

# Responsibilities to the Earth's Environment

## Environmental Management

### Nippon Express Group Environmental Charter Policies and Targets

The Nippon Express Group focuses particularly on the Nippon Express Group Charter of Conduct. We have the Nippon Express Group Environmental Charter in place for the whole Group to fulfill our responsibilities to the Earth's environment.

#### Basic Philosophy

The Nippon Express Group shall be mindful of its responsibilities as a corporate group to society and the general public, and shall proactively contribute to environmental conservation as a "good corporate citizen" by practicing environmental management.

#### Code of Conduct

Recognizing that preservation of the Earth's environment is a challenge facing all mankind as well as an indispensable requirement for our Group's existence and activities, we shall independently and proactively strive to fight global warming, preserve biodiversity and construct a recycling-based society.

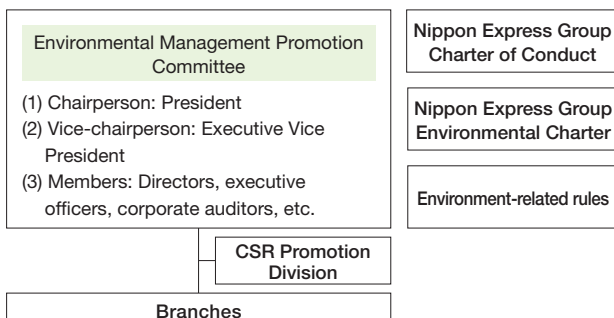
1. We will promote green logistics.
2. We will work to more efficiently use natural resources and energy.
3. We will adhere to environmental laws and ordinances.
4. We will train environmental personnel.
5. We will promote an environmental social action programme.
6. We will report information about our environmental initiatives to society.
7. We will continually improve upon our environmental management system.

To read the Nippon Express Group Environmental Charter in detail, please see our website.  
<https://www.nipponexpress.com/about/csr/charter/>

### Promotion of Environmental Management Organizations and Systems

The Group is working to implement environmental management in accordance with the Nippon Express Group Environmental Charter. We have established the Environmental Management Promotion Committee, which is chaired by the president, to create a cross-organizational framework for promoting environmental management throughout the Group. We also work on risk management.

Organizational structure for promoting environmental management



### Environmental Management System Organizations and Systems

To further advance activities for environmental conservation, the Nippon Express Group's offices are working to obtain ISO 14001 certification, which is the international standard for environmental management systems, and Green Management Certification.

#### ● Obtaining Green Management Certifications

Numerous offices throughout the Nippon Express Group have been obtaining Green Management Certification, which is granted to companies that engage in business with a minimal environmental impact. As of the end of March 2019, 91 Nippon Express trucking offices and eight warehousing offices have received this certification. Among Group companies, five trucking offices have been granted Green Management Certification.

#### ● Increasing ISO 14001-certified Business Locations

Since the Air Freight Business Branch received ISO 14001 certification for its operations in the Baraki area (Ichikawa, Chiba Prefecture) on June 24, 1998, 21 Nippon Express Group business locations in Japan and overseas have been similarly certified as of March 2019.

\* For the names of the locations, please see our website.

### Long-term Targets for 2030 Policies and Targets

We have long-term targets for 2030 in place and are committed to environmental management. We will continue strongly pursuing environmental management by focusing on the prevention of global warming and the development of a recycling-based society. In this way, we will support the development of a sustainable society.

#### Long-term environmental management targets for 2030

##### ● Reduce CO<sub>2</sub> emissions by 30% from their FY2013 levels no later than FY2030

1. Numerical targets for total emissions  
 FY2013 standard value: 490,513 tons  
 FY2030 target value: 343,359 tons (30% decrease)
2. Numerical targets for output units per million yen in sales  
 FY2013 standard value: 469.72 kg/million yen  
 FY2030 target value: 328.80 kg/million yen (30% decrease)

##### ● Reduce industrial waste generation vis-à-vis sales each year by 1% from the previous year (until FY2030).

FY2016 standard value: 21.96 kg/million yen  
 FY2030 target value: 19.08 kg/million yen

\* See page 17 for the results from FY2018.

## Reduce CO<sub>2</sub> Emissions by Reinforcing Controls on Climate Change

### Our View on Climate Change

Policies and Targets

The Nippon Express Group recognizes climate change as a social issue of global scale.

Abnormal weather resulting from climate change may pose obstacles to logistics infrastructure by causing the suspension of flight, shipping and railway services and the closure of highways. Worse, it may lead to an increase in our operating costs. Abnormal weather may also bring about decreases in production and shipment quantities for our clients, possibly leading to decreases in the amount of cargo we handle and our profits.

