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■ Environmental Conservation Initiatives

> Climate Change

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TOKYU FUDOSAN HOLDINGS GROUP  
Recovery Support Project

Great East Japan Earthquake



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# Environmental Conservation Initiatives



The Tokyu Fudosan Holdings Group, based on its Environmental Vision, is implementing measures to address five environmental issues (climate change, biodiversity conservation, pollution and resources, water usage, and supply chain) from three viewpoints.



## Environmental Vision

Basic Policy developed in 1998, revised in 2015

### ● Environmental Philosophy

We will create value to connect cities and nature, and people with the future.

### ● Environmental Policy

We will make efforts to harmonize the environment and the economy through business activities.

### ● Environmental Action

We will tackle five environmental issues from three viewpoints.

### ● Three viewpoints

- Publicize a goal and implement action.
- Endeavor to implement progressive activities.
- Conduct community-based activities in collaboration with local people.

### ● Five environmental issues

- Climate Change
- Biodiversity Conservation
- Pollution and Resources
- Water Use
- Supply Chain

> Climate Change

> Biodiversity Conservation

> Pollution and Resources

> Water Use

> Supply Chain (Environment)

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## Climate Change

### Policy

The Tokyu Fudosan Holdings Group recognizes that climate change is an important environmental issue that greatly impacts its business activities.

In 2014, the Intergovernmental Panel on Climate Change (IPCC) released the Fifth Assessment Report (AR5). This report found that warming of the climate system is unequivocal and it is extremely likely that human influence has been the dominant cause of the observed warming since the mid-20th century. Climate change caused by global warming not only causes rising sea levels, but also abnormal weather such as an increase in heavy rains and flooding as well as droughts. The businesses of the Group are not only directly affected by weather conditions, such as snowfall amounts required to operate ski areas, but also indirectly affected as well such as the fact that the worldwide procurement of various supplies required for our businesses may become difficult.

### Commitments

It is based on this awareness that the Group is promoting the more efficient use of energy and the utilization of renewable energy at its business offices as well as the office buildings, commercial facilities and resorts that it owns in an effort to mitigate the impacts that its business activities have on climate change. The development and operation of energy efficient office buildings, commercial facilities and resorts will create business opportunities and enhance the competitiveness of the Group. We will continue to work with design firms, construction companies, end users and other stakeholders in an effort to realize a low-carbon society and address the issues of climate change and energy consumption.

Tokyu Fudosan Holdings

### Management Structure

The Tokyu Fudosan Holdings Group has in place the Tokyu Fudosan Holdings Sustainability Committee, which is chaired by the President & Representative Director of Tokyu Fudosan Holdings and co-chaired by the Director in Charge of CSR of Tokyu Fudosan Holdings, and whose members include directors in charge of CSR from Tokyu Fudosan Holdings' subsidiaries. The committee meets regularly twice a year to discuss, plan and confirm results pertaining to material issues, such as compliance, climate change, social contributions, and diversity. In turn, the results of committee deliberations are reported to the Board of Directors, which is led by the President & Representative Director of Tokyu Fudosan Holdings.

Additionally, the Environment/Social Contribution Council, established as a subcommittee to the Tokyu Fudosan Holdings Group Sustainability Committee, leads relevant management activities across the entire Group.

The Environment/Social Contribution Council, comprised of environmental managers from each group company, sets group-wide fiscal year targets for greenhouse gas emissions, a major cause of climate change, monitors results and shares information based on a shared policy. This ensures proper reporting under relevant laws and regulations and environmental impacts are reduced through business activities.

Tokyu Fudosan Holdings

## Recognition of climate change ~ Disclose time horizon (short/medium/long term) of business related risk and/or opportunity

In fiscal 2017, the Tokyu Fudosan Holdings Group launched the 2017-2020 Management Plan as stage 2 of its Value Frontier 2020 medium-and long-term management plan. One of the materialities that form the basis for its formulation is the "change in the natural environment". Among them, we regard "climate change" as medium to long-term risk.

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### Impact of climate-related risks and opportunities

- With advanced renewable energy sources and technologies including energy management system becoming available, Tokyu Land Corporation has always been on the lookout for latest trends and technologies to identify and seize business opportunities that climate change presents. One such example is BRANZ City Shinagawa Katsushima, the first condominium in the world with each unit equipped with ENE-FARM, a fuel cell system developed specifically for multi-family residential. Also successfully completed in FY2017 are two multi-family residential projects, one with 11kW-solar power generation system and the other with EV sharing. We are now looking to offer residential with smart home services using cutting-edge energy management system and IoT technology.

- The Energy Conservation Act has been strengthened in recent years and we adhere to the stricter requirements as part of our climate-change risk management. Under the amended Act, we are required to make an effort to reduce annual emissions from our properties including office buildings, commercial facilities, resort facilities and fitness facilities by average of 1%. We renew and renovate our facilities and run routine energy management and energy conservation activities in order to meet the reduction target and other requirements.

### Climate change risks and opportunities in our strategy

	Politics	Economy	Society	Technology
Transition risk (i.e. tighter regulations)	<ul style="list-style-type: none"> <li><b>Carbon price</b> <span style="color:red">Large impact</span> Increase in CO2 emission cost due to carbon tax etc.</li> <li><b>Carbon emission target/regulation</b> <span style="color:red">Large impact</span> Increased introduction cost for technologies and systems due to boarder coverage of and higher targets for Energy conservation law and cap-and-trade program, energy-efficient performance.</li> <li><b>ZEB Law</b> <span style="color:red">Large impact</span> Increase in construction / renovation cost in order to meet Zero Energy Building Law.</li> </ul>	<ul style="list-style-type: none"> <li><b>Energy price</b> Wider use of renewable energy and cost increase of fossil fuel causes grid stability to decrease, leading to higher energy price.</li> <li><b>Trend in Energy demand</b> Fluctuation in overall energy demand affects energy purchase cost.</li> <li><b>Change in energy mix</b> Changes in % of renewable energy in the energy mix requires businesses to take measures to achieve additional emission reduction.</li> </ul>	<ul style="list-style-type: none"> <li><b>Changes in customer behavior</b> <span style="color:red">Large impact</span> Higher demand expected for buildings with ①disaster prevention performance ② eco-friendly features</li> <li><b>Changes in business reputation from customer/investor</b> <span style="color:red">Large impact</span> Lack of or deferred approach to buildings' ①disaster prevention features and ② eco-friendly features may lead to customer boycott and/or divestment.</li> </ul>	<ul style="list-style-type: none"> <li><b>Advanced ZEB technology</b> <span style="color:red">Large impact</span> Less cost burden for building construction/renovation thanks to advanced material and technology for ZEB</li> <li><b>Broader use of energy conservation/renewable energy technologies</b> <span style="color:red">Large impact</span> As the society moves toward low-carbon, advanced energy conservation and renewable energy related technologies become widely available, leading to lower introduction cost for such technologies.</li> </ul>
Physical risk (i.e. climate change)	<ul style="list-style-type: none"> <li><b>Rise in average temperature and sea-levels</b> <span style="color:red">Large impact</span> Higher average temperature leads to more cases of heatstroke and additional cooling cost. Higher sea-levels create risk of flooding of our facilities.</li> <li><b>Abnormal climate and acute disasters(wind hazard and flooding)</b> <span style="color:red">Large impact</span> Frequent typhoons, torrential rainfalls cause wind hazards and flooding, leading to increased cost for building repair and reduced customer.</li> </ul>			

