongoing expenses at a fixed level. In addition, an inverter-based wind volume control unit has been installed to limit operation when loads are low. ORIX believes this will result in an approximately 4% reduction in energy usage.



Okiden Naha Building

\*1. A BEMS is a system designed to reduce energy usage by optimizing the operation of facilities within a building.



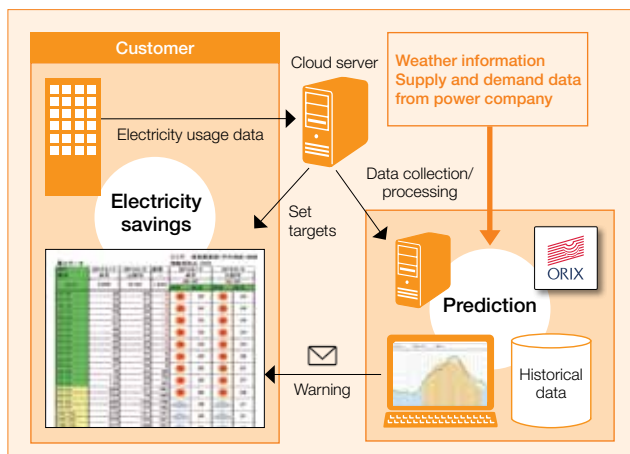
## “Hatto Watto” Demand Response Service

ORIX Corporation

ORIX’s Hatto Watto service promotes the reduction of customers’ peak electricity demand and electricity use. Through this service, ORIX provides customers with an optimal power conservation plan by examining historical electricity usage data and reviewing electricity supply contracts and conservation measures. In addition, the Company will provide electricity consumption and weather information for 30-minute intervals in real-time over the Internet. To pre-alert customers when they are in danger of exceeding planned usage amounts, Hatto Watto will also utilize predicted energy usage for the following day based on previous usage patterns and the weather forecast. Moreover, an email warning will be issued before the planned amount has been exceeded.

ORIX will assume the financial burden for the equipment and data transmission fees required to conduct this service, while sharing the cost reduction benefits from lower electricity usage with customers. Customers can use this service without an initial investment, making it ideal for customers using between 100kW and 500kW of electricity. In this customer group, there is a need for electricity conservation but the introduction of BEMS is uncommon.

Hatto Watto is a project based on a program of the Ministry of Economy, Trade and Industry to subsidize business expenses to promote the introduction of BEMS, meaning that applicable customers can receive subsidies.



### Case Study

#### Introduction of Hatto Watto at ORIX Group-operated Facility

The Hatto Watto service was introduced at Cross Office Shibuya, an ORIX Group-operated office building located in Shibuya-ku, Tokyo. ORIX set reduction goals for the building and offered energy conservation advice. Further, front desk attendants monitor electricity usage data in real-time, helping facilitate appropriate responses to warnings and alerts, thereby smoothing energy conservation initiatives.



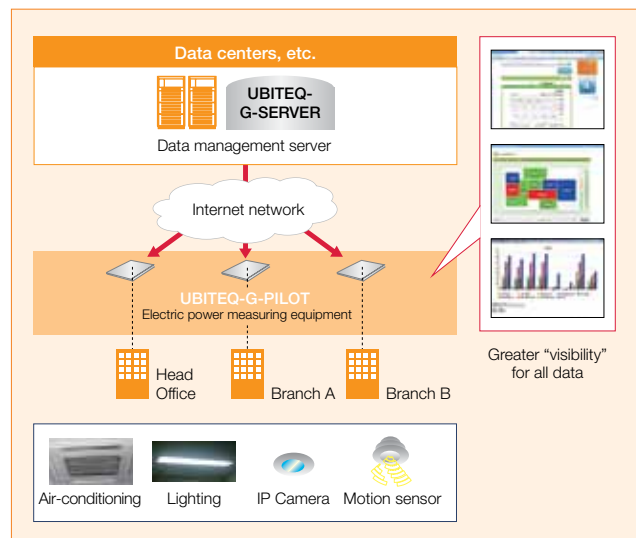
Cross Office Shibuya

## Greater “Visibility” and Automatic Control of Electric Power

Ubiteq, INC.

Through Ubiteq Green Services (UGS), Ubiteq offers comprehensive energy conservation solutions that make electric power usage data more “visible” and offer automatic power control. These solutions link an office’s lighting, air-conditioning, and security equipment to its IT systems to provide greater “visibility” of electric power usage data. At the same time, they offer automatic control functions in which an email notification is sent to customers when energy usage approaches a level predetermined by the customer, and even include a function that allows lighting and air-conditioning to be shut down automatically in the event that energy usage exceeds this level. The settings for these systems can be adjusted via the Internet or manually.

For this service, Ubiteq received the Green IT Award 2011 Commerce and Information Policy Bureau Director-General Award.



### Case Study

#### Introduction of UGS at ORIX Group-operated Facility

UGS was introduced into Cross Garden Tama, a shopping center located in Tama City, Tokyo, that is operated by the ORIX Group. This has enabled the facility to achieve greater “visibility” of electricity usage data while also realizing automated control through the usage of motion sensors and timers. The lighting in shared areas is subject to automated control, and ORIX anticipates that the system will reduce the electricity used by this lighting by 50% from the 240,000kWh used two years ago, which will equate to a reduction in electricity bills of approximately ¥20.0 billion per year.

This project has been selected by New Energy and Industrial Technology Development Organization (NEDO) as a venture for developing innovative energy-saving technologies. Accordingly 50% of initial expenses will be covered by subsidies, and the facility will undergo a period of trial operation from August 31, 2011 to February 28, 2013.



Cross Garden Tama

## Eco-friendly Real Estate Development

ORIX Real Estate Corporation



There is a strong connection between the environment and the real estate business, with every aspect of a building's lifecycle having an impact on the environment. Accordingly, ORIX Real Estate develops eco-friendly real estate, including residences, office buildings, commercial facilities, logistics facilities, and other properties with excellent environmental performance. Also, ORIX Real Estate actively strives to reduce the environmental burden posed by facilities under its management, such as hotels and golf courses. Through these efforts, ORIX Real Estate is taking steps to make buildings more energy efficient and reduce CO<sub>2</sub> emissions, and it is supporting the development of a recycling-based society in harmony with nature.


### ORIX Real Estate's City Development Efforts in Osaka

ORIX Real Estate is developing condominiums, office buildings, theaters, aquariums, and other facilities in the City of Osaka in the Kansai region. In developing these facilities, ORIX Real Estate is incorporating environmental performance elements and taking other steps to develop Osaka into a lively city that is harmonious with society.



**1 ORIX Hommachi Building** ▶ P19


- Rebuilt using existing framework
- Employs solar power generation system
- Enriched with greenery outside and on roof
- Adopted a BEMS
- Achieved CASBEE<sup>\*1</sup> Osaka S-rank certification (highest rank)



\*1. CASBEE, an acronym for Comprehensive Assessment System for Built Environmental Efficiency, is a system for objectively ranking the environmental performance of buildings.

**4 GRAN SANCTUS YODOYABASHI**


- Transported the outer walls of the historic Osaka Agricultural and Industrial Bank on rollers to be used as outer walls for condominium building
- Employs latent-heat-recovering gas water heaters (high-efficiency ECO-JOZU gas water heaters)
- Installed multi-layered glass windows
- Achieved level 4 (highest level) for energy conservation measures under housing performance standards



Artist's rendition of completed building (scheduled to commence construction in July 2013)

**2 Umekita Phase 1 Development Area Project GRAND FRONT OSAKA**


- Employs solar power generation system
- Manages CO<sub>2</sub> emissions targeting reductions (BEMS network, verification system)
- Enriches roof and surrounding area with greenery
- Introduced waterscape into city
- Adopted natural ventilation system for high-rise office buildings
- Achieved CASBEE Osaka S-rank certification (highest rank)
- Selected as a business with a model for reducing CO<sub>2</sub> emissions from residences and buildings by the Ministry of Land, Infrastructure, Transport and Tourism



Artist's rendition of completed building (scheduled to commence operations in spring 2013)

**5 Osaka Hibiki no Machi THE SANCTUS TOWER**


- Employs solar power generation system
- Employs energy-saving cool/heat trench air-conditioning system utilizing geothermal heat
- Employs latent-heat-recovering gas water heaters (high-efficiency ECO-JOZU gas water heaters)
- Employs multi-layered glass windows
- Achieved level 3 (highest level) for anti-aging measures and level 4 (highest level) for energy conservation measures under housing performance standards
- Achieved CASBEE Osaka Mirai S-rank certification (highest rank)
- Certified as an Osaka Eco Residence



Artist's rendition of completed building (scheduled to commence construction in January 2015)

**3 ORIX Theater**


- Constructed by renovating the former Osaka Welfare Pension Great Hall while preserving the traditional facade
- Employs solar power generation system
- Adopted seismic activity-resistant construction
- Installed new air-conditioning equipment



**6 Kyocera Dome Osaka**

- Utilizes rain water for toilets and greenery watering
- Employs natural ventilation system<sup>\*1</sup>

\*1. The arena is ventilated in a natural manner by opening and closing vents based on wind direction to optimize inflow of sea breezes.