By securing two or more modes of transport, the Nippon Express Group will enhance the resilience of its operations against climate change. We will also work in cooperation with clients to make “modal shifts” from truck-centered transport to ships, railroads and other modes of transport with a low impact on the environment.

### Using the NEES System to Visualize Energy Use

Organizations and Systems

Nippon Express has used its proprietary Nittsu Ecology & Economy System (NEES) to visualize energy since 2011. This system keeps us accurately updated on the consumption of diesel oil, electricity, gas and other forms of energy at approximately 2,000 business locations in Japan. NEES has enabled each of our business locations to run an environmental management system and take steps to reduce energy use. As a consequence of our efforts to save electricity and other forms of energy, the data collected have proven useful in disclosing information outside the Company and formulating new energy conservation targets.

### Accurately Controlling Fluorocarbons

Organizations and Systems

Fluorocarbons not only harm the ozone layer but also have an extremely high greenhouse effect. Nippon Express strives to preserve the ozone layer and prevent global warming by reducing CO<sub>2</sub> emissions and accurately controlling fluorocarbons. There were no major leaks in 2018.

#### • ECO-FREONTIA®, Management System Fluorocarbons

The Act on Rational Use and Proper Management of Fluorocarbons (“Fluorocarbons Management Act”) came into force in April 2015. We comply with the Act by operating ECO-FREONTIA®, our proprietary system for controlling fluorocarbons, in an effort to prevent the leakage of fluorocarbons. This system prevents the omission of inspections and calculates the volumes of leaked fluorocarbons from the inspection data by creating a database of information about the professional-use freezers, refrigerators and air conditioners (Class I Specified Products) that are regulated under the Fluorocarbons Management Act and by sending out e-mail alerts whenever the relevant equipment undergoes a simple or periodic inspection.

### Environmentally Friendly (Low-emission) Vehicles

Activities and Achievements

Nippon Express actively introduces environmentally friendly vehicles that mainly include low-emission diesel trucks such as those complying with the post-new long-term regulations, as well as CNG, hybrid and LPG trucks. As of March 31, 2019, the Nippon Express Group has a domestic fleet of 9,650 vehicles in total.

#### • Compressed Natural Gas (CNG) Trucks

The same natural gas as that for use in city gas is compressed under high pressure to fuel CNG trucks. This type of vehicle emits 20% to 30% less CO<sub>2</sub> than gasoline-fueled cars. Moreover, CNG trucks emit far fewer NOx<sup>\*1</sup> than diesel cars and emit no PM<sup>\*2</sup>.

\*1 NOx: Nitrogen oxides. \*2 PM: Particulate matter.

#### • Bi-fuel CNG Trucks

Mainly used for air service deliveries and the transport of valuables, these modified vehicles run on both CNG and regular gasoline. Once the CNG has been used up, the motor can be manually switched to gasoline.

#### • Hybrid Trucks

Hybrids combine different forms of motive force, such as ordinary engines and electric motors. The energy created by the engine or braking is converted to electricity and stored to provide an auxiliary driving force when starting, accelerating or climbing.

#### • LPG Trucks

Equipped with engines fueled with liquefied petroleum gas, LPG vehicles are commonly used as taxis. LPG trucks emit far fewer NOx than diesel cars and emit no PM.



### Increasing the Number of Environmentally Friendly Facilities

Activities and Achievements

The Nippon Express Group is increasing the number of environmentally friendly facilities. In fiscal 2018, we generated 6,784,343.7 kWh from recyclable energy (6,784,333.86 kWh from solar power and 9.84 kWh from wind power). In addition, the Nippon Express Group has developed standards for the installation of equipment that are applicable to the construction of logistics facilities and offices. The standards require our equipment to be more effective in utilizing recyclable energy, and reducing greenhouse gases by promoting LED use, reflect our considerations for biodiversity, enhance the safety and health of staff members and people in the neighboring communities and contribute to the continuation of our business operations.

#### • Environmental Considerations in the Osaka Branch Office Building

The Osaka Branch office building was completed in January 2019 based on the concept of a building that is resilient against disasters and designed in keeping with the times. It is a state-of-the-art structure with cutting-edge, eco-friendly equipment, including private electric generators, a photovoltaic facility and a building energy management system (BEMS).



Osaka Branch office Photo credits: PRIZE Co., Ltd

## Provide Logistics Technologies and Services with Little Environmental Impact

### Promotion of Modal Shift

Activities and Achievements

The Nippon Express Group facilitates cooperation between customers and logistics companies to make numerous modal shifts, switching from truck-centered transport to transport using railways and ships. Modal shifts to organically link different modes of transport such as trucks, trains, ships and aircraft reduce the environmental impact and make transport more efficient, and they also provide alternatives within business continuity plans (BCP).

