

CSR priority theme

# The Environment

Addressing environmental issues and energy shortages represent critical issues facing society. A company will not be able to continue as a going concern without addressing these issues.

Through its businesses, the Nomura Real Estate Group is focused on deploying advanced eco-technologies and ICT, implementing passive design and creating energy through harmony with nature, and other initiatives that seek to lessen our environmental impact.

We are also engaged in ongoing efforts to support community development and environmental education through events and town meetings with the goal of achieving a sustainable society together with local communities.

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CSR | The Environment

# Environmental Management

## Environmental Activity Promotion Framework

### ■ The Group Environmental Philosophy

The Group believes that it has a duty to society to help pass the current natural environment down to future generations. In accordance with that belief, we are working to create communities and spaces in harmony with the environment, and we are pursuing the realization of ideal environmental quality. Nomura Real Estate Holdings has formulated the Nomura Real Estate Group Environmental Philosophy and is actively addressing environmental issues at the Group level.

#### **The Nomura Real Estate Group Environmental Philosophy**

The Group has a mission of utilizing the power and blessings of nature to create communities and spaces in harmony with the environment in order to pass down the earth's beauty to future generations.

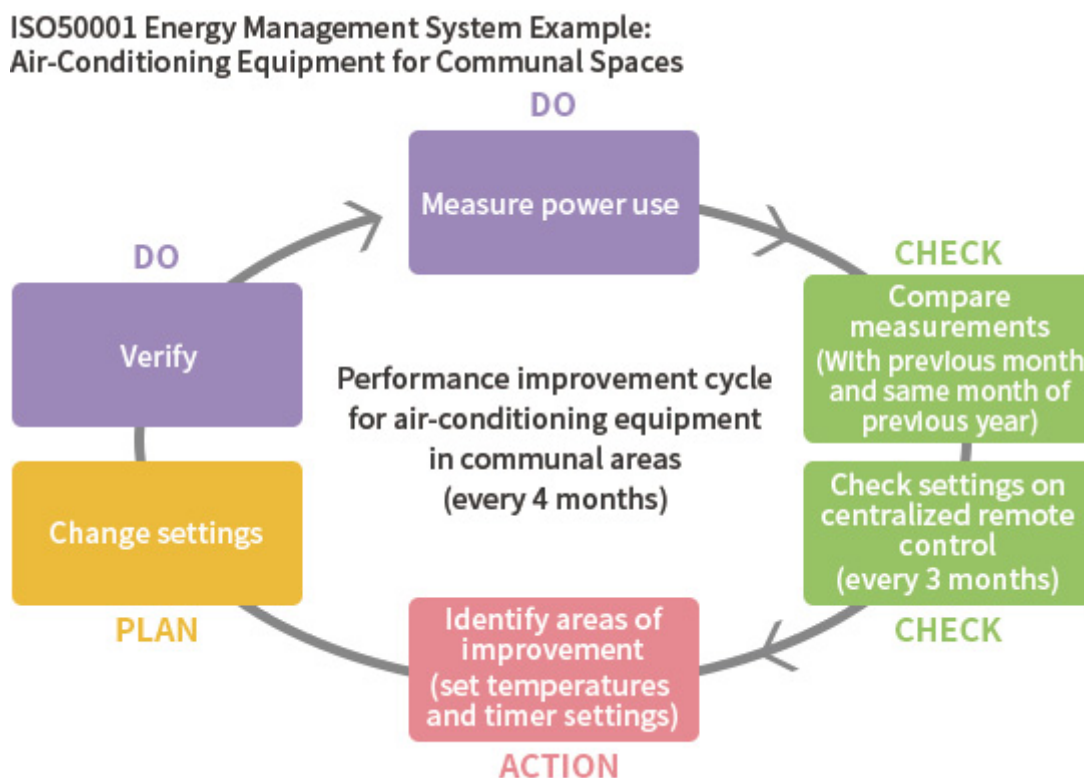
We will pursue the realization of ideal environmental quality with a strong will and increased sensitivity to the environment.

## Environmental Management System ISO 14001 Certification

The Yokohama Office of Nomura Real Estate Partners Co., Ltd. is a model environmental office that has earned ISO 14001 certification, the international standard for environmental management systems. The office is working to advance a wide range of initiatives, including waste reduction, resource recycling, and energy-saving measures.