## Aquariums

ORIX Real Estate has been involved in the operation of the Enoshima Aquarium as a private finance initiative since 2004. Also, in 2012 it opened two aquariums that it operates directly. These facilities help enrich their surrounding communities as leisure spots. At the same time, we are employing environmentally friendly principles in the management of these aquariums and have transformed them into “edutainment” oriented facilities that fuse education and entertainment to help visitors learn about the environment.

### Kyoto Aquarium

Opened in Kyoto in March 2012, the Kyoto Aquarium is Japan's first aquarium to utilize only artificial seawater in all of its tanks (excluding freshwater tanks). This removes the need for large truckloads of seawater to be transported from the sea to the aquarium, thus eliminating the CO<sub>2</sub> emissions that would have occurred during the transportation process. In addition, the aquarium's high-efficiency, water



Large-scale tank in Kyoto Aquarium utilizing artificial seawater

-saving filtration system enables tank water to be kept clean with minimal water use and limited production of waste water. The aquarium also boasts a number of other environmentally friendly features, including a solar power generation system, toilets that use rain water for sanitation purposes, and a mist-based air-conditioning system. These features have earned the facility recognition as a model for reducing CO<sub>2</sub> emissions from residences and buildings by the Ministry of Land, Infrastructure, Transport and Tourism.

The aquarium is also actively researching methods of preserving the Japanese giant salamander (*Andrias japonicus*), which has been identified as a special natural monument in Japan, and is announcing information pertaining to this quest. Aiming to be a venue for people to enjoy learning about nature and ecosystems in Kyoto and the surrounding communities, the aquarium holds various community-based events and constructs seasonal displays.

### Sumida Aquarium

In May 2012, the Sumida Aquarium was opened in Sumida City, Tokyo. Almost all lighting within the aquarium is LED, and the facility also employs artificial seawater and high-efficiency, water-saving filtration systems similar to those used in the Kyoto Aquarium. The facility features one of the world's largest nature aquariums, which exhibits a display of water plants. The sea creatures in this tank breathe the oxygen released by plants during photosynthesis, and the CO<sub>2</sub> they release through respiration is then reabsorbed by the plants. In this manner, the tank replicates the same cycles seen in nature. In addition, the aquarium plans to raise endangered green sea turtles (*Chelonia mydas*) born in the waters around the Bonin Islands, and then return them to the ocean upon maturity. Several other endangered species are on display at the aquarium, including the *Rhinogobius ogasawaraensis*, zenitanagos (*Acheilognathus typus*), and beetles of the Dytiscidae family. Displaying such

endangered species helps raise awareness regarding the importance of preserving the environment. In summer 2012, *Rhinogobius ogasawaraensis* on display laid eggs from which 50 fish were born, thus demonstrating the fact that the aquarium is equipped to raise this species, which is endemic to the waters around the Bonin Islands. The aquarium also features a SANGO ORIX (see page 20) corner in which visitors can



Sumida Aquarium located inside TOKYO SKY TREE TOWN®

see actual coral seedlings being raised before transplantation into the oceans of Okinawa. There are five “labs” located within the facility where visitors can speak with caretakers, who actively participate in both education and entertainment. Moreover, Sumida Aquarium conducts classes for elementary schools in Sumida City that “bring the aquarium” to the schools, and holds other events as it strives to become a facility that is deeply rooted in the community.

### Enoshima Aquarium

The Enoshima Aquarium\*<sup>1</sup>, located in Fujisawa City, Kanagawa Prefecture, is pursuing what it calls “Enosui ECO,” a set of ecology and environmental activity components.



Beach cleaning activities conducted on Enosui ECO Day

The aquarium provides a wide variety of attractions to help visitors enjoy learning about wildlife. These include an exhibit that displays the diverse range of fauna and ecosystems present in Sagami Bay. In 2012, various outdoor, hands-on events were held. These included the ever-popular jellyfish observation and investigation event, as well as events examining the beach of Sagami Bay, surveying the river creatures that flow into the bay, or collecting and researching sea slugs.

Further, the third Sunday of every month has been deemed Enosui ECO Day. On this day, the aquarium holds beach cleaning events and flea markets and collects bottle caps for the Ecocap Movement.

Located on Sagami Bay, the Enoshima Aquarium aims to continue conducting fun environmental activities together with the surrounding community. While undertaking this endeavor, the aquarium will work to communicate to visitors the importance of the interdependency of life through its exhibits and hands-on educational programs.

\*1. Enoshima Aquarium is a joint project between ORIX Group and Enoshima Marine Corp.

### Condominiums

Sanctus Yono located in Saitama City, Saitama Prefecture, has greenery covering most of the walls within its grounds. A solar power generation system has been installed on the roof of the complex and the building has adopted ORIX Electric Power's Bulk Electric Power Purchasing Service (see page 14). It features superb performance in terms of both economic soundness and environmentally friendliness. Further, insulated glass has been installed in all the outward-facing windows for each room, and the building has a highly insulated and airtight design that has earned it level 4 (highest level) for energy conservation measures under housing performance standards.



Artist's rendition of Sanctus Yono's greenery-covered walls (achieved CASBEE Saitama A-rank certification)

The facility has also introduced a car sharing (see page 22) program for residents.

### Office Buildings

The ORIX Honmachi Building, the ORIX Group's Osaka head office, was also built with the environment in mind. Parts of the old head office's framework were reused in the construction of the new building, and ORIX Real Estate placed tall trees and other greenery within the building's grounds and on its roof. ORIX Real Estate also installed a solar power system and a high-efficiency multi-air-conditioning system that utilizes heat pumps as well as LED and other long-lifespan lighting. Further, the building reuses natural lighting and water, employs BEMS initiatives, and has employed technologies that reduce energy usage and CO<sub>2</sub> emissions. This superior environmental performance has earned the building CASBEE Osaka S-rank certification (highest rank) and led to its receiving the CASBEE Osaka of the Year 2011 award. Certain technologies used in the ORIX Honmachi Building have been identified as a pilot project for a cool city central zone by the Ministry of the Environment.

### Logistics Facilities

Many companies are faced with the task of reducing their environmental impact. ORIX Real Estate is taking steps to address the environmental concerns of these tenants, including introducing solar power systems and placing greenery along outer walls.



Yokohama Machida IC Logistics Center (CASBEE A-rank evaluation achieved)

As a result of these efforts, three logistics centers have received CASBEE A-rank evaluations.



### Golf Course Initiatives



ORIX Golf Management LLC

ORIX Golf Management (OGM) operates 40 golf courses, two driving ranges, and one indoor golf school nationwide. Striving to realize a level of golf course management that has a minimal environmental impact, the company launched the "GOLF de ECO" project in April 2010.



Miki 700 Club, where CO<sub>2</sub> emissions were reduced by 630 t-CO<sub>2</sub> as a result of the switch from heavy oil to electricity for powering the night-time golf facilities

#### Contribution to a Low-carbon Society

In the fiscal year ended March 31, 2011, the "Golf de ECO" project embarked on a quest toward achieving a 1,000 t-CO<sub>2</sub> reduction in emissions from the levels seen in the fiscal year ended March 31, 2009. This goal was set to be achieved over a three-year period starting with the fiscal year ended March 31, 2011. In the fiscal year ended March 31, 2012, OGM upgraded the air-conditioning and water-heating equipment of the "Fuji OGM Excellent Club Ono Course" and switched the fuel source powering the night-time golf facilities at "Miki 700 Club" from heavy oil to electricity. These initiatives enabled OGM to realize reductions in emissions of 933 t-CO<sub>2</sub>. Combined with the reductions from the previous year, total reductions came to 1,359 t-CO<sub>2</sub>, allowing OGM to accomplish its goal a year in advance.

In the fiscal year ending March 31, 2013, the final year of this initiative, OGM will target further emissions reductions by installing LED lighting and renewing air-conditioning equipment at clubhouses and other facilities.

#### Contribution to a Recycling-based Society

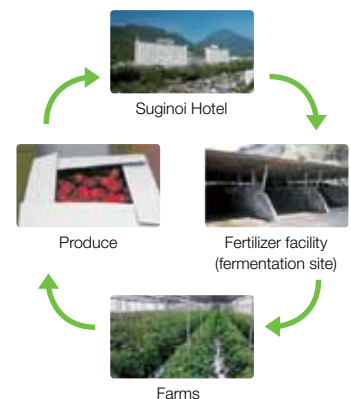
OGM had targeted the achievement of a 50% rate for the conversion of food waste and golf course grass cuttings into fertilizer by the fiscal year ending March 31, 2013. It therefore increased the number of golf courses at which conversion initiatives were being conducted, boosted processing capabilities, and took other steps toward meeting this goal. These initiatives proved to be successful as the conversion rate achieved in the fiscal year ended March 31, 2012, was 54%. OGM has subsequently raised its target for the fiscal year ending March 31, 2013, to 60%, and moving forward OGM will further increase the number of golf courses implementing initiatives from the current 27 and work to convert waste into fertilizer in other ways as well.