TOKYU LAND CORPORATION

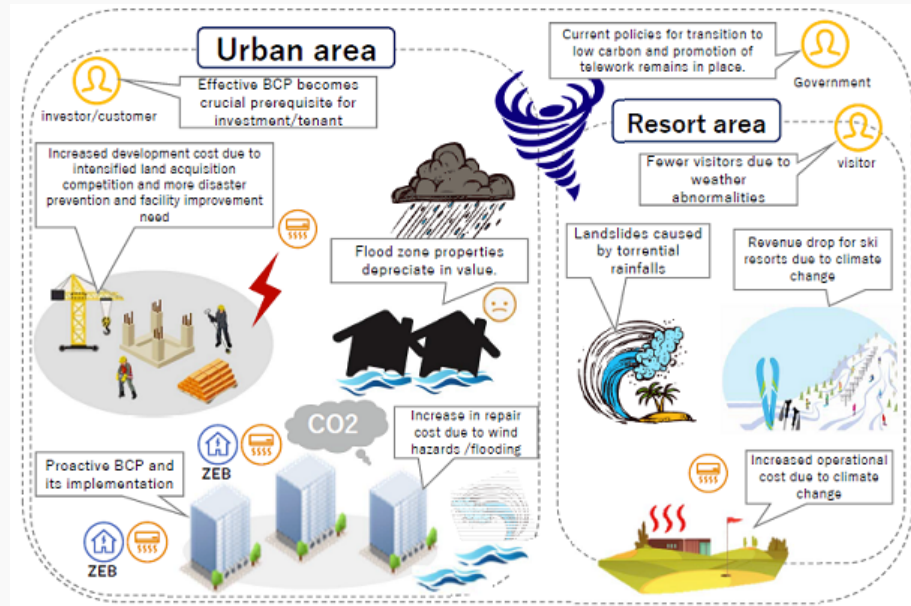
## Climate Scenario plannings and climate-related risk management

- Society in 4°C scenario

Worsening natural disasters while transition to low carbon/renewable energy stalled.

- Society in 2°C scenario

Natural disasters becomes not as worse as 4°C scenario while ZEB/renewable energy become popular.



■ Society in 4°C Scenario (Impact of climate change is large.)				
Environmental change	Negative business impact	Financial impact	Positive business impact	Financial impact
Intensification of natural disasters	〈Urban area〉 Frequent wind hazards/floods 〈Resort area〉 Increased damage caused by landslides	↓	〈Urban area・Resort area〉 Properties being selected based on BCP	↑
Average temperature rise	〈Urban area〉 Sea level rise and storm surges constrain construction sites and architectural design 〈Resort area〉 Due to the reduction of snowfall, the operation period of the ski resort is shortened	↓	〈Urban area〉 Resilient buildings・Remote Work・Setting up satellite offices 〈Resort area〉 Deploying cutting-edge snow machine. All-weather indoor resort	↑
■ Society in 2°C Scenario (The impact of regulatory changes is significant.)				
Introduction of carbon tax	〈Urban area・Resort area〉 Cost of carbon tax incurred	↓	〈Urban area・Resort area〉 Superiority of high environmental performance buildings. Utilization of renewable energy	↑

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## Support for activities to avoid climate change

Tokyu Fudosan Holdings Corporation has agreed to the recommendations of “Task Force on Climate-related Financial Disclosures(TCFD)” established by the Financial Stability Board (FSB).



As a member of the environmental committee of "The Real Estate Companies Association of Japan", Tokyu Land corporation is working on promoting environmental action in the real estate industry. The committee periodically collects excellent efforts by member companies that lead to reduction of environmental burden and sustainable society building. They are used to share information among member companies and to further improve environmental awareness. Furthermore, we actively make proposals to public policies and regulations through "Low Carbon Town Planning Action Plan" or "Environmental voluntary action plan" etc.

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## Financial quantification of climate change

### a: Costs associated with climate change

We expect apparent exposure to physical risks associated with climate change by year 2050. We have therefore established a set of expected climate change factors affecting our resort facility business in year 2050, and identified possible risks to the business:

- Decrease in revenue due to unexpected weather conditions including intense rainfalls and typhoons leading to fewer operating days.
- Added restoration cost related to collapsed slopes in the resort facilities caused by unexpected torrential rain.
- Decrease in revenue generated from our ski resorts and other winter sports facilities due to shorter operating period caused by warmer temperature and less snowfall amid global warming.

### b: Investment in R&D on climate change

In order to reduce exposure to GHG emissions and therefore less sensitivity to changes in cost of carbon, we have been advancing our research of and exploring further deployment of renewable energy generation facilities including solar and wind power generations to our commercial and resort facilities.

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## Supporting international initiatives

The Group supports and respects the UN Global Compact. In accordance with the 10 principles of the UN Global Compact broken down by the subjects of human rights, labour, environment, and anti-corruption, we are promoting responsible management aimed at contributing to the realization of a sustainable society.

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Tokyu Fudosan Holdings

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## Practice and Implementation

### Program to promote corporate value improvement through decarbon management

Tokyu Fudosan Holdings Co., Ltd. participated in the "Corporate Value Improvement Promotion Program by Decarbonizing Management" sponsored by the Ministry of the Environment in fiscal 2018, and studied internal carbon prices. <https://iss.ndl.go.jp/books/R100000002-I029607386-00>

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Tokyu Fudosan Holdings

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## Unquantified, Process CO<sub>2</sub> reduction targets

Tokyu Land Corporation has established process targets for the development projects it is involved in based on the format of these projects. For example, development projects involving new build condominiums must comply with Insulation Performance Level 4 within the Evaluation Methods and Standards based on the Housing Quality Assurance Act. Also, Tokyu Plaza Ginza, a large-scale commercial facility, will be developed with the same level of performance as quasi-top level place of business recognized for outstanding countermeasures taken against global warming by the Tokyo Metropolitan Government.