## Energy Management System ISO 50001 Certification

At PROUD Funabashi Blocks 1&2, FamilyNet Japan Corp., one of our business partners, earned ISO 50001 certification for the development of the facility's energy management system. This marks one of our many efforts to build a sustainable energy management framework.



PROUD Funabashi showcases advanced energy management, especially in air-conditioning and lighting in communal spaces. The power used by each piece of equipment is measured, visualized, and analyzed, and the results are used to improve performance. By repeating this process, we work to optimize energy use in condominiums without overburden, waste, or irregularity.



## CSR | The Environment

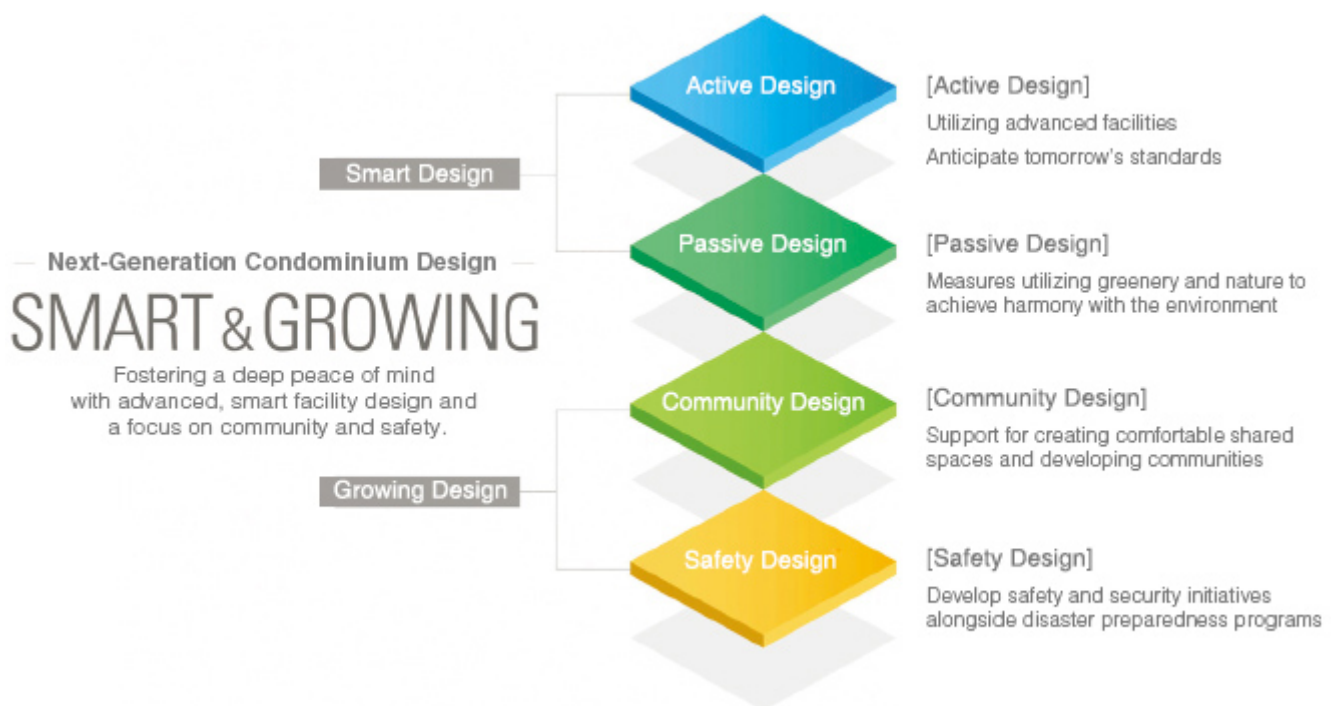
# Providing Environmentally Conscious Housing and Buildings

## Saving Energy and Reducing CO<sub>2</sub> Emissions

### PROUD Smart Design: SMART & GROWING

Nomura Real Estate Development has formulated its PROUD Smart Design: SMART & GROWING concept in line with its environmental vision focused on creating next-generation condominiums. SMART denotes a commitment to reducing environmental impact through the use of advanced equipment and through harmony with nature, and consists of active design and passive design. GROWING refers to achieving relaxing lifestyles and sustainability and consists of community design and safety design. Through these two concepts, we are focusing efforts on sustainability, providing homes with value that will stand the test of time.