### Hotel Food Recycling Project

ORIX Real Estate Corporation

Food recycling projects are being carried out at the Suginoi Hotel, located in Beppu City, Oita Prefecture, and the Blue Ridge Hotel, located in Toyooka City, Hyogo Prefecture. All food waste generated by these hotels is collected and converted to fertilizer by local affiliates. The fertilizer is then used in the cultivation of produce. The hotels then buy this produce in an effort to raise the recycling rate for food waste.





## SANGO ORIX



ORIX Group

In 2008, ORIX Real Estate launched SANGO ORIX, a project to restore the coral reefs of Okinawa. The project aims to protect the abundant capacity of Okinawan coral reefs to sustain biodiversity and pass pristine oceans on to future generations. At present, the project is planting coral off the shores of Okinawa.

In partnership with Okiden Kaihatsu Company, Inc., and Sea Seed LLC, ORIX Real Estate is continuing its coral reef preservation and restoration activities, including conducting surveys to monitor and confirm the growth of coral reefs in Okinawa. As of July 2012, ORIX Real Estate had succeeded in transplanting 6,000 coral seedlings as part of a schedule to transplant a total of 10,000 seedlings over the five-year period ending 2014.



Children that participated in the hands-on coral seedling transplantation education program

the plots for coral seedlings that will be transplanted and learned about the environment of Okinawa, all based on the theme of the importance of coral reefs and the joy of participating in their restoration.



A total of 6,000 seedlings have already been transplanted

Other ORIX Group companies are taking part in this initiative as well. OGM collects donations for this project from customers at all the facilities it manages and from funds raised by collecting and recycling lost golf balls.

Also, ORIX Auto contributes to the coral transplantation efforts by donating to SANGO ORIX a portion of the proceeds from rentals of Nissan Leaf EVs and electric-assist bicycles "e-bike" at its 12 rent-a-car stations on Okinawa Island.

Further, in January and March 2012, the ORIX Foundation held programs for children in Urasoe City, Okinawa Prefecture, in which participants were able to experience coral seedling transplantation first-hand. Approximately 60 children from child welfare facilities participated in this event, where they experienced the process of making



Coral seedling transplantation



## Geothermal Power Generation

ORIX Real Estate Corporation



The Suginoi Hotel's geothermal power generation facility, one of largest private-use facilities in Japan

The Suginoi Hotel possesses one of the largest private-use geothermal power generation facilities in Japan. This facility, the Suginoi geothermal power generation facility, uses the geothermal heat from hot springs and has a generation capacity of 1,900kW. The electricity generated by the plant is used to power all of the hotel's electrical facilities, and is able to supply one-third of the power used during peak hours. While developing measures to improve the efficiency of its geothermal plant, the Suginoi Hotel will also advance other environmentally friendly initiatives, such as utilizing LED lighting for its light display consisting of 1.1 million bulbs.



## Mangrove Planting

ORIX Baseball Club Co., Ltd.

The ORIX Buffaloes baseball team has been planting mangrove trees at its camp in Miyakojima City since 2009. These activities are part of the Miyakojima Eco-Heart Union Project, which is an environmental preservation project conducted by the ORIX Buffaloes in conjunction with Miyakojima City, JTB Corporation, and SPORTS NIPPON NEWSPAPERS. February 2012 marked the start of the project's fourth year of operation. During this month, together with community members and participants of an environmental activities tour, five of the Buffaloes' key members planted black mangrove (*Bruguiera gymnorhiza*) trees in Miyakojima City's Kawamitsu Mangrove Koen Park. The mangroves planted during the first year of the project have now reached heights of approximately one meter.



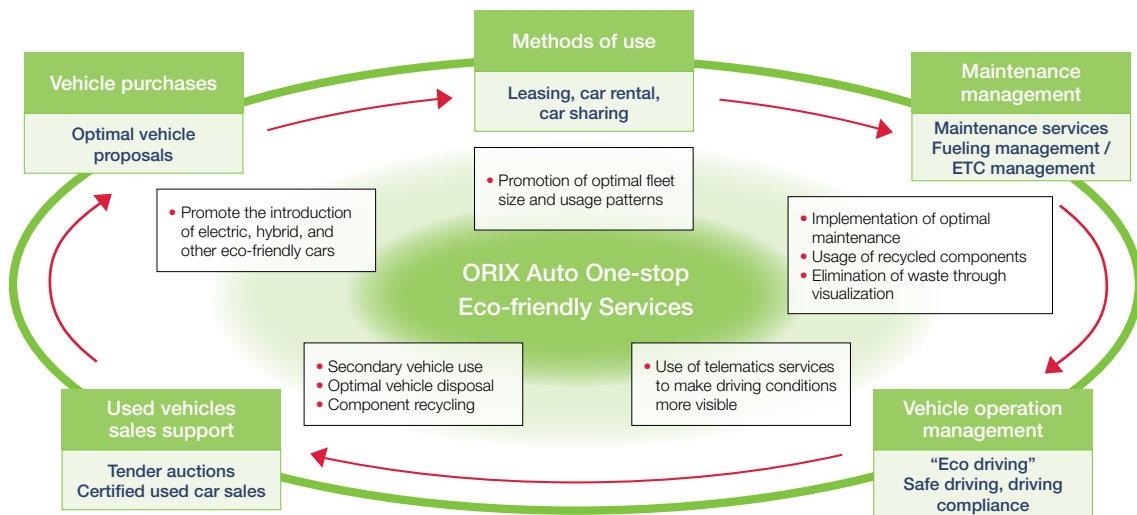
ORIX Buffaloes members planting mangrove trees © ORIX Buffaloes

## Eco-friendly Total Services

ORIX Auto Corporation



ORIX Auto operates the largest vehicle fleet in Japan's auto leasing sector, with roughly 960,000 vehicles under management (as of March 31, 2012), and offers one-stop support for a wide variety of services, including car leasing, rental, and sharing, as well as sales of used vehicles. ORIX Auto provides services fine-tuned to customer needs that help to reduce environmental impact and CO<sub>2</sub> emissions, as well as foster environmental awareness throughout the automobile lifecycle, from methods of use to the maintenance services needed to keep cars running, telematics services that promote eco-friendly driving ("eco driving"), and vehicle disposal.



### Vehicle Operation ORIX Telematics Service "e-Telematics"

ORIX's telematics service, "e-Telematics," is a comprehensive risk management system that factors in compliance, environmental, and safety factors. This service enables customers to monitor detailed driving data by equipping vehicles with specialized equipment that has communication and GPS functions. This equipment collects data on driver tendencies, tracking driving speeds while monitoring for sudden acceleration and deceleration, and at the same time records distance traveled and fuel efficiency. By making this data more "visible," e-Telematics helps customers prevent accidents and reduce CO<sub>2</sub> emissions. Moreover, ORIX Auto provides consulting services through which it periodically analyzes the driving data collected by this system and reports the



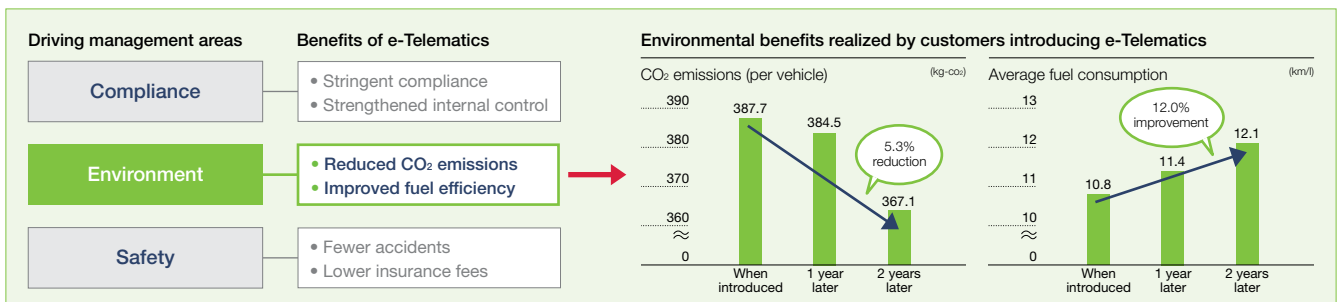
findings to customers, thus enabling them to eliminate dangerous driving habits and promote eco driving.

#### Case Study

#### Konica Minolta Business Solutions Japan Co., Ltd.

Konica Minolta Business Solutions Japan introduced the e-Telematics system into its business-use vehicles in 2009, and has been effectively monitoring driving since. This company uses a feature in which a message is automatically sent to a company representative should a driver exceed present limits for driving speed or accelerate or decelerate with a defined degree of suddenness. This enables the manager to maintain an understanding of the dangerous tendencies of drivers so that they may provide individual instruction as necessary before accidents occur. Konica Minolta Business Solutions Japan also monitors fuel efficiency and watches for prolong periods of idling. This promotes eco driving that reduces fuel consumption to the greatest extent possible.

Moreover, the introduction of e-Telematics has improved awareness among employees with regard to driving safety and eco driving.