## Quantified CO<sub>2</sub> reduction targets

### [Short- to medium-term quantified target]

- The Tokyu Fudosan Holdings Group aims to reduce CO<sub>2</sub> emissions per floor area of our business offices 25% compared to FY 2005 by the FY 2020.
- The Tokyu Fudosan Holdings Group aims to reduce CO<sub>2</sub> emissions per floor area of real estate portfolio 25% compared to FY 2005 by the FY 2020.

### [Long-term quantified target]

- The Tokyu Fudosan Holdings Group aims to reduce CO<sub>2</sub> emissions per floor area of our business offices 30% compared to FY 2005 by FY 2030.
- The Tokyu Fudosan Holdings Group aims to reduce CO<sub>2</sub> emissions per floor area of real estate portfolio 30% compared to FY 2005 by FY 2030.

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## GHG(CO<sub>2</sub>) emissions data

(unit: thousand t-CO<sub>2</sub>)

	2015 (FY)	2016 (FY)	2017 (FY)
Scope 1	210.7	43.0	42.9
Scope 2		190.1	184.6
Scope 3 ▼	821.9	682.1	585.9

• Scope 1 · 2 cover the scope of Tokyu Fudosan Holdings and five operating companies.

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## Energy usage data

(unit: thousand GJ)

	2015 (FY)	2016 (FY)	2017 (FY)
Scope 1	4,374.3	4,542.6	4,463.5
Scope 2			

• Scope 1 · 2 cover the scope of Tokyu Fudosan Holdings and five operating companies.

Tokyu Fudosan Holdings

## GHG(CO<sub>2</sub>) emissions and energy consumption

	2005 (FY; base year)	2015 (FY)	2016 (FY)	2017 (FY)	2020 (FY; short-term target year)	2030 (FY; long-term target year)
GHG(CO <sub>2</sub> ) emissions (Unit:thousand t-CO <sub>2</sub> )	655.4	210.7	233.0	227.5	-	-
Energy consumption (Unit:thousand GJ)	-	4,374.3	4,542.6	4,463.5	-	-
GHG(CO <sub>2</sub> ) emissions (intensity) (Unit:kg-CO <sub>2</sub> /m <sup>2</sup> )	133	98.4	106.7	101.0	100	93
Achievement rate	-	-26%	-20%	-24%	-25%	-30%
Energy consumption (intensity) (Unit:thousand GJ/m <sup>2</sup> )	-	2,043	2,081	1,983	-	-

Number of target facilities	-	210	192	204
Office buildings	-	80	70	73
Commercial facilities	-	64	59	64
Resorts facilities	-	58	55	55
Other	-	7	7	11
Overseas	-	1	1	1
Floor area	492.6	2,291.9	2,184.3	2,251.3
Office buildings	-	718.3	599.3	655.3
Commercial facilities	-	1,226.3	1,042.4	1,050.8
Resorts facilities	-	296.3	491.6	491.6
Other	-	35.7	35.7	38.3
Overseas	-	15.3	15.3	15.3

· As greenhouse gases other than CO<sub>2</sub> are extremely small amounts, CO<sub>2</sub> emissions are regarded as greenhouse gas emissions.

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## Reduction of CO<sub>2</sub> emissions / Reduction of energy consumption

### ● Reduction of CO<sub>2</sub> emissions / Reduce energy consumption at resort facilities

#### ( I ) Unquantified, Process targets

##### (1) Targets in the investment process

- ① Electrical facility : Introduction of energy saving fluorescent spheres and LED lamps
- ② Water supply and sanitation facility : Introduction of water-saving type faucets
- ③ Air conditioning equipment : Update, Installation of inverter control device

## (2) Targets in the management process

### ① Electrical facility

- Review of lighting time
- Unnecessary lights go out
- Review illuminance

### ② Water supply and sanitation facility

- Revision of temperature setting of cold / hot water
- Review operating hours
- Review temperature setting and capacity of hot water tank, bath tub or pool etc

### ③ Air conditioning equipment

- Operation at proper temperature
- Stop unnecessary air conditioning and introduce outside air and efficient operation of total heat exchanger
- Clean filter or fin of air conditioner, ventilator and kitchen exhaust hood

## (II) Achievement status on quantified reduction targets

[Achievement status]

※Compared to FY2005

FY2015	FY2016	FY2017
-26%	-21%	-24%

## ● Process or quantified targets and records on reduction of CO<sub>2</sub> emissions or energy consumption (FY2017)

### (1) Targets in the investment process and reduction record

#### ① Electrical facility:

Energy reduction target 10.03kl ⇒ record-10.8kl

CO<sub>2</sub> reduction target 26.28t-CO<sub>2</sub> ⇒ record-28.30t-CO<sub>2</sub>

#### ② Water supply and sanitation facility:

Energy reduction target 7.93kl ⇒ record-6.6kl

CO<sub>2</sub> reduction target 20.78t-CO<sub>2</sub> ⇒ record-17.29t-CO<sub>2</sub>

#### ③ Air conditioning equipment:

Energy reduction target 13.17kl ⇒ record-13.0kl

CO<sub>2</sub> reduction target 34.50t-CO<sub>2</sub> ⇒ record-34.06t-CO<sub>2</sub>

### (2) Targets and records in the management process

#### ① Electrical facility :

Energy reduction target 14.92kl ⇒ record-16.1kl

CO<sub>2</sub> reduction target 39.09t-CO<sub>2</sub> ⇒ record-42.18t-CO<sub>2</sub>

#### ② Water supply and sanitation facility:

CO<sub>2</sub> reduction target 39.71kl ⇒ record 2.4kl

CO<sub>2</sub> reduction target 104.04t-CO<sub>2</sub> ⇒ record 6.29t-CO<sub>2</sub>

#### ③ Air conditioning equipment:

CO<sub>2</sub> reduction target 39.02kl ⇒ record-19.1kl

CO<sub>2</sub> reduction target 102.23t-CO<sub>2</sub> ⇒ record-50.04t-CO<sub>2</sub>



## Initiatives to Address Social Issues through the Renewable Energy Business

Amid calls to reduce emissions of CO<sub>2</sub> and other greenhouse gases in the supply of energy, expectations are rising for renewable energy from solar and wind power. Renewable energy is not depleted with use because it is produced from natural phenomena. It also does not emit greenhouse gases. The renewable energy business, in addition to producing clean energy, contributes to local job creation and economic activity through the development and operation of power generation facilities.