#### PROUD Smart&GROWING





## Formulating the PROUD Environmental Assessment Sheet

Nomura Real Estate Development has created the PROUD Environmental Assessment Sheet as a step towards improving and standardizing PROUD's environmental performance. We have established 33 environmental performance standards that span energy conservation to greenhouse gas emission reductions to biodiversity. Personnel are required to check these standards when planning and designing products.

## Procuring and supplying power efficiently

At its PROUD condominiums, the Nomura Real Estate Group is rolling out its enecoQ service. This service promotes energy saving and cost reductions through a combination of ICT (information and communications technologies) and a high-voltage power receiving service for condominiums. We have also established NF Power Service Co., Ltd. to procure power for Group companies. By leveraging demand prediction models we have developed over the course of providing our enecoQ service, the company can now purchase power much more efficiently.

enecoQ

## ZUTTOCITY Becomes Certified Amagasaki-Version Smart Community

One of the largest train station area redevelopment projects, ZUTTOCITY (Amagasaki City, Hyogo Prefecture) has been certified as an Amagasaki-version smart community by Amagasaki City.

Through this project, we built a "town energy management system" for tracking energy consumption across the entire town. Using digital signage, the system provides a visual representation of energy usage in real time. This encourages people to go outside during times of peak demand and thereby reduce peak usage. As an incentive to go outside, the city provides residents with local currency points they can redeem at businesses in Amagasaki City (see figure below).

These efforts to save energy in and stimulate not just the property development area but an entire community by tying energy usage to local currency points has never been done before in Japan.



Public opening of  
ZUTTOCITY

## Grant local currency points based on energy conservation performance



### LAZONA Kawasaki TOSHIBA building wins the Energy Conservation Center of Japan Chairman's Prize, the grand prize for energy conservation

The LAZONA Kawasaki TOSHIBA building in Kawasaki, Kanagawa has implemented a building energy management system (BEMS) that visually represents energy usage and automatically manages lighting and air conditioning using image sensors. The system has decreased CO2 emissions by more than 50% over traditional office buildings and has both saved energy and increased comfort. For these achievements, we received the 2016 Energy Conservation Center of Japan Chairman's Prize, the grand prize for energy conservation.

\*Grand prize for energy conservation

An awards program run by Energy Conservation Center, Japan, with support from the Ministry of Economy, Trade and Industry. The program aims to encourage greater energy conservation in society through means such as raising energy conservation awareness and driving adoption of energy-saving products throughout Japan. Awards are given for outstanding energy conservation initiatives that provide a model for other companies and for products or business models that exhibit outstanding energy-saving performance.



LAZONA Kawasaki  
TOSHIBA building



Energy Conservation  
Grand Prize label

## ■ Purchasing Green Power at the Nihonbashi Muromachi Nomura Building

The Group is actively promoting environmental initiatives at its Nihonbashi Muromachi Nomura Building (Chuo Ward, Tokyo), including site landscaping, rooftop gardens, and water reuse. As a part of these initiatives, the building purchases 1 million kWh per year of electricity generated by renewable energy, which is known as green power.



Nihonbashi  
Muromachi Nomura  
Building

## ■ Moving Forward with Solar Power Generation Business

Yokohama Business Park Heating and Cooling Supply has installed solar panels on Landport, a distribution facility developed by the Nomura Real Estate Group, and has begun a solar power generation business. Landport's combined eleven facilities (as of March 2017) generate 8.95 million KWh of energy a year, equivalent to the annual power consumption of 2,490 ordinary households.\*

\* Assuming each of the 2,490 households uses 3,600 kWh a year. Source: The Federation of Electric Power Companies of Japan (FEPC), Electricity Statistics Information



## Solar Power Generation Business

	Buildings	Power output	General household consumption equivalent
FY 2016	7 buildings	Approx. 5.91 million kWh	Approx. 1,640 households
FY 2017	11 buildings	Approx. 8.95 million kWh	Power consumed by approx. 2,490 households

## Resource Conservation and Waste Reduction Initiatives

The Nomura Real Estate Group practices waste reduction, reuse, and recycling to make effective use of resources and reduce the waste generated through its business activities. With a view to helping create a recycling-based society, the company promotes the recycling of industrial waste while working to reduce regular waste.