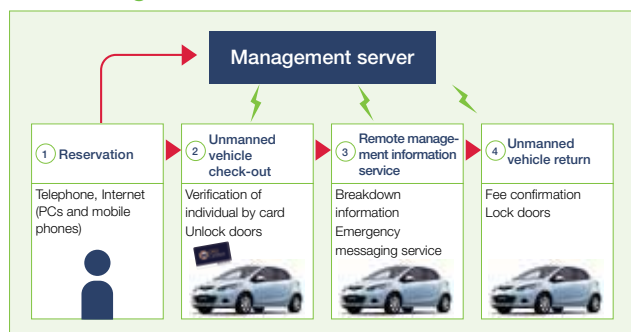
## Car Sharing

“Car sharing” is a car rental system in which many people share the use of several cars. ORIX Auto provides car sharing services for approximately 73,000 users, through 1,025 sites boasting 1,641 vehicles for car sharing (as of March 31, 2012). In cases when people use cars for only short periods of time, car sharing enables customers to save money compared with individuals or companies owning cars, because running costs such as insurance premiums, taxes, and car inspections are included in the car sharing fee.



In recent years, more and more companies have been adopting car sharing services. Some companies combine rail transportation with car sharing. In these cases, employees ride trains to the station closest to their destination, and then use car sharing services from nearby car stations. This approach shortens the driving time and reduces environmental impact. Also, ORIX Auto is taking further steps to reduce its carbon footprint by deploying electric vehicles (EVs) at certain car stations.

### Car Sharing Scheme



### Case Studies

#### National and Municipal Government Bodies

ORIX Auto was the first company in Japan to launch a car sharing business. Today, this car sharing business is embraced as an environmental solution by local governments across Japan.

#### Ministry of the Environment (Next-generation Vehicle Implementation Promotion Project)

January 2009: Aiming to accelerate the adoption of next-generation vehicles, the Ministry of the Environment conducted field trials by loaning EVs to six local governments (Kanagawa, Aichi, Osaka, and Hyogo prefectures as well as Yokohama City and Kitakyushu City). ORIX Auto's car sharing services were incorporated into these trials.

#### Arakawa Ward, Tokyo

March 2010: ORIX Auto jointly launched an EV car sharing business with Arakawa Ward, the first initiative of its kind within Tokyo's 23 wards. EVs are available for use by both Arakawa Ward residents and local government staff on weekdays and for the exclusive use of residents on weekends and public holidays.

#### Toyonaka City, Osaka

January 2010: ORIX Auto began car sharing operations in cooperation with Toyonaka City. Car sharing vehicles are provided at the city's train station terminal. In addition, coordination between car sharing services and public transportation is being promoted.

July 2011: ORIX Auto began EV car sharing operations in cooperation with Toyonaka City. As a first in Osaka, EVs were placed within the grounds of government offices to be used by residents and local government staff. EVs are available for use by both Toyonaka City residents and local government staff on weekdays and for the exclusive use of residents on weekends and public holidays.

## EV and HV Rental Business & Rental of Electric-assist Bicycles “e-bike”

ORIX Auto began actively renting EVs in the car rental business in 2010. It introduced 130 Nissan Leaf EVs into its car sharing fleet in 2011.

ORIX Auto has deployed about 2,700 hybrid vehicles (HVs) at ORIX car rental stations across Japan. Further, certain locations have begun renting electric-assist bicycles “e-bike.”

ORIX plans to consolidate its three car rental brands—ORIX Rent-A-Car, Rent-A-Car Japaren, and X Rent-A-Car—into the single ORIX Rent-A-Car brand. This consolidation is scheduled for March 31, 2014.

Going forward, ORIX will continue to enhance this service to better meet customer needs through means such as improving car rental stations nearby train stations.



Rental Nissan Leaf EVs and electric-assist bicycles “e-bike” at an ORIX Rent-A-Car location in Okinawa

## Maintenance Services

When performing regular vehicle maintenance inspections as part of maintenance services, ORIX Auto also changes the oil as needed as well as checks the air pressure of tires, reinflating them when low. This contributes to higher fuel efficiency, which in turn lowers CO<sub>2</sub> emissions. ORIX Auto also works to limit resource consumption by using parts made from recycled materials when replacing parts on damaged vehicles. Further, ORIX Auto instructs affiliated service stations on how to properly process waste oil, tires, and parts, and subsequently monitors them to ensure that they adhere to these guidelines.

## Auctions and Certified Used Car Sales

ORIX Auto sells used cars that have been returned upon leasing contract expiration or at the end of their useful lives in rental operations to companies and individuals. ORIX Auto holds auctions attended by used car dealers at four ORIX-managed locations nationwide, and 90% of the vehicles put up for auction are sold.



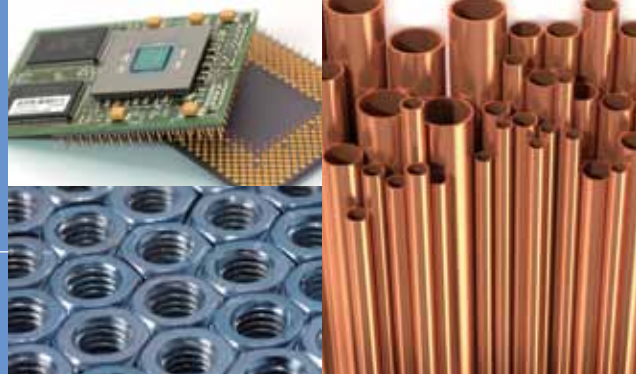
In addition, used cars are also sold directly to individuals through ORIX Auto's online store and at eight retail outlets nationwide. Vehicles sold through these channels must adhere to stringent quality standards. These vehicles, which are sold as “ORIX Certified Used Cars,” are made available at reasonable prices by cutting out the middleman.



ORIX U-car Kashiwa interchange location

# Resources and Waste

## 3R + Proper Waste Processing



The concept of the 3Rs—reduce, reuse, and recycle— is a common thread running through a recycling-based society that aims to promote the recycling of resources. Also, resources that cannot be recycled must be properly processed and disposed of as waste, making the treatment of resources and waste an unavoidable part of company management. ORIX leverages its leasing expertise and its unique network to offer customers a one-stop service for all their 3R and waste processing needs.

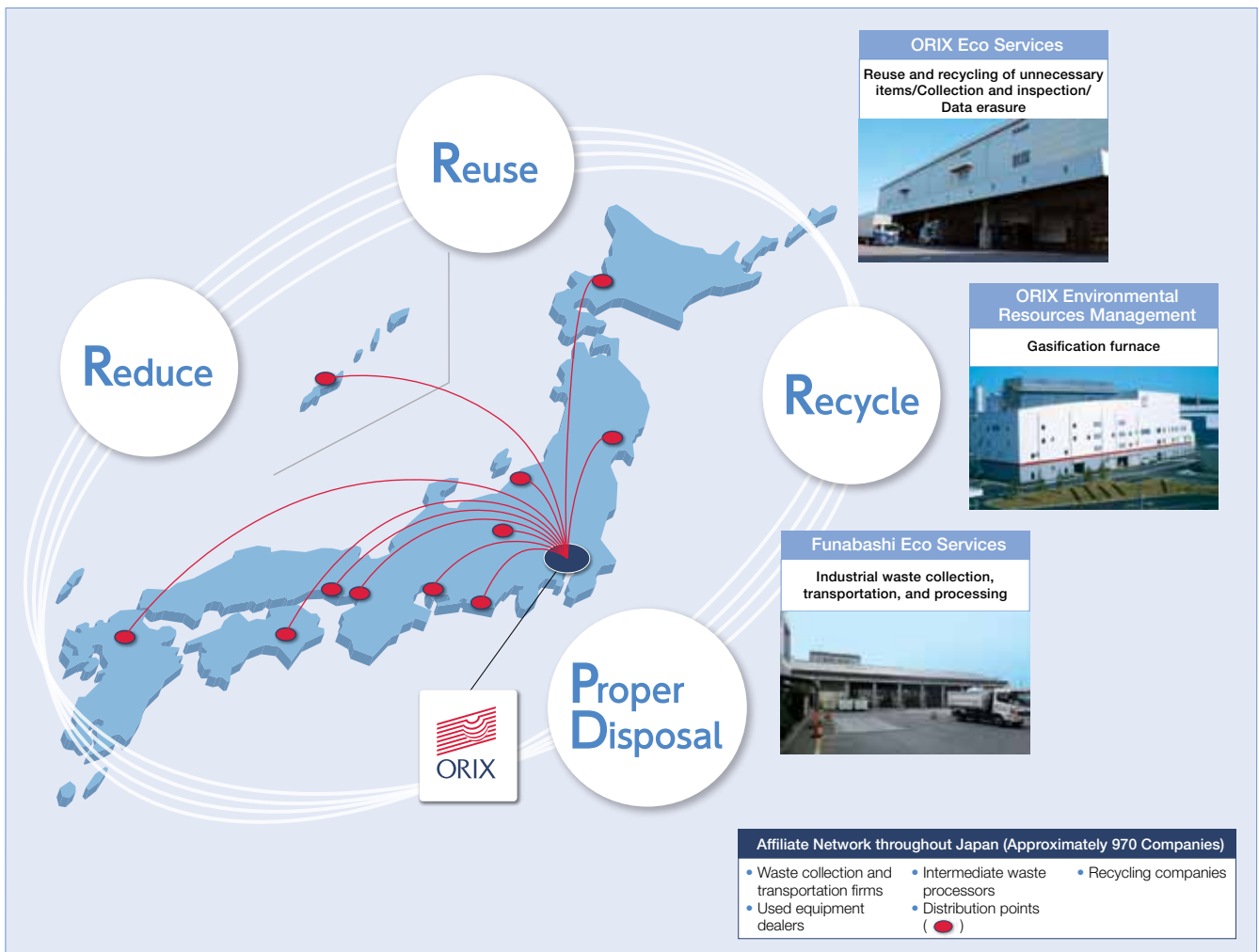
### End-of-lease 3Rs and Proper Waste Processing

Leasing and rentals allow ORIX to provide customers with a way to use equipment “only as needed, for only as long as it is needed,” thereby promoting efficient equipment use and contributing to resource usage reductions. Moreover, in its capacity as property owner, ORIX takes responsibility for either the sale or scrapping of the equipment after the lease or rental expires, promoting reusing and recycling as well as ensuring proper waste processing.