### SDGs in the Renewable Energy Business

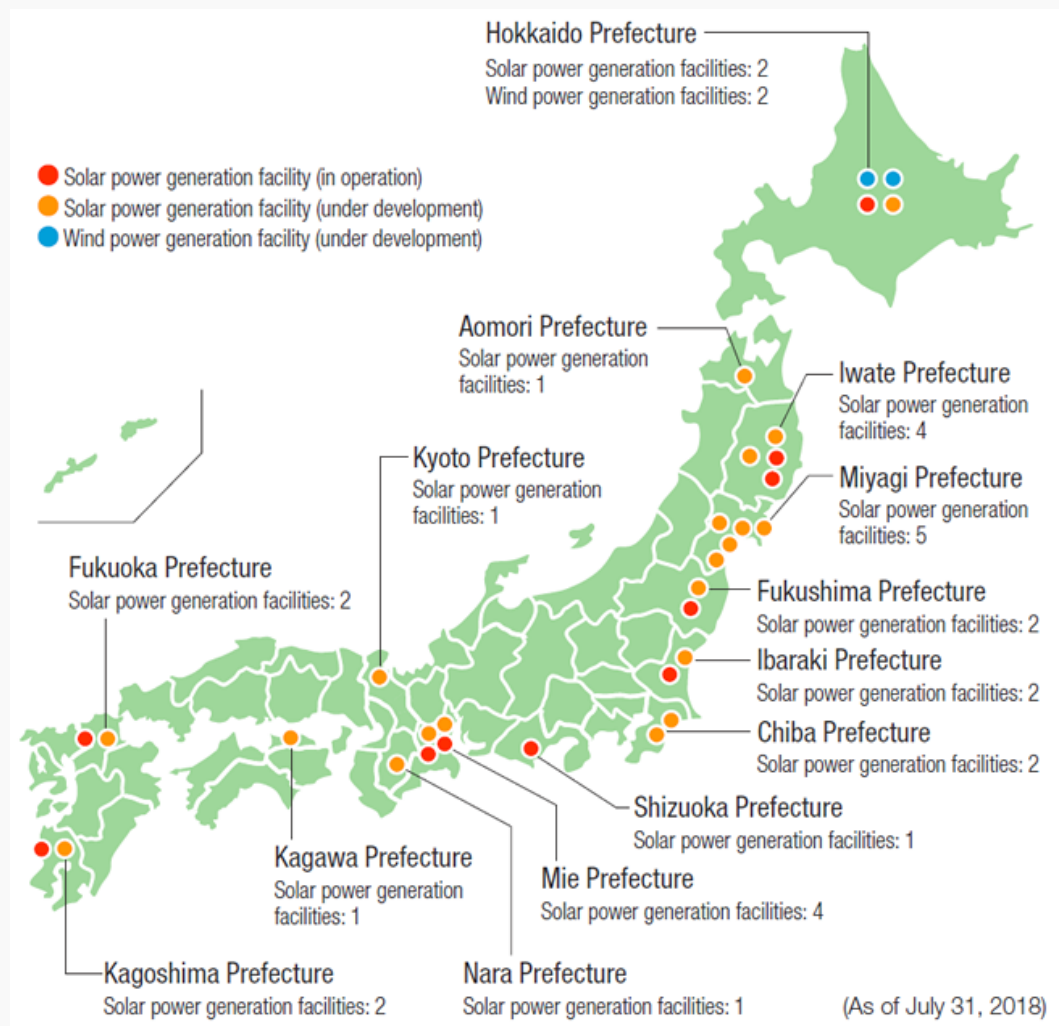


### Development of the Renewable Energy Business in 32 Locations Nationwide

The Group first invested in a solar power generation project in 2014. In 2017, we entered into a capital and business alliance with Renewable Japan Co., Ltd., a renewable energy provider. In July 2018, through a joint investment with the Development Bank of Japan we began an ownership and operation business for seven projects that are either currently in operation or under development. With this investment, we are now involved in renewable energy business facilities in 32 locations throughout Japan (including projects under development).

Projects in various regions are moving forward, including the Suzuran Kushiro-cho Solar Power Plant (tentative name), which will be one of Japan's largest solar power generation facilities equipped with storage batteries, and an innovative solar sharing business in Ichinoseki, Iwate Prefecture that will operate both a solar power generation facility and an agricultural business. We will continue to contribute to the realization of a sustainable society and regional development through our businesses

### Renewable Energy Business Map



## Reduction in CO<sub>2</sub> emissions in office buildings

The Group works to reduce CO<sub>2</sub> emissions in the office buildings it manages through the installation of energy-saving equipment and in cooperation with its tenants. By implementing these initiatives, the Group aims to serve a pioneering role in achieving the numerical energy conservation targets for new office buildings stipulated in the environmental action plan formulated by the Real Estate Companies Association of Japan.

At the Shin-Meguro Tokyu Building developed by Tokyu Land Corporation, we have achieved visualization through the installation of BEMS (building energy management system) monitors on each floor that allow tenants to confirm their energy consumption and also reduced energy use for the entire building through means such as the installation of natural ventilation systems and automatic dimming equipment.



Shin-Meguro Tokyu Building



Energy management monitor for each floor

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## Reduction in CO<sub>2</sub> emissions in condominiums

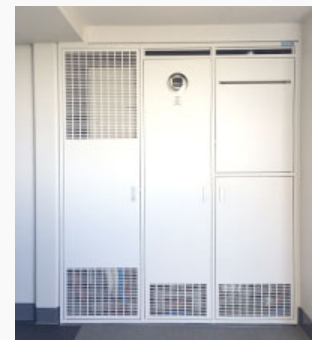
The 356-unit Branz City Shinagawa Katsushima is a large condominium building in which the collective strengths of the Tokyu Group, including Tokyu Land Corporation and Tokyu Community Corporation, are being used to make it more energy efficient.

As a result of efforts including the adoption of the world's first home use fuel cell for condominiums called Enefarm in all housing units and the installation of HEMS as a system that enables the visualization of home power consumption, it has been estimated that CO<sub>2</sub> emissions have been reduced by at least 60% and the highest S Rank (self-evaluation) has been acquired using CASBEE (Comprehensive Assessment System for Built Environment Efficiency).

We will verify CO<sub>2</sub> reduction results and provide feedback to residents as we aim for even further energy efficiency. In recognition of these efforts, the project was selected as a Low-CO<sub>2</sub> Residence and Building Leadership Project by the Ministry of Land, Infrastructure and Transport.



Branz City Shinagawa Katsushima



Enefarm for condominiums

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## Use of renewable energy

The Group uses photovoltaic energy, wind power and other forms of natural energy to power various businesses.

Solar power generation systems have been introduced to resort facilities, specifically to the Palau Pacific Resort and Tokyu Harvest Club Atami Izusan & VIALA. In addition, at the commercial facility Tokyu Plaza Omotesando Harajuku, two wind turbines have been installed on the rooftop to foster the use of natural energy.



Photovoltaic energy  
(Palau Pacific Resort and Tokyu Harvest Club Atami Izusan & VIALA)



Wind power  
(Tokyu Plaza Omotesando Harajuku)

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## Company position on public policy for mitigating climate change

Tokyu Land Corporation approves the Tokyo Cap-and Trade program.