## Proposing Energy Efficiency Solutions to Customers

### Energy Efficiency and Eco Proposals for Tenants

The Nomura Real Estate Group makes energy efficiency and environmental proposals to the tenant companies in its buildings and to the residents of its condominiums.

Nomura Real Estate Partners Co., Ltd. established a committee to respond to restrictions on power consumption. This committee makes proposals to building owners on ways to reduce power consumption in managed buildings. The company also employs an ASP\*-based system that compiles energy data, provides operational support, and conducts awareness-raising activities designed to reduce electricity use. The company makes energy efficiency and electricity conservation proposals to condominium associations and introduces examples of environmental initiatives through "Smile" Online, a housing newsletter that provides useful information about residential living.

\* ASP, or Application Service Provider, is a provider that rents business applications to customers via the Internet.

## Energy Efficiency Support Business

Nomura Real Estate Partners conducts an energy efficiency support business for tenant companies in the properties it manages and operates. Its efforts to contribute energy conservation include helping to create environment-related legal reports, providing energy usage calculation systems, and offering monitoring systems that visually represent energy usage.



The "ecomio" system visualized energy use

## Initiatives for Biodiversity

### PROUD City MusashinoMitaka has acquired both ABINC and JHEP certification

PROUD City MusashinoMitaka (located in Musashino, Tokyo) is the result of planning with a focus on preserving Musashino's abundant natural surroundings and the ecosystems of the area. This has led to the acquisition of two types of certifications related to biodiversity preservation: ABINC (Biodiversity-Promoting Office®)\*1 certification and JHEP (Japan Habitat Evaluation and Certification Program)\*2 rank AA certification. Nomura Real Estate Development is the first company in Japan to acquire both types of certification for a single spec home.

ABINC certification has also been obtained for PROUD Kokubunji (in Kokubunji, Tokyo) and Roka-Koen the Residence (in Setagaya Ward, Tokyo).



PROUD City  
MusashinoMitaka  
exterior

\*1 ABINC (Association for Business Innovation in harmony with Nature and Community) certification:

A certification program created to promote harmony between people and nature in corporate activities. Under the program, ABINC—as an independent party—evaluates and certifies housing developments office buildings and that engage in greening activities and that show a regard for biodiversity in accordance with the JBIB Guidelines for Sustainable Business Sites published by the Japan Business Initiative for Biodiversity (JBIB).

\*2 JHEP (Japan Habitat Evaluation and Certification Program):

A program developed and run by Ecosystem Conservation Society-Japan with the purpose of quantitatively evaluating and certifying efforts to preserve and restore biodiversity. It features strict standards comparable to those that exist internationally, and the number of certifications a company or organization acquires serves as an indicator of the degree to which it has achieved, in Japan, the Aichi Biodiversity Targets adopted at the COP 10 event in 2010.



## Criteria for acquiring certification

### <ABINC certification>

- At least 20% of the organization's floor area contributes to improving biodiversity
- Make considerations to allow a greater variety of organisms to thrive through three-dimensional greening that involves the use of grasses, bushes/shrubbery, and trees
- Develop contiguous green space stretching at least 300 m<sup>2</sup>
- Survey the history of the surrounding natural environment and land, and perform green space design and management planning
- Make considerations for spaces and pathways for animals to live and move through

### <JHEP certification>

- Demonstrate that the business increased improved biodiversity value
- Refrain from using ecosystem-damaging alien species or uncategorized alien species in the planting of vegetation
- Develop green spaces such as self-managed parks, public open spaces, or courtyards
- Preserve existing large-diameter trees

## Exhibit of Urban Design for Firefly Habitats held at Yokohama Business Park

Yokohama Business Park (YBP) received ABINC (Association for Business Innovation in Harmony with Nature and Community) certification (urban/SC ver.)\* for its consideration given to conserving biodiversity.

Held every year, the Exhibit of Urban Design for Firefly Habitats serves as an opportunity to think and learn about biodiversity and environmental problems together with tenant companies and local community members. The event received the Kanagawa Global Environment Award in FY 2013.



Exhibit of Urban Design for Firefly Habitats

## Promoting Green Design in Business Activities

The Nomura Real Estate Group actively conducts green space design with landscaping and trees, and maintains and manages landscaping at condominiums and office buildings.

Nomura Real Estate Development's PROUD condominiums use passive design strategies based on the PROUD Smart Design: SMART & GROWING concept. These include improving the visibility of vegetation from the street through the effective use of different sized trees, creating cool spots with tall trees, and taking into account continuity with surrounding green spaces.