Approximately 400,000 of ORIX’s leases expire each year. For those leases that are not renewed, ORIX Eco Services (OES) utilizes its unique logistics network to effectively collect leased assets from across Japan and prepare them for reuse or recycling.

Leveraging this in-house expertise, OES has developed its area recycling systems (see page 24), which offer integrated support systems for use by customers when disposing of equipment and striving to implement proper waste processing. Through these systems, as well as its waste processing businesses (see page 25), ORIX is working to contribute to the realization of a recycling-based society.

### Meeting Needs for “3R + Proper Waste Processing” throughout Japan





## Area Recycling Systems

### ORIX Eco Services Corporation

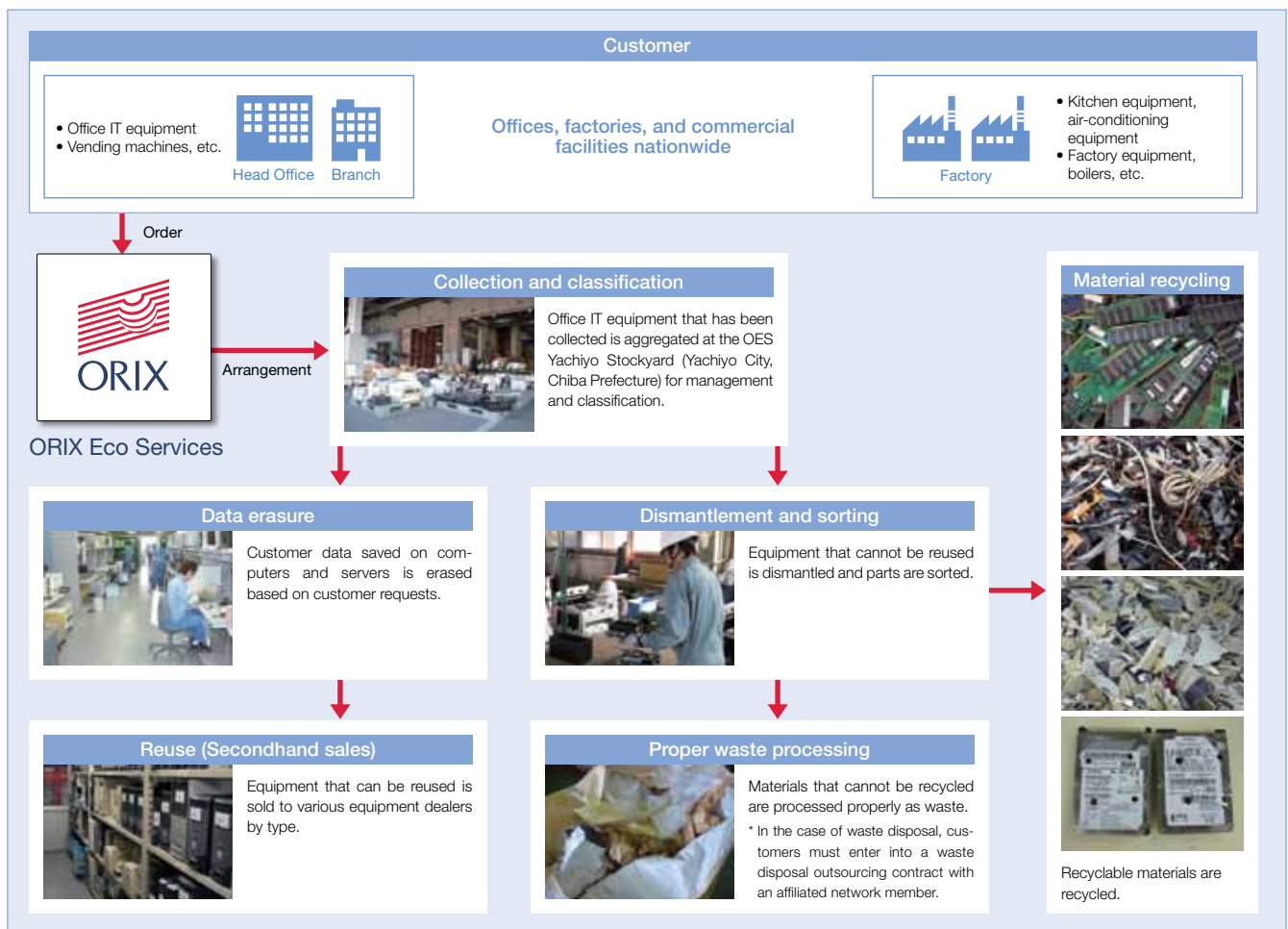
The prices of metal resources, including rare metals that are commonly used in electronic equipment and batteries, have risen in recent years due to shortages in supply. This situation has given rise to unprecedented needs for recycling, throwing a spotlight on so-called urban mines. In order to conduct effective recycling of such resources, it is first necessary to develop systems through which these resources can be recovered from across Japan in an appropriate and affordable manner.

OES has constructed a nationwide network that allows it to offer integrated support for recovering unnecessary property and then preparing it for reuse, recycling, or proper

processing as waste. This network forms the backbone of its area recycling systems.

OES, which assumes a central role in the provision of these services, supports customers by selecting processing companies, arranging transportation, appraising articles to be sold, proposing cost reduction measures, and offering assistance in conducting the complex filling processes associated with proper waste disposal. Through these efforts, OES is not only working to smooth collection processes across Japan, but also helping to promote recycling and ensure that the quality of recycling is the same anywhere in the nation while at the same time preventing improper waste processing. It performs these services through a nationwide network of bases that support customers in disposing of their unnecessary property.

## Process of Collecting, Reusing, Recycling, and Properly Disposing of Unnecessary



### Environmental Impact Reduction Initiatives for End-of-lease Items

ORIX Corporation

After the expiration of their lease, approximately 80% of all leased items are once again leased out. Encouraging customers to reuse these items in this manner limits the purchase of new items, thus helping reduce resource usage. For the remaining 20% of items that are not re-leased, ORIX, in its capacity as property owner, utilizes its nationwide network to reuse and recycle these items to the greatest extent possible.

In the fiscal year ended March 31, 2012, approximately 92% of all end-of-lease items were reused or recycled. This figure was 99.8% for PCs and other office IT equipment. In this manner, we are actively reducing the environmental impact of end-of-lease items.

## Sophisticated Waste Processing Facility (Gasification Furnace)

ORIX Environmental Resources Management Corporation

ORIX Environmental Resources Management (OERM) operates a zero-emission\*1 plant in the town of Yorii, Saitama Prefecture, through a private finance initiative partnership. The plant utilizes the latest thermal decomposition and gasification methods, and its defining feature is that it melts waste at roughly 2,000°C, which enables all of the waste to be recycled. Recycled materials include slag and metals, which are recovered, and refined syngas, which is used as fuel for highly-efficient power generation at an onsite generator. OERM has voluntarily set dioxin limits for the site at one-tenth the legal limit and is utilizing this sophisticated system to keep dioxin emissions to a minimum. The plant can process 450 tons of waste daily, one of the largest processing volumes among private-sector facilities in Japan. In addition to industrial waste from factories and offices, many municipal governments use the plant to process general urban waste, including household waste.



High-temperature reactor that melts waste

The plant has been identified by the Ministry of the Environment as one of Japan's few facilities capable of processing wastes containing perfluorooctane sulfonic acid (PFOS)\*2. Further, it has been certified by government institutions as a recycling facility for auto shredder dust under the Law for the Recycling of End-of-life Vehicles and as a producer of products recycled from plastic containers and packaging under the Law for the Promotion of Sorted Collection and Recycling of Containers and Packaging. OERM also contributes to the advancement of social science education by offering tours of the plant to members of the community.

\*1. Zero-emission refers to recycling resources by making effective use of all waste as raw material without emitting any unusable waste.

\*2. PFOS became a chemical substance subject to regulation in 2009. The Ministry of the Environment released the *Technical Documents on Treatment of Wastes containing PFOS* in 2010, and it was decided that the treatment of wastes containing PFOS would be assigned to facilities the Ministry had verified through testing to be able to properly dispose of such wastes.