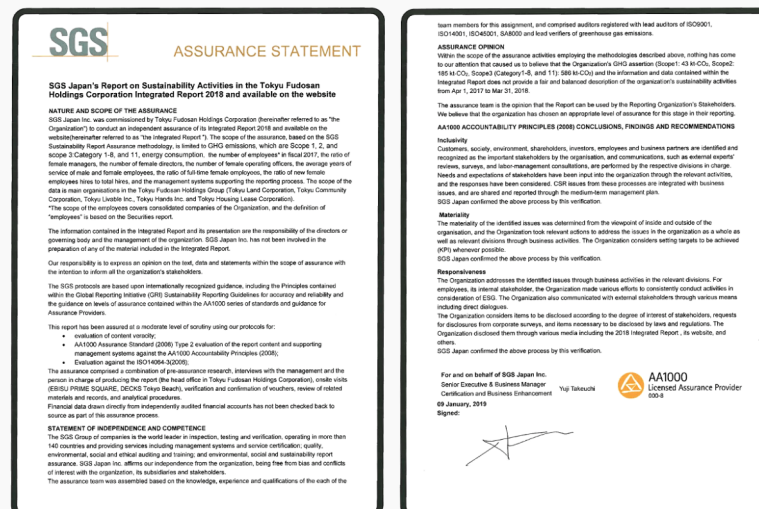
[Our data is here.](#)

TOKYU LAND CORPORATION

## Third-party Independent Verification of Environmental Data

The Tokyu Fudosan Holdings Group receives independent verification of its environmental data from a third-party in order to ensure the reliability of this information. For fiscal 2018, the scope of this verification includes data for our greenhouse gas emissions (Scope 1, Scope 2, Scope 3 (Category 1-8 and 11) and energy consumption).

## Third-party Verification Report on Greenhouse Gas Emissions



[Third-party Verification Report.pdf \(PDF:234KB\)](#)

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## Biodiversity Conservation

### Policy

Tokyu Fudosan Holdings Group's business activities rely heavily on ecosystem services for land development and materials procurement. Given this, we are strongly aware that biodiversity conservation represents an important environmental issue.

The loss of biodiversity would make it difficult for us to reap the benefits of ecosystem services that until now have benefited our businesses in terms of land use and construction materials procurement, which carries with it the risk of much higher costs. Furthermore, the loss of biodiversity is an extremely critical issue that could threaten the very existence of society and human life.

The development and operation of housing, office buildings, commercial facilities and resorts that help to conserve biodiversity will create business opportunities and enhance the competitiveness of the Group.

### commitment

It is based on this awareness that we will continue to work with design firms, construction companies, customers, local communities and other stakeholders to carry out responsible materials procurement and conduct ecosystem studies at the time of development for our business activities as well as the office building, commercial facilities and resorts we develop in an effort to mitigate impacts on biodiversity and conserve biodiversity.

[Policies on biodiversity conservation]

1. We will grasp the relation between our operation and biodiversity.
2. We strive to minimize the effect of the operations on biodiversity.
3. We strive for sustainable use of biological resources.

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### Management Structure

The Group has established the Sustainability Committee headed by the President & Representative Director, and to address climate change issues, the Environment/Social Contribution Council, established as a subcommittee, leads relevant management activities across the entire Group.

The Environment/Social Contribution Council, comprised of environmental managers from each group company, manages the results of group-wide efforts on biodiversity issues and shares information based on a shared policy. This ensures biodiversity conservation is addressed throughout all business activities.

### Responding to the impact on biodiversity ~ KPI Targets for Fiscal 2020

Green buildings(roofs,walls,etc)\* Fiscal 2017 Results 100% , Fiscal 2020 Targets 100%

\*Tokyu Land Corporation new large office buildings and commercial facilities.

Tokyu Fudosan Holdings

## Practice and Implementation

### Biodiversity risk assessment ~ Conducting ecosystem studies and conserving biodiversity using greenery in the project

《New project》 The Group actively introduces greenery at its condominium, office and commercial facility buildings, which links with community greenery to form ecological networks considerate of biodiversity. When developing large-scale properties that will impact the local community, we conduct ecosystem studies on the local environment during the planning stage in order to introduce greenery through planters or other means that will provide a habitat for native birds and insects. Such formation of greenery networks helps to conserve the biodiversity of the entire community.

《Existing project》 For example, at the roof terrace garden named Omohara Forest at Tokyu Plaza Omotesando Harajuku, we conduct regular studies on living organisms throughout the year with Regional Environmental Planning, Inc., a specialist in natural environment conservation in order to gain an understanding of the ecosystem created there.



Ecosystem study in progress  
at Tokyu Plaza Omotesando Harajuku



Seven-spot ladybug



Japanese white-eye

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### Participation in the biodiversity certification system ~ Acquired the top AAA rank for JHEP Certification

The FUTAKO TAMAGAWA Rise integrated commercial and residential complex that is a joint venture between Tokyu Land Corporation and Tokyu Corporation acquired the top rank (AAA) for JHEP Certification, which is Ecosystem Conservation Society - Japan's system for certification of biodiversity assessments. We developed the building's roof garden into an open space containing water and greenery as a large-scale roof garden with features such as a vegetable garden and a killifish pond in an aim to create a community that is in harmony with the abundant natural environment in the surroundings.



FUTAKO TAMAGAWA Rise



Killifish pond created  
as part of the roof garden



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## Creation of “Invasive Alien Species Response Manual”

According to the Invasive Alien Species Act (Ministry of the Environment), an invasive alien species is a species of fauna or flora that did not originally reside in Japan and was brought to Japan intentionally or unintentionally by human actions and that may cause damages to local ecosystems. The Group has created a manual that outlines ways to deal with an invasive alien species if it is found in order to protect the community's ecosystem.



(Non-native fauna)  
Nettle caterpillar



(Non-native flora)  
Annual fleabane

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## Pollution and Resources

### Pollution

#### Policy

The Tokyu Fudosan Holdings Group believes that one of its duties is to mitigate the release of pollutants from its business activities. This is why we are working with design firms, construction companies and other stakeholders to prevent the release of pollutants and mitigate pollutants by avoiding the use of materials that are a source of pollutants in order to reduce our impacts on the environment.

Tokyu Land Corporation has established specific measures for the development projects it is involved in based on the format of these projects. For example, development projects involving new build condominiums or detached housing must be in compliance with Formaldehyde Abatement Level 3 and the company has created an in-house manual on soil contamination and asbestos abatement to ensure it takes proper measures.

Tokyu Fudosan Holdings

#### Management Structure

The Group has established the Sustainability Committee headed by the President & Representative Director, and to address the issue of pollutants, the Environment/Social Contribution Council, established as a subcommittee, leads relevant management activities across the entire Group.