## Environmental Certification

### Funabashi Morino City awarded ÉcoQuartier certification by the French Ministry of Housing

An eco-conscious urban development initiative based on the Smart & Share Town concept, Funabashi Morino City (in Funabashi, Chiba) became the first such project in the world to receive ÉcoQuartier certification (eco-district certification) outside of France. The certification was granted by the Ministry of Housing and Sustainable Homes of France in December 2016. Funabashi Morino City is an eco-conscious urban development project achieved through a combination of advanced environmental, information, and communication technologies, and a design that takes advantage of wind flow, sunlight, greening, and other aspects of nature. Established through cooperation with the City of Funabashi, the Morino City Community Building Committee (currently registered as a neighborhood council in the City of Funabashi as the "Morino City Community Association") works with local residents and enterprises to develop the urban landscape and stimulate the community. This certification comes in recognition of the committee's efforts to work with government, the private sector, and city residents to practice urban development and support a local recycling economy.



Certification-granting ceremony held in Paris, France



ÉcoQuartier certification

### Yokohama Nomura Building acquires LEED, CASBEE, SEGES, and other certifications

The Yokohama Nomura Building (in Yokohama, Kanagawa) has acquired LEED CS GOLD and CASBEE S rank (environmental performance rating system) certifications as well as SEGES (Social and Environmental Green Evaluation System) certification. This demonstrates the building's strong BCP performance achieved through the use of technologies that include seismically isolated structures, cogeneration systems that use medium-pressure gas, and dual fuel emergency generators. It also recognizes the building's strengthened environmental performance, the result of using equipment with low environmental impact coupled with greening activities that include planting more than 80 tall trees and creating green walls.



Yokohama Nomura Building

## Promoting the Acquisition of CASBEE Certification

The Nomura Real Estate Group actively works to reduce environmental impact with the goal of acquiring CASBEE\* certification.

Nomura Real Estate Development acquires CASBEE A or higher ratings for the PMO (premium midsize office) buildings and Landport logistics facilities it develops.

\*CASBEE, or Comprehensive Assessment System for Built Environment Efficiency, includes the certification program administered by the Institute for Building Environment and Energy Conservation (IBEC) and programs such as CASBEE Kawasaki, which are administered by local governments.

CASBEE Certified Properties

Building	Rank
Yokohama Nomura Building	S
PMO Nihonbashi Edodori	A
PMO Nishi Shinbashi	A
PMO Shin Nihonbashi	A
PMO Kanda Iwamotocho	A
Landport Iwatsuki	A
Landport Kashiwanami I	A
Landport Kashiwanami II	A

\* Only major properties certified in FY 2016 are shown



## Acquisition of Green Building Certification

Nomura Real Estate Development has acquired DBJ Green Building certification for its Landport logistics facility and for office buildings that we developed, including PMOs (premium midsize offices) and the Nihonbashi Muromachi Nomura Building (Chuo Ward, Tokyo). This certification recognizes these facilities' efforts to regard for the environment in deploying the latest equipment, their efforts to visualize energy usage, and the measures in place to ensure comfortable working environments for tenants. Newly acquired certifications in fiscal 2016 are shown at right.

\*1 DBJ Green Building Certification System:

A ranking system employed by the Development Bank of Japan. The system is designed to promote real estate development planning that considers environmental performance, disaster preparedness, and security as well as social needs from a diverse range of stakeholder.

\*2 Plan Certification:

The Development Bank of Japan's Green Building Certification Program utilizes a model to score real estate development projects in the planning stage for their environmental performance and tenant user friendliness and rank them accordingly.

### Properties with Green Building Certification

Building Name	Rank
Landport Kashiwa Shonan I	2015 Plan 
Landport Kashiwa Shonan II	2015 Plan 
Landport Takatsuki	2015 Plan 
Landport Hachioji II	2015 Plan 
Landport Iwatsuki	2015 Plan 
Landport Komaki	2015 Plan 

\* Only major properties certified in FY 2016 are shown

# Environmental Considerations during Construction and Demolition

## Policy and Standards

### PROUD Environmental Guidelines

We created the PROUD Environmental Guidelines for construction partners to help reduce environmental impacts from construction sites. These guidelines include design consideration, such as greenery and use of recycled materials, and the promotion of the 3Rs (Reduce, Reuse, Recycle).