### Uses for Recycled Materials

Recycled substance	Use
Refined syngas	Fuel for power generation, onsite fuel
Slag	Construction materials (blocks and paving material)
Metals	Steel production feedstock and copper material
Sulfur	Sulfuric acid feedstock
Metal hydroxide	Zinc refinement feedstock, lead refinement feedstock
Industrial salt	Caustic soda feedstock

## Industrial Waste Processing, Collection, and Transportation

Funabashi Eco Services Corporation

Funabashi Eco Services provides integrated services ranging from waste collection and transportation to selection of waste for pulverization and waste processing by intermediary companies. Waste collected is carefully sorted, with metals, wood, and paper scraps fully recycled while all other materials are disposed in the appropriate manner.

The company also provides one-stop service for disposing of the metal resources found in office IT and other equipment, collecting and sorting these resources, and then processing and selling materials as appropriate. Leveraging its refined ability to discern the value of metal resources, Funabashi Eco Services is expanding the volumes of metal resources it collects and accurately selecting high-quality metal materials that can be easily recycled. Through these efforts, it aims to reduce the expenses associated with processing metals while also adding further value to this business model.



Scrap metal compactor

## Office Relocation Support Service

ORIX Eco Services Corporation

OES provides office relocation support services that go beyond the relocation and transportation services provided by moving companies. In addition to performing such traditional relocation tasks, the services provided by OES comprehensively meet all of customers' relocation needs, including those related to selling unneeded property and properly disposing of waste.

In dealing with customers' unneeded property, ORIX selects those items that may be reused, and sells these to new owners. This minimizes waste and simultaneously reduces the relocation costs of customers together with the environmental impact of the relocation. For items that cannot be reused, support is provided to customers to ensure that waste is disposed of properly.



### Support for Regional Environmental Activities

ORIX Environmental Resources Management Corporation

The town of Yorii in Saitama Prefecture, home to ORIX Environmental Resources Management's Yorii Plant, is advancing an "Eco-Town Plan" geared toward promoting the local production and consumption of energy and encouraging people to live more environmentally friendly lifestyles. As the first of this line of initiatives, ORIX Environmental Resources Management donated EV quick-chargers to the town in September 2012.



Ceremony commemorating the donation

## Finance and the Environment



Finance must play a key role in the development of a “green economy,” an economy achieving both environmental preservation and economic growth. Finance is expected to facilitate the reflection of environmental factors in prices and enterprise values, thereby directing the flow of funds in an environmentally friendly manner. The ORIX Group is leveraging its financial services, which are born out of the breadth of financial expertise it has accumulated over the years, to assist customer efforts to make their operations more environmentally friendly.

### Testing Services for Renewable Energy Related Equipment

#### ORIX Rentec Corporation

In recent years, the market for renewable energy has been expanding, driving a rapid increase in demand for testing services for products and components related to renewable energy. ORIX Rentec provides performance evaluations and reliability testing services for renewable energy-related equipment on a contract basis at its Kobe Testing Center. Testing laboratories will also be made available to customers so that they can perform tests and inspections on their own.

#### Solar Panel Testing

The Center is equipped to run tests at panel size, and is one of the few facilities in Japan that can perform accelerated tests\*1. It also has the industry's first testing for large panels: X-ray observation and mechanical load testing equipment. Other facilities include high-temperature, high-humidity testing equipment and temperature and humidity cycle testing equipment. With this equipment, the Center supports long-term durability testing. Moreover, the Center boasts a large panel solar simulator and a solar cell EL tester, making it capable of performing a full range of tests.

\*1. These tests place panels under harsh conditions to purposefully age the panels and evaluate lifespan.

#### Storage Battery Recharging and Discharging Testing

The Center can perform recharging and discharging tests needed to develop large-capacity storage batteries for a wide range of applications.

#### Reliability Testing

The Center can perform various tests designed to evaluate the environmental performance and durability of products, components, and materials. With its full line of equipment, the Center is capable of performing one-stop evaluation assessments ranging from tests to inspections.



Kobe Testing Center



X-ray observation equipment

### Rentals

#### ORIX Rentec Corporation

ORIX Rentec possess a lineup of rental equipment consisting of over 960,000 items spanning 30,000 different types of equipment\*2. It rents this equipment to customers with flexible usage terms based on their needs.

\*2. As of March 31, 2012

#### Power Generator and Battery Rental

Recently, demand for both power generators and batteries has been growing. This growth in demand reflects their use as emergency power sources and their ability to improve energy efficiency by allowing electric power accumulated at night to be stored and used during the high-demand daytime hours. ORIX Rentec aims to support customers' efforts to reduce electricity usage during peak hours and also help enhance their emergency backup systems by renting power generators and batteries.



Lithium-ion battery

#### Radiation Measurement Equipment

ORIX Rentec rents environmental radiation dosimeters and survey meters for reading surface contamination levels, both used when conducting decontamination work, as well as gamma-ray food screening monitors for ensuring food safety.

The company has a wide range of radiation measuring equipment, including that capable of testing food, water, soil, and materials. This equipment is provided on a rental basis to municipal government organizations, construction consulting firms, food processors and distributors, and other customers that need to measure radiation levels.



Food radiation measurement equipment

### Used Equipment Sales and Purchasing

#### ORIX Rentec Corporation

ORIX Rentec sells high-quality used equipment that has undergone maintenance directly to customers, through auctions targeting used equipment dealers, and in its stores and online shop. It also inspects and purchases equipment that customers no longer need. Through this, ORIX Rentec is helping reduce resource consumption.

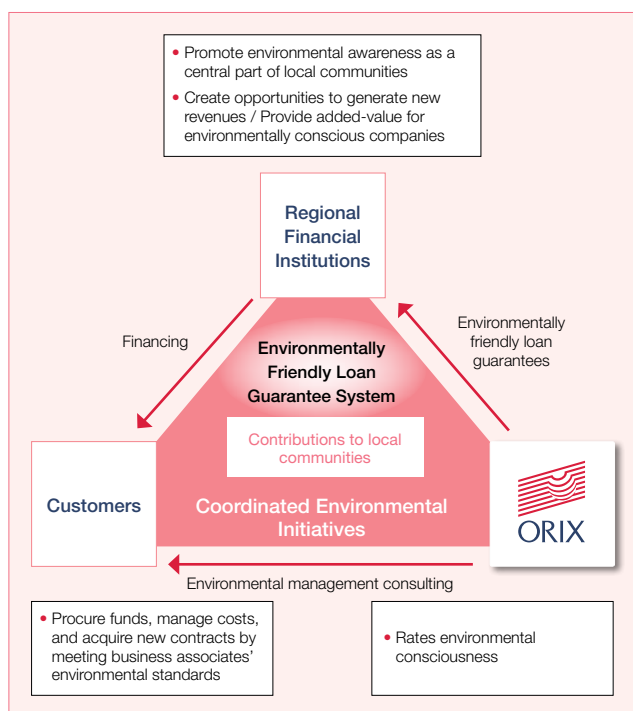


Used equipment on store shelf

## Environmentally Friendly Loan Guarantee System

ORIX Corporation

Together with regional financial institutions, ORIX is conducting a loan guarantee business for environmentally friendly loans in order to help foster environmental awareness among local companies and support their environmental initiatives. In this business, ORIX evaluates customers through its own rating system for environmental consciousness, based on which they may be able to receive preferential treatment on loans from financial institutions. We believe that this will help increase the number of companies that incorporate environmental concerns into their business. However, ORIX's involvement is not only limited to providing guarantees for loans. Rather, it offers more comprehensive assistance, including consulting and support for customers that wish to receive higher rankings.



### Case Study

#### Hamamatsu Shinkin Bank

Hamamatsu Shinkin Bank, located in Hamamatsu City, Shizuoka Prefecture, launched its Hamashin Eco Financing product in October 2011. By offering this product, the bank aims to cultivate a social sense of environmental awareness. This product allows potential borrowers to receive lower guarantee costs without collateral based on their performance in a variety of environmental areas. These include the acquisition of environmental certifications, such as ISO 14001, Eco Action 21, or Green Management certification, as well as the environmental consciousness rating that has been received in accordance with the content of the environmental reports constructed by ORIX.

As of March 31, 2012, 35 local companies had made use of this product, and Hamamatsu Shinkin Bank is thereby supporting the environmentally friendly development of the community through the efforts of these companies.

## Eco-lease Promotion Business

ORIX Corporation

The Ministry of the Environment is conducting an eco-lease promotion program during the fiscal year ending March 31, 2012, for small to medium-sized businesses that face financial difficulties in making the often expensive initial investments required to introduce low-carbon equipment. If a business leases low-carbon equipment that meets standards set out by the Ministry, it can receive subsidies totaling 3% of the overall amount of the lease. Starting in June 2012, the program began offering subsidies totaling 5% of the overall amount of leases for products with particular high electricity conservation benefits (subsidies may cover 10% of leases for businesses in Iwate, Miyagi, and Fukushima prefectures). ORIX is registered with the Ministry as a provider of such leases, enabling it to assist businesses in introducing applicable equipment.

## ESCO Fund

ORIX Corporation

The ESCO Fund is an investment scheme limited to eco-friendly capital expenditures. In operating such a fund, ORIX combines its expertise in ESCO operations with the regional information networks of financial institutions to identify customers' demands efficiently and provide long-term financial support. Through the fund, ORIX is teaming up with The Shiga Bank, Ltd., The Kiyo Bank, Ltd., The Bank of Fukuoka, and other local financial institutions to contribute to the local economy and reduce CO<sub>2</sub> emissions in regional communities.