The Environment/Social Contribution Council, comprised of environmental managers from each group company, manages the results of efforts on pollutants and shares information based on a common policy. This ensures pollutants are addressed throughout all business activities.

Tokyu Fudosan Holdings

#### Practice and Implementation

##### Setting standards to ensure residential indoor air quality

Tokyu Land Corporation has rigorous performance standards for its newly built condominiums in order to prevent indoor air pollution caused by building materials, some of which are as follows:

- All formaldehyde-emitting building materials are to meet JIS(Japanese Industrial Standards) and F☆☆☆☆ rating under JAS (Japanese Agricultural Standard).
- Aside from formaldehyde, toluene, xylene, ethylbenzene, styrene and other toxic emission from building materials have to be minimal.
- Newly built condominiums are subject to our indoor air quality testing to ensure that indoor chemical substance concentration does not exceed guideline values set forth by the Ministry of Health, Labour and Welfare.

TOKYU LAND CORPORATION

## Handling of hazardous substances

The Group's office buildings, commercial facilities and resorts manage and dispose of hazardous substances in a responsible manner in accordance with relevant laws and regulations. We carry out procedures and dispose of fluorocarbons used in air conditioners and PCBs used in electrical facilities in accordance with the law. These substances are handled with the utmost care to prevent leakage or release. For asbestos and soil pollution, we carry investigative studies in a timely manner and implement proper measures or controls based on the situation.

TOKYU LAND CORPORATION

## Waste

### Policy

The Group recognizes that the mitigation and proper disposal of waste is an important environmental issue because increased business activities will result in increased waste.

We also believe that it is important to endeavor to reduce waste emissions based on an approach incorporating the 3Rs (reduce, reuse, recycle); instead of using vast amounts of resources for our businesses.

The development and construction of long-life housing, office buildings, commercial facilities and resorts, and curbing the use of resources by promoting recycling in business activities, will contribute to reduction of pollution through curbing the use of resources in business activities.

It is based on this awareness that we will continue to work with design firms, construction companies, end customers and other stakeholders to reduce waste through responsible recycling and achieve a recycling-oriented society.

Tokyu Fudosan Holdings

## Management Structure

The Group has established the Sustainability Committee headed by the President & Representative Director, and to address the issue of waste, the Environment/Social Contribution Council, established as a subcommittee, leads relevant management activities across the entire Group.

The Environment/Social Contribution Council, comprised of environmental managers from each group company, manages the setting of group-wide targets, results of efforts, and shares information about waste based on a common policy. This ensures data on the use and storage of waste by each company is understood and that proper management/disposal is carried out in accordance with relevant laws and regulations. This also ensures that we are making efforts to reduce waste through our business activities.

The Group has established the following target for waste.

### Target

We aim to reduce waste emissions per floor area of our business offices and real estate portfolio 25% compared to FY2005 by the FY 2020.

Tokyu Fudosan Holdings



## Practice and Implementation

### Waste reduction through remodeling

The Tokyu Fudosan Holdings Group is working to reduce waste through home renovations. Tokyu Resort Corporation is conducting the sales of vacation homes that have been seismically diagnosed and guaranteed and also ecologically remodeled under its REWORTH program.

Tokyu Fudosan Holdings, TOKYU RESORT CORPORATION

### Data on waste volume

	2005(FY) (base year)	2015(FY)	2016(FY)	2017(FY)	2020(FY) (target year)
VOC emissions (Unit:liters)	-	0	0	0	-
Hazardous waste emissions (Unit:kg)	-	35,807	109,509	3,160	-
Non-recyclable waste emissions (Unit:t)	-	9,360	13,261	15,669	-
Recyclable waste emissions (Unit:t)	-	9,548	11,865	9,900	-
Cost of environmental fines (Unit:yen)	-	0	0	0	-
Waste emissions (intensity) (Unit:kg/m <sup>2</sup> )	13.23	10.06	13.32	13.46	9.92
Achievement rate	-	-24%	+0.7%	+1.7%	-25%

Tokyu Fudosan Holdings

### Ratio of establishments receiving environmental management certification

There are no office that have received environmental management certification such as ISO14001 or EMAS.

Tokyu Fudosan Holdings

## Use of Resources

### Policy

The Group recognizes that the responsible use of resources is an important environmental issue because increased business activities will result in increased use of resources, even though these resources are limited in nature.

We also believe that it is important to endeavor to use resources more effectively based on an approach incorporating the 3Rs (reduce, reuse, recycle); instead of using vast amounts of resources for our businesses.

The development and construction of long-life housing, office buildings, commercial facilities and resorts, and curbing the use of resources by promoting the reuse of resources in business activities, will create business opportunities and enhance the competitiveness of the Group.

It is based on this awareness that we will continue to work with design firms, construction companies and other stakeholders to use resources responsibly and more effectively.

Tokyu Fudosan Holdings

## Management Structure

The Group has established the Sustainability Committee headed by the President & Representative Director, and to address the issue of use of resources, the Environment/Social Contribution Council, established as a subcommittee, leads relevant management activities across the entire Group. The Environment/Social Contribution Council, comprised of environmental managers from each group company, shares information from across the group based on a common policy. This ensures that we are using resources responsibly and efficiently.

Tokyu Fudosan Holdings

## Practice and Implementation

### Forming a reuse cycle for wood resources

The Green Connection Project is an initiative with customers and other stakeholders of the Group to help preserve forests. This initiative has preserved forests in various uses, from condominium purchases to use of offices and resorts, with more than 1,000 hectares saved to date. Wood produced from forests is utilized in various businesses operated by the Group and also provided to customers, which forms a reuse cycle.



Eave materials for  
the Shin Aoyama Tokyu Building



Morinomiya Q's MALL  
BASE playground equipment



Original stationery sold  
at Tokyu Hands

Tokyu Fudosan Holdings, TOKYU HANDS INC., TOKYU LAND SC MANAGEMENT CORPORATION,  
TOKYU LAND CORPORATION

## - CSR

+ Tokyu Fudosan Holdings Group's CSR

> Message from the President

+ Create Value for Customers

Environmental Conservation Initiatives

> Climate Change

> Biodiversity Conservation

> Pollution and Resources

> Water Use

> Supply Chain (Environment)

+ Contributions to Local Communities

+ Employment and Labor Practice Initiatives

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> Elected for SRI Indices

> CSR Reports / Integrated Reports

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> Mid-/Long-Term Management Plan

Value Frontier 2020

> CSR



TOKYU FUDOSAN HOLDINGS GROUP  
Recovery Support Project

Great East Japan Earthquake For smiling faces all over Japan



## Water Use

### Policy

The Tokyu Fudosan Holdings Group recognizes the importance of water conservation in its capacity as a fundamental component of social infrastructure.