#### Summary

- Improve environmental awareness
- Reduce waste emissions and increase recycling rate
- Reduce impacts on the natural environment and surrounding environment
- Reduce greenhouse gas emissions
- Promote the use of products, technologies and methods with fewer environmental impacts
- Proper management and reduced usage of chemicals

## Initiatives to Reduce Hazardous Materials and Prevent Pollution

### Asbestos: Proper Handling and Continuous Monitoring

The Nomura Real Estate Group handles asbestos found during demolition work with the utmost caution and care by cordoning off affected areas and ensuring regular third-party testing to determine presence and concentration. We also conduct continuous monitoring to ensure that no problems exist.

## ■ Initiatives against Soil Contamination

The Nomura Real Estate Group thoroughly investigates the history of land use prior to the purchase of any site for development and hires specialists to conduct soil surveys when prior soil contamination is suspected. If soil contamination is found, we initiate measures required under the Soil Contamination Countermeasures Law and other related laws, which include the removal or containment of substances.

## ■ Initiatives for Reducing Chemicals used in Construction Materials

The Nomura Real Estate Group is firmly committed to the proper management of chemical substances and is working to reduce the amounts it uses.

In its spec home business, Nomura Real Estate Development stipulates in its own Condominium Design Standards (Quality Standards) the requirement that materials used in construction have a four star\* formaldehyde emission rating. At the time of completion, we also measure the levels of formaldehyde, toluene, xylene, ethylbenzene, and styrene, the five substances designated in the Housing Quality Assurance Promotion Act.

To ensure the proper handling and reduced usage of VOCs, PCBs and other chemicals, we require our construction partners to follow the PROUD Environmental Guidelines during construction. Construction partners are also required to submit a Quality Control Check Sheet.

Furthermore, in the development of our office buildings, shopping centers, and other such facilities, we use F Four Star (F☆☆☆☆) rated materials and require our construction contractors to provide quality control check sheets.

\* Four star formaldehyde rating:

The highest rating against formaldehyde emissions



## ■ Initiatives for Reducing Chlorofluorocarbon

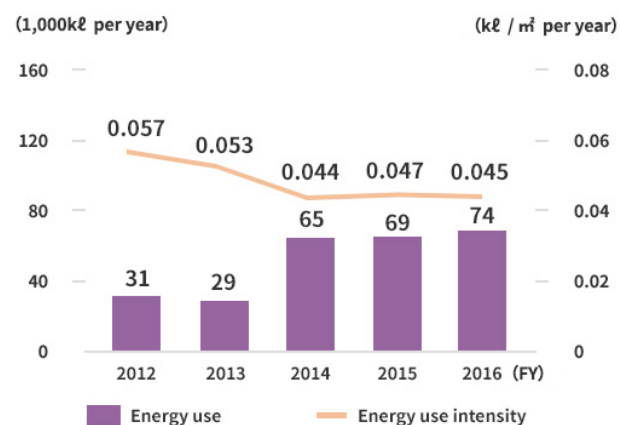
The Nomura Real Estate Development Condominium Design Manual requires the use of chlorofluorocarbon-free insulation and refrigerants used in air conditioners to prevent emissions of ozone-damaging chlorofluorocarbon. Construction partners are also required to submit a Quality Control Check Sheet during construction to confirm that only chlorofluorocarbon-free materials have been used.

# Environmental Data

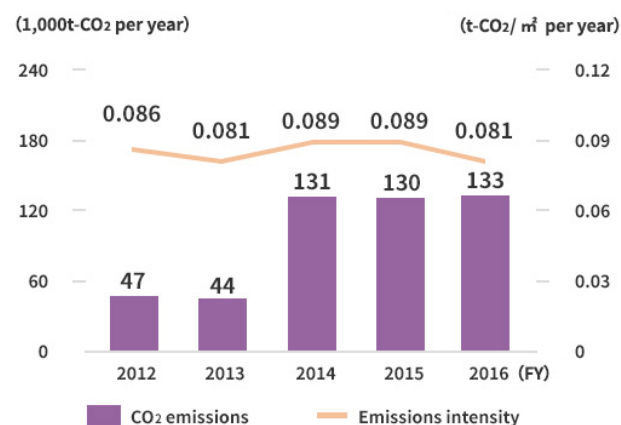
## Environmental Data

The Nomura Real Estate Group gathers environment-related data for the major facilities that must be registered under the Energy Saving Act.