## Carbon Offset Service & Sales of Carbon Credits

ORIX Corporation

Both companies and people make efforts to reduce the CO<sub>2</sub> emissions caused by their business activities and everyday lives. However, when they are unable to completely eliminate emissions, they can offset these emissions through initiatives that either reduce or absorb CO<sub>2</sub> in other areas. Common methods include conducting clean energy operations, planting trees, or engaging in forestry activities. This practice is known as carbon offset.

ORIX offers comprehensive support for customer carbon offset efforts by advising customers on how to transform their products and services into carbon offset products and calculates the CO<sub>2</sub> emitted by business activities. ORIX also procures and manages credits (for example, Certified Emission Reductions (CERs)\*1, etc.), as well as issues carbon offset certificates. ORIX also sells emissions rights in the form of carbon credits.

\*1. CERs are a type of emissions credit that is recognized by the United Nations and are compliant with the rules outlined by the Clean Development Mechanism (CDM), a scheme through which companies can offer technological or monetary support to global warming prevention measures. Credits are awarded based on the greenhouse gas reduction volume of the measures.



ORIX's carbon offset services logo

## Tradable Green Certificates

ORIX Corporation

Electric power generated from renewable energy sources has value in and of itself as electric power in addition to having value as an environmentally friendly source of power with a low level of CO<sub>2</sub> emissions. Tradable Green Certificates are an attempt to represent this environmental value in a tangible form. These certificates, which are sold by ORIX, represent the environmental value of the electric power generated through the use of wood chips as biomass fuel at the Agatsuma Biomass Power Plant (see page 13). ORIX also issues and sells these certificates for the electric power generated by solar power systems. When a customer buys a Tradable Green Certificate, they are considered to be using green power. This makes these certificates an easy and affordable way to introduce green power, and an increasing number of companies purchase them in conjunction with annual shareholders' meetings or other events.

Through the sales of these certificates, ORIX is helping its customers to improve the quality of their CSR activities and to address the related ordinances, laws, and regulations issued by various governing bodies.



Logo for Tradable Green Certificates issued by Agatsuma Bio Power Co., Ltd.

### Case Study

#### Takasaki Shinkin Bank

In August 2012, the Takasaki Shinkin Bank, in Takasaki City, Gunma Prefecture, began providing installment savings account books and payment envelopes produced using green power. The bank calculates the electricity used to manufacture these books and envelopes, and then purchases Tradable Green Certificates with an equivalent environmental value. These items are therefore judged to be produced using green power. The bank employed these certificates associated with power generated by the Agatsuma Biomass Power Plant, also in Gunma, as a way of decreasing the environmental footprint of the region while also promoting the local production and consumption of energy.



Installment savings account books



Payment envelopes

## Water and Sewage System Reconstruction PPP Venture

In November 2011, a consortium consisting of ORIX, Yokohama Water Corporation, and NIPPON JOGESUIDO SEKKEI CO., LTD., was selected to perform a study of public-private partnership (PPP) methods for the reconstruction, maintenance, management, and operation of sewer infrastructure. This study is part of a public tender for PPP disaster recovery projects by the Policy Bureau of the Ministry of Land, Infrastructure, Transport and Tourism. Under this project, the consortium conducted a PPP

project business feasibility survey concerning the reconstruction, maintenance, management, and operation of sewer facilities in the town of Yamamoto, Miyagi Prefecture, where water and sewer facilities sustained severe damage as a result of the Great East Japan Earthquake. Further, it developed a scheme for effectively reconstructing water systems together with sewage systems by combining the business knowledge of private-sector companies with the water system operational knowledge of municipal governments.

At the same time, ORIX will use the findings of these services to formulate concepts for PPP projects that allow for the integrated management of water and sewage systems. The Company hopes to extend these findings to other areas affected by the earthquake. In this way, we will work to accelerate post-earthquake reconstruction efforts while also further exploring the potential of PPP projects related to water infrastructure.

## Sewage Projects in Indonesia and Vietnam

In 2011, ORIX was selected to conduct cooperative preparatory studies for PPP infrastructure projects in Indonesia and Vietnam, for which the Japan International Cooperation Agency (JICA) placed an open application for participants.



Sewage treatment facility

In Indonesia, a consortium of eight companies headed by ORIX will conduct feasibility studies in Jakarta, where, with only 3% of the population having access to such infrastructure, the development of water infrastructure has been unable to keep pace with the expansion of the population. The study will investigate the feasibility of developing a system of sewer pipelines and wastewater treatment plants capable of processing the sewage of 1 million people, which would be the largest system in the country and the first system of such an immense scale. This system will make a significant contribution to achieving the government goal of giving 20% of Jakarta's population access to sewage systems by 2020.

In Vietnam, meanwhile, ORIX will participate in a consortium consisting of five Japanese companies. The consortium will conduct feasibility studies investigating the business feasibility of constructing the country's largest sewage treatment facilities (wastewater treatment plants and sludge treatment plants), which would be capable of treating the sewage of approximately 900,000 people, in the Vietnamese capital Hanoi.

ORIX is accumulating a wealth of expertise and experience through its involvement in JICA infrastructure development projects. Going forward, ORIX will work to blend this expertise and experience with the business and management knowledge of private-sector companies and municipal governments as it develops water-related business models for emerging countries. Further, the Company will continue to pursue higher levels of sustainability, safety, and efficiency in these business models.



## Developing Eco Services Primarily in Emerging Countries in Asia

In 1971, ORIX Group's overseas expansion began in Hong Kong. Today, ORIX conducts leasing and other finance and service operations in 27 countries and regions overseas. Utilizing the Eco Services expertise developed in Japan and its network of overseas affiliates, ORIX will expand its operations in emerging countries in Asia and other regions. In this expansion, a particular focus will be placed on environmental and energy businesses.

### Ship-related Business

#### ORIX Corporation

Just as HVs, EVs, and other environmentally friendly vehicles are being developed in the realm of automobiles, development is also progressing for environmentally friendly "eco ships" in the world of shipping. These ships feature revolutionary new designs employing solar power, wind power, and other forms of renewable energy. The design of the body and propulsion systems has also been improved, and new pieces of equipment are being installed on these ships. These advancements enable such ships to realize significant improvements in fuel efficiency while reducing CO<sub>2</sub> emissions.

ORIX has been developing its ship-related business since 1971. The eco ships that are currently being ordered feature specially designed bodies, propellers, rudders, and peripheral equipment. Also, the bottoms of these ships are coated in newly developed low-friction paints. Such improvements enable these eco ships to use approximately 10% less fuel than conventional ships. Construction of these ships is scheduled to commence in 2015.

### Water-related Business

#### China

#### ORIX Corporation

ORIX acquired 20.06% of China Water Affairs Group Limited, a company with headquarters in Hong Kong that operates and manages water and sewage facilities and is developing infrastructure in over 20 cities in mainland China. The demand for water is increasing in China against the backdrop of rapid population and economic growth, drawing attention to the need to improve the quality of water and raise the rate of sewage and industrial wastewater that is reused.

Using superior Japanese water and sewage system technologies and know-how, ORIX will complement this company's operations and contribute toward the resolution of China's water-related issues.



Sewage treatment facilities managed by China Water Affairs Group (Jingzhou City, Hubei Province)

### Large-scale Complex Development Project

#### The Philippines

#### ORIX METRO Leasing and Finance Corporation

ORIX is developing a large-scale complex in Manila as a joint-venture with real estate developer Federal Land Incorporated, an affiliate of Metropolitan Bank and Trust Company, one of the largest banks in the Philippines. The complex will consist of a 66-story hotel and office tower, one of the highest buildings in the Philippines and a 51-story condominium tower with designer shops and restaurants in the lower floors. ORIX is fully considering environmental concerns with the aim of acquiring Leadership in Energy and Environmental Design (LEED)\*<sup>1</sup> certification under the United States-based, internationally recognized green building program of the same name.



Artist's rendition of completed building (scheduled for completion of construction of all towers in spring 2016)

The Philippines has a particularly hot climate. For this reason, the hotel and office tower is to be built as a rectangle that is thin from north to south and long from east to west. This will reduce the time the building is exposed to direct sunlight, subsequently limiting temperature rises. Further, both towers will employ LED lighting and heat-insulating, low emissivity glass. These innovations will help reduce air conditioning usage, thereby lowering electricity consumption. Moreover, both towers will have environmental factors incorporated into various other areas of their design. They will both feature areas filled with greenery, and sprinkler water will be from recycled sources.

\*1. LEED is a system for certifying buildings based on environmental standards managed by the U.S. Green Building Council.

### Renewable Energy Business

#### Malaysia

#### ORIX Leasing Malaysia Berhad

ORIX Leasing Malaysia (OLM) was Malaysia's first leasing company and boasts a 40-year history. It is currently advancing financing operations for environment and energy-related equipment.

In line with the December 2011 introduction of a new feed-in tariff (FIT) system for electric power generated by renewable energy sources in Malaysia, OLM has begun offering leases and hire purchase plans for customers looking to install solar power generation systems.

OLM also provides leases and hire purchase plans for a variety of other equipment and environmentally friendly products.