Today, water shortages are growing more serious worldwide due to desertification and other factors. Although Japan, where the vast majority of the Group's business offices are located, has yet to experience chronic water shortages, in light of the water resources used to produce the materials we import, so-called "virtual water", the issue of water shortages and water pollution around the world is not irrelevant to our business operations. The development and operation of homes, office buildings, commercial facilities and resorts that excel at water conservation through the use of water saving systems and features will create business opportunities and enhance the competitiveness of the Group.

### Commitments ~Group-wide actions to reduce water usage

It is based on above awareness that we will continue to work with design firms, construction companies, customers, local communities and other stakeholders to carry out responsible management and efficient use of local water resources for our business activities and at the office buildings, commercial facilities, and resorts we own.

Tokyu Fudosan Holdings

### Management Structure

The Group has established the Sustainability Committee headed by the President & CEO, and to address the issue of water resource conservation, the Environment/Social Contribution Council, established as a subcommittee, leads relevant management activities across the entire Group. The Environment/Social Contribution Council, comprised of environmental managers from each group company, sets group-wide fiscal year targets for water use and shares information based on a common policy. This ensures we are able to understand water use volume for each group company, report proper information in accordance with relevant laws and regulations, and work to reduce water use throughout all business activities.

We have set the following target for water use.

#### Unquantified, Process type water reduction targets

Tokyu Land Corporation has established process targets for the development projects it is involved in based on the format of these projects.

#### Quantified water reduction targets

We aim to reduce water use per floor area of our business offices and real estate portfolio 25% compared to FY 2005 by the FY 2020.

For example, development projects involving new build condominiums or detached housing must use water efficient toilets that use less than six liters of water per flush as well as efficient hot water saving kitchen, shower, and bathroom vanity fixtures.

Tokyu Fudosan Holdings, TOKYU LAND CORPORATION

## Practice and Implementation

### Reducing water use with water saving systems and features

The Tokyu Harvest Club Atami Izusan & VIALA was opened as a resort hotel in harmony with nature in 2013. The resort hotel has been making efforts to conserve water resources through the use of water-saving toilets and reducing the use of tap water by actively using mountain groundwater.

At Tokyu Harvest Club Hotel Hakone Koshien and VIALA Hakone Hisui, efforts are also being made to use water effectively through the reuse of underground spring water from the premises.



Tokyu Harvest Club VIALA Hakone Hisui uses underground spring water

Tokyu Fudosan Holdings, Tokyu Resort Service Co., Ltd, TOKYU LAND CORPORATION

### Initiatives Along the Tama River - Environmental Conservation of the River and its Basin

The Tokyu Foundation for Better Environment (Public Interest Incorporated Foundation) works to improve the environment of the Tama River area by conducting surveys of the Tama River and its basin, supporting environmental activities, and disseminating information.

Tokyu Fudosan Holdings

### Business activities in a water shortage area

The Republic of Palau is chronically suffering from a shortage of water. At Palau Pacific Resort, we have our own water supply facilities from the time of opening, we operate the hotel with our own drinking water, and we strive to conserve water resources in the Republic of Palau by thorough water conservation.

TOKYU LAND CORPORATION

### Water usage — Goals and results

	2005 (FY) (base year)	2015 (FY)	2016 (FY)	2017 (FY)	2020 (FY) (target year)
Water use (unit:m <sup>3</sup> )	-	2,811,153	2,650,434	2,547,920	-
Water use intensity (unit:m <sup>3</sup> /m <sup>2</sup> )	1.12	1.32	1.23	1.14	0.84

Tokyu Fudosan Holdings

## - CSR

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TOKYU FUDOSAN HOLDINGS GROUP  
Recovery Support Project

Great East Japan Earthquake For smiling faces all over Japan



## Supply Chain (Environment)

### Policy

In the real estate business involving the Tokyu Fudosan Holdings Group, since development and operation of houses, office buildings, commercial facilities, resort facilities, etc. are going on for a long time and many stakeholders are involved, we recognize that we need to work on the entire supply chain in cooperation with stakeholders (design companies, construction companies, customers etc.). Also, since we utilize large amounts of resources from the environment for our business activities, we will work on the entire supply chain for energy use, water resources conservation, biodiversity conservation, saving resources, reduction of pollutants and waste and appropriate treatment.

#### Supplier policy in the environmental supply chain

–**Energy use**– We will promote the efficient use of energy and the use of renewable energy throughout the entire group and will endeavor to reduce the impact of CO2 / GHG emissions from business activities on climate change.

–**Water Resource**– In order to properly manage water resources according to region / time and efficiently use water resources , it is necessary to work in cooperation with stakeholders. Also, Japan, where many of our business sites are concentrated, has yet to experience chronic water shortage, but in our business activities, we recognize that it is necessary to consider the water resources used for the production of imported materials (so-called “virtual water”).

–**Biodiversity Conservation**– Land development and materials procurement in our business activities are highly dependent on ecosystem services. Because damaging the ecosystem makes it difficult to receive such service, the Group will conduct appropriate material procurement and ecosystem surveys in collaboration with our stakeholders and work on biodiversity conservation.

–**Saving Resources**– The Group recognizes that the responsible use of resources is an important environmental issue because global environmental resources are finite. We also believe that it is important to endeavor to use resources more effectively based on an approach incorporating the 3Rs (reduce, reuse, recycle); instead of using vast amounts of resources for our businesses. The Group will work with stakeholders to use resources responsibly and more effectively.

–**Reduction of Pollutants and Waste and Appropriate Treatment**– The Group recognizes that the reducing emissions of pollutants and waste in business activities is one of the corporate social responsibilities. The Group will work to reduce the impact for the environment in cooperation with design firms and construction companies to reduce pollutants and waste discharges, reduce materials causing the pollutants and waste, and apply appropriate treatment when discharging it we will work.

#### Property portfolio management policy

Tackling the real estate business in consideration of global environmental issues such as energy use, water resource, biodiversity conservation, resource saving, reduction of pollutants and waste and appropriate treatment will create business opportunities and enhance the competitiveness of the Group. It is based on this awareness that we will work with tenants and other stakeholders to help protect the environment across the entire supply chain of our businesses.

## Management Structure

The Group has established the Sustainability Committee headed by the President & CEO, and to address environmental issues within the supply chain, the Environment/Social Contribution Council, established as a subcommittee, leads relevant management activities across the entire Group.

Tokyu Fudosan Holdings

### CO<sub>2</sub>(GHG) quantified reduction targets setting

#### [Short- to medium-term quantified target]

- The Tokyu Fudosan Holdings Group aims to reduce CO<sub>2</sub> emissions per floor area of our business offices 25% compared to FY 2005 by the FY 2020.
- The Tokyu Fudosan Holdings Group aims to reduce CO<sub>2</sub> emissions per floor area of real estate portfolio 25% compared to FY 2005 by the FY 2020.