Crude Oil-Equivalent Energy and Intensity



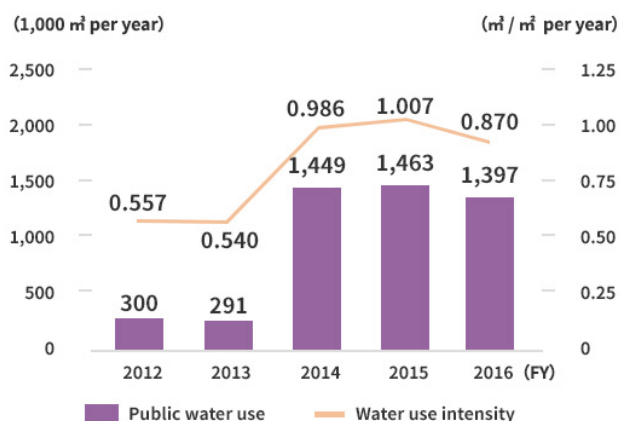
CO<sub>2</sub> Emissions and Intensity



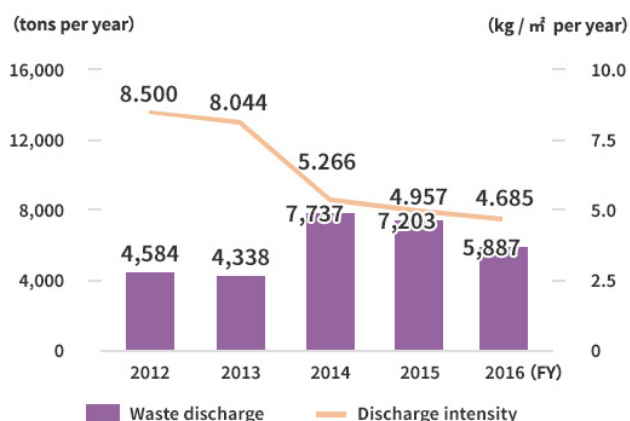
	2012	2013	2014	2015	2016
<b>Energy use</b> (1,000k ℓ per year)	31	29	65	69	74
<b>Energy use intensity</b> (k ℓ / m <sup>2</sup> per year)	0.057	0.053	0.044	0.047	0.045

	2012	2013	2014	2015	2016
<b>CO<sub>2</sub>emissions</b> (1,000t-CO <sub>2</sub> per year)	47	44	131	130	133
<b>Emissions intensity</b> (t-CO <sub>2</sub> /m <sup>2</sup> per year)	0.086	0.081	0.089	0.089	0.081

## Public Water Use and Intensity



## Waste Discharge and Intensity



	2012	2013	2014	2015	2016
<b>Public water use (1,000m<sup>3</sup> per year)</b>	300	291	1,449	1,463	1,397
<b>Water use intensity (m<sup>3</sup>/m<sup>2</sup> per year)</b>	0.557	0.540	0.986	1.007	0.870

	2012	2013	2014	2015	2016
<b>Waste discharge (tons per year)</b>	4,584	4,338	7,737	7,203	5,887
<b>Discharge intensity (kg/m<sup>2</sup> per year)</b>	8.500	8.044	5.266	4.957	4.685

\* Until fiscal 2013, this included seven buildings (primarily used for office space) that were subject to the Tokyo Metropolitan Ordinance on Environmental preservation and that had a Nomura Real Estate Group floor area ownership of 50,000 m<sup>2</sup> or more.

\* For fiscal 2014, this included 143 facilities requiring registration under the Energy Saving Act (including some waterworks, sewerage, and waste facilities), excluding condominium sales centers. (There were a total of 201 facilities.)

\* For fiscal 2015, this included 142 facilities requiring registration under the Act on the Rational Use of Energy (including some waste facilities), with the exception of condominium sales centers. (There were 210 facilities in total.)

\* In fiscal 2016, this included 181 facilities requiring registration under the Act on the Rational Use of Energy (including some waterworks, sewerage, and waste facilities), with the exception of condominium sales centers.

\* CO<sub>2</sub> emissions are calculated using the coefficient stipulated in the Tokyo Metropolitan Ordinance on Environmental Preservation.