# The ORIX Group's Environmental Activities

The ORIX Group is promoting ECORIX, an environmental policy that guides its environmental activities.

## Environmental Policy

The ORIX Group will contribute to resolving environmental and energy issues through its business operations that meet the needs of customers and society.

This commitment will direct our efforts as we continue to expand the range of our business and grow.

## Activity Targets

1. Provide new Eco Services that contribute to the resolution of the environmental and energy issues faced by customers and society
2. Maintain an understanding of the environmental impacts of our business and work to reduce these impacts while complying with environmental regulations
3. Improve employee awareness and knowledge to ensure environmental initiatives are implemented that match the characteristics of each business
4. Provide appropriate information with regard to legally mandated disclosure and environmental initiatives

Revised September 25, 2012

Makoto Inoue  
President and COO



In 2007, the ORIX Group formulated its ECORIX2012 environmental policy, which defined targets for its environmental activities with regard to expanding services that contribute to low-carbon development and reducing the Group's environmental footprint. We have subsequently continued to act in accordance with this policy. However, there have recently been changes in the social climate with respect to environmental and energy issues. The scope of the ORIX Group's business has also expanded. In light of these changes, we have revised our environmental policy and activity targets to better reflect the current state of the Group's business operations, giving birth to the new ECORIX policy.

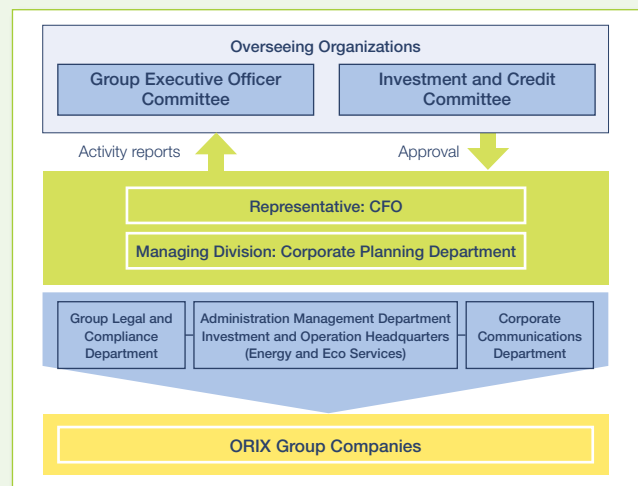
## ECORIX Activities

June 2007	Announced ECORIX2012
October 2007	Published Environmental Report 2007
September 2008	Established ORIX Group Environmental Policy
October 2009	Published Environmental Report 2009–2010 Declared goal of becoming an Eco Services Integrator and released list of Eco Services
January 2010	Participated in Green Productivity Advisory Committee of the Asian Productivity Organization (APO)
August 2010	Introduced and began operation of ORIX Group Energy Management Support System (Multi-ESS)
January 2011	Launched ORIX Group's comprehensive eco services website, "ECORIX Navi"
February 2011	Established ORIX Group's Eco Office Action Guideline
September 2012	Revised ORIX Group Environmental Policy

## Environmental Activity Framework

The ORIX Group has established the following framework to promote environmental activities that are more closely linked to the Group's business activities.

- The representative responsible for environmental activities is the ORIX Group's Chief Financial Officer (CFO), and the managing division is the Corporate Planning Department, which will formulate policies and plans.
- Divisions that will play principal roles are the Group Legal and Compliance Department, Corporate Communications Department, and the Investment and Operation Headquarters (Energy and Eco Services) within the Administration Management Department, which will serve as the secretariat.
- The scope of activities will include all domestic Group companies. Coordination will be conducted with these Group companies, particularly those developing business that can significantly impact the environment, to monitor environmental data and legal compliance. Response measures will be implemented as necessary.



## Other Activities

### Environmental Laws and Regulations

All ORIX Group companies practice strict compliance with relevant laws and regulations, such as the Act Concerning the Rational Use of Energy, local global warming prevention regulations, and the Waste Management and Public Cleansing Law. The secretariat identifies the operating sites that are affected by these regulations and confirms whether or not the filing of reports to the relevant authorities and the establishment of plans are progressing on schedule.

### Environmental Management System

Various management systems, including those based on ISO standards, are being introduced at all ORIX Group companies. In 2000, ORIX Rentec obtained ISO 14001 certification, and this certification was subsequently acquired by ORIX Interior in 2003, Ubiteq in 2004, ORIX Eco Services in 2006, and ORIX Environmental Resources Management in 2009.

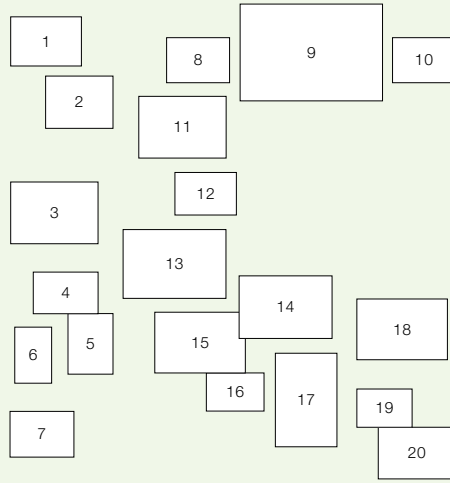
### Participation in Domestic Emissions Trading System

ORIX is a target participant in the trial implementation of an integrated domestic market for emissions trading by the Japanese government (Domestic Emissions Trading System). ORIX is working to reduce electricity usage per floor area unit in the ORIX Head Office building (part of the Mita NN Building).

### Principles for Financial Action Towards a Sustainable Society

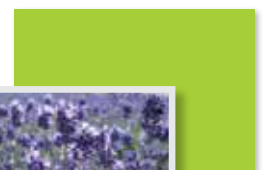
In December 2011, ORIX, ORIX Bank, and ORIX Life Insurance became signatories to the Principles for Financial Action towards a Sustainable Society (*Principles for Financial Action for the 21st Century*).

These principles were formulated in October 2011 by financial institutions that endorsed the concept put forth by the *Japanese Version of Environmental Finance Principle*. The establishment of this document was proposed in a report entitled *The relationship between environment and finance—The new financial role toward a low carbon society* compiled by a specialized committee established by the Ministry of the Environment, to build foundations for expanding the scope of environmental finance. As of September 2012, a total of 183 financial institutions had become signatories to the *Principles for Financial Action for the 21st Century*. The ORIX Group has participated in formulating the framework for these principles since the drafting phase.



**Photographers**

- |                                                                                                                                                         |                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| 1 Minehama, Shari Town (Hokkaido)<br>Chika Iwai, Momiji Lease Corporation                                                                               | 11 Sunayama Beach (Miyakojima)<br>Hidenori Ishito, ORIX Rentec Corporation                                              |
| 2 Japanese Serow Near Hakubajiri Lodge (Nagano)<br>Kazushige Nagae, ORIX Rentec Corporation                                                             | 12 Mount Adataro (Fukushima)<br>Yasuki Shintani, ORIX Rentec Corporation                                                |
| 3 Blue Pond (Biei, Hokkaido)<br>Jun Tateoka, ORIX Corporation                                                                                           | 13 Japanese Sable (Nakashibetsu, Hokkaido)<br>Jian Zhao, ORIX Corporation                                               |
| 4 Cherry Blossoms and Broccoli (Showa Kinen Park)<br>Hiromi Sase, ORIX Corporation                                                                      | 14 Tulips (The Netherlands)<br>Hiroaki Nishina, ORIX Corporation                                                        |
| 5 Bridge of Fitero (Pilgrimage route in Northern Spain)<br>Keiko Murakami, ORIX Corporation                                                             | 15 Swallowtail Butterfly and Sunflower<br>Minoru Yokokura, ORIX Real Estate Corporation                                 |
| 6 Fall Leaves at Eikando (Kyoto)<br>Reiko Ikeda, ORIX Living Corporation                                                                                | 16 Jojakko-ji Temple (Kyoto)<br>Yuichi Yamamoto, ORIX Auto Corporation                                                  |
| 7 Lavender Field (Tamabara Kogen, Gunma)<br>Satoko Nishimura, ORIX Rentec Corporation                                                                   | 17 Summer Beach (Okinawa)<br>Yuji Miura, ORIX Life Insurance Corporation                                                |
| 8 Three Peaks: Shakushidake, Shiroumayarigatake, and Yari-hotaka in the Distance (Summit of Mount Shirouma)<br>Chikashi Nishioka, ORIX Auto Corporation | 18 Annular Eclipse (Tokyo)<br>Kanako Shimizu, ORIX Auto Corporation                                                     |
| 9 Japanese White-eye in Kawazuzakura (Japanese Cherry) Tree (Tama-ku, Kawasaki)<br>Fumio Konishi, ORIX Rentec Corporation                               | 19 Maple Trees (Koishikawa Korakuen Gardens, Tokyo)<br>Tomoko Takeshima, ORIX Management Information Center Corporation |
| 10 Rock Ptarmigan (Tateyama Kurobe Alpine Route)<br>Yuki Inoue, ORIX Real Estate Corporation                                                            | 20 Kandachime Horses (Shiriyazaki, Aomori)<br>Akira Oda, ORIX Management Information Center Corporation                 |



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