#### [Long-term quantified target]

- The Tokyu Fudosan Holdings Group aims to reduce CO<sub>2</sub> emissions per floor area of our business offices 30% compared to FY 2005 by FY 2030.
- The Tokyu Fudosan Holdings Group aims to reduce CO<sub>2</sub> emissions per floor area of real estate portfolio 30% compared to FY 2005 by FY 2030.

Tokyu Fudosan Holdings

## Practice and Implementation

### Results on quantified reduction targets for CO<sub>2</sub>(GHG) emissions and energy consumption

	2005 (FY; base year)	2015 (FY)	2016 (FY)	2017 (FY)	2020 (FY; short-term target year)	2030 (FY; long-term target year)
CO <sub>2</sub> (GHG) emissions (Unit:thousand t-CO <sub>2</sub> )	655.4	210.7	233.0	227.5	-	-
Energy consumption (Unit:thousand GJ)	-	4,374.3	4,542.6	4,463.5	-	-
CO <sub>2</sub> (GHG)emissions (intensity) (Unit:kg-CO <sub>2</sub> /m <sup>2</sup> )	133	98.4	106.7	101.0	100	93
Achievement rate	-	-26%	-20%	-24%	-25%	-30%
Energy consumption (intensity) (Unit:thousand GJ/m <sup>2</sup> )	-	2,043	2,081	1,983	-	-

Tokyu Fudosan Holdings

## Results on goals of acquisition of environmental performance certification, including LEED and CASBEE

《Quantified target》 FY2020 : 100%

※Tokyu Land Corporation new large office building and commercial facilities.

《Results》 The Group works with stakeholders to obtain environmental performance certification to improve the environmental practices of its entire supply chain. The achievement ratio to the acquisition target in FY 2017 was 100%.

In August 2015, Futako Tamagawa Rise Tower Office (Setagaya City) acquired LEED for New Construction Gold certification through a partnership involving Tokyu Corporation, Tokyu Land Corporation and Setagaya City. In November 2015, the entire Futako Tamagawa Rise development became the first location in the world to receive LEED for Neighborhood Development Gold certification. This neighborhood development project received high marks not only for its verdant surrounding environment next to the Tama River, but also for its excellent access to public transportation, high density, compact development, and its initiatives for biodiversity and the more efficient use of energy.

In addition, we are also actively working to acquire CASBEE and DBJ Green Building certification for our residential, office and commercial facility developments as part of our efforts to display environmental performance.

\*LEED

A green building certification program administered by the U.S. Green Building Council.



Futako Tamagawa Rise

TOKYU LAND CORPORATION

## Reducing water use with water saving systems and features

The Tokyu Harvest Club Atami Izusan & VIALA was opened as a resort hotel in harmony with nature in 2013. The resort hotel has been making efforts to conserve water resources through the use of water-saving toilets and reducing the use of tap water by actively using mountain groundwater.

At Tokyu Harvest Club Hotel Hakone Koshien and VIALA Hakone Hisui, efforts are also being made to use water effectively through the reuse of underground spring water from the premises.



Tokyu Harvest Club VIALA Hakone Hisui uses underground spring water

Tokyu Fudosan Holdings, Tokyu Resort Service Co., Ltd, TOKYU LAND CORPORATION

### Reduction of water usage by using rainwater

The office building "Kasumigaseki Tokyu Building" developed by Tokyu Land Corporation has introduced facilities to utilize rainwater falling on the roof. The collected rainwater is used for miscellaneous water such as toilet wash water to save water usage. Water retention pavement for suppressing the rise in road surface temperature is laid on a part of the outer structure by thermal evaporation of water vapor, and it is expected that the heat island phenomenon will be mitigated.

TOKYU LAND CORPORATION

### Operating energy management systems together with tenants

Tokyu Land Corporation actively employs energy saving equipment and is constantly working to improve the management and operation of equipment that consume large amounts of energy, such as air conditioners.

At Abeno Q's Mall in the Abeno Ward of Osaka, Tokyu Land Corporation together with business owners and tenants jointly operates the Motto Save system with Osaka Gas Co., Ltd. that makes it possible to mitigate CO<sub>2</sub> emissions. This system aggregates energy usage data for the common space and private space of the mall on a cloud so that business owners and tenants can check, analyze and share findings about the energy usage data of each tenant.

We will continue to work on energy saving measures with the goal of realizing a low-carbon society in the future.

TOKYU LAND SC MANAGEMENT CORPORATION, TOKYU LAND CORPORATION

### Visualizing energy usage with smart meters

Tokyu Land Corporation installs smart meters for the condominium units it sells to encourage the visualization of energy usage. At Branz Sapporo Nakajima Koen, smart meters come standard that automatically read electricity usage data in 30-minute increments using telecommunications.



Smart meter (sample image)

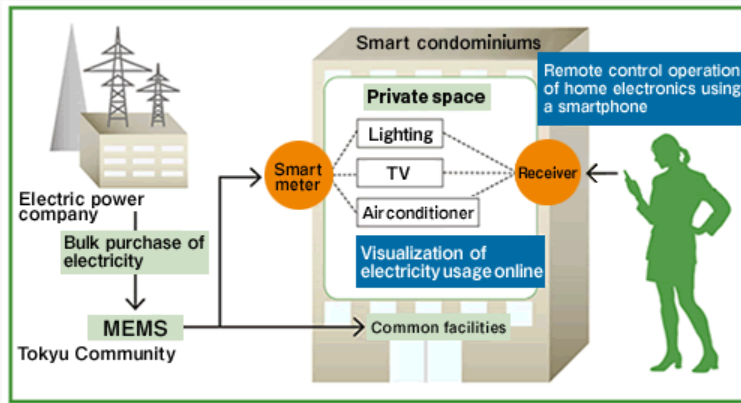
TOKYU LAND CORPORATION

### Managing energy usage of condominiums

Tokyu Community Corporation has been selected to be an MEMS aggregator as an energy management service provider by the Ministry of Economy, Trade and Industry. It is adopting MEMS (condominium energy management systems) and bulk high-voltage electricity receiving services (a type of energy-saving system) in the condominiums that it manages.

These systems were introduced for approximately 786 housing units during FY2014 as part of efforts to reduce energy use at existing condominiums.





Conceptual diagram of bulk electricity purchases and MEMS

Tokyu Fudosan Holdings

### Hosting of environmental seminars

Tokyu Homes Corporation (Newly built housing division), recognizing the importance of working with suppliers to achieve the sustainable use of forest resources, holds seminars respecting the forest environment every year for construction materials manufacturers. Tokyu Homes Corporation will continue to raise awareness about the environment across the supply chain in an effort to realize more sustainable procurement of resources in the future.

TOKYU HOMES CORPORATION