#### ● Modal Shift to Rail Transport

The larger the cargo volume and the longer the distance it is hauled, the more efficient and reliable railway transport is found to be in comparison to truck transport. Being eco-friendly and highly energy-efficient, rail transport is effective in reducing CO<sub>2</sub> emissions. By working with customers to make modal shifts to secure reliable railway transport throughout a wide range of cargo from bulk to small lots, we address driver shortages and social challenges such as the reduction of environmental impact.

We also develop 12-foot hybrid containers that can be loaded onto both trains and coastal vessels, and we offer a transport service with the use of railroads and ships to control the impact on the environment.

#### ● Modal Shift to Domestic Marine Transport

Maritime transport is a mode of low-cost, long-haul transport for large cargo volumes, and it has a low impact on the environment.

In 1964, the Nippon Express Group put Japan's first container vessel, *Dai-ichi Tennichi Maru*, into service between Tokyo and Muroran, followed by *Daini Tennichi Maru* between Osaka and Muroran, thereby launching integrated land and sea transport services. The Group currently operates seven large state-of-the-art vessels, including *Himawari 8* and *Himawari 9*, which were launched in September and December 2017 respectively, along two scheduled routes that serve eight ports around Japan.

Among our additional efforts to reduce CO<sub>2</sub> emissions from fuel consumption are the selection of optimal routes utilizing our optimal navigation plan support system and complying with on-time port departures. For cargo arriving at and departing from inland locations far from ports, we make various efforts, including cooperation with railway companies in integrated transport.

### Encouraging Eco-driving

Activities and Achievements

The Nippon Express Group's business of delivering customers' goods all around the world necessarily entails energy consumption and CO<sub>2</sub> emissions due to the use of gasoline and other fuels. For this reason, we encourage eco-driving\* in our truck transport operations as one approach for mitigating our environmental impact.

\*Eco-driving: Driving techniques that are aimed at reducing CO<sub>2</sub> emissions and fuel consumption and ensuring greater safety by boosting fuel efficiency

#### ● Safe Eco-driving Education

We have incorporated safe eco-driving, which is characterized by the constant practice of safety, ecology and economy, into the curricula for all types of driver training to develop professional drivers. Driver instructors play a central role in providing regular education and guidance through these training programs, and we are striving to ensure that all Nippon Express drivers engage in safe eco-driving.

In particular, eco-driving training uses fuel consumption gauges and, to heighten employee awareness of the benefits of eco-driving (in terms of safety, the environment and cost), Nippon Express has been certified as an eco-driving training organization by the Foundation for Promoting Personal Mobility and Ecological Transportation.

#### ● Digital Tachometers

Since fiscal 2014, Nippon Express has been utilizing an Operation Support System that incorporates vehicle operation management, operational activities such as loading, and attendance management. The Operation Support System is a mechanism where digital tachometers are linked with work terminals (smartphones) to allow various types of data to be managed centrally in a cloud environment (Nippon Express Cloud). We are also pairing IoT technology with our unique education and training to eliminate traffic accidents and cut CO<sub>2</sub> emissions through greater fuel efficiency.

#### Rate of introduction of digital tachometers




Nippon Express Co., Ltd.	100%
Branch operating companies	63.9% (as of the end of September 2018)

#### Environmental performance of Nippon Express' coastal vessels

- *Himawari 5*, *Himawari 6*: These vessels use engines with automatic control that adjusts fuel injection to speed.
- *Himawari 7*, *Himawari 8*, *Himawari 9*: These are energy-saving vessels equipped with high-efficiency, variable-pitch propellers, high-performance reaction rudders with valves, low-friction paint, electronically-controlled main engines, and inverter-driven cooling seawater pumps.



#### CO<sub>2</sub> emissions intensity by transport mode (g-CO<sub>2</sub>/ton-kilometer)

- Truck  = **232**
- Rail  = **20**
- Ship  = **38**

\* Source: "CO<sub>2</sub> emissions in the transportation sector" from the Ministry of Land, Infrastructure, Transport and Tourism website  
[https://www.mlit.go.jp/sogoseisaku/environment/sosei\\_environment\\_tk\\_000007.html](https://www.mlit.go.jp/sogoseisaku/environment/sosei_environment_tk_000007.html)

## Strengthen Adaptive Ability and Resilience in the Face of Climate Change

### Social Responsibility as a Designated Public Institution Organizations and Systems

As a truck transportation business operator, Nippon Express is a designated public institution under the Disaster Countermeasures Basic Act, the Act Concerning the Measures for Protection of the People in Armed Attack Situations, etc. (the Civil Protection Act), and the Act on Special Measures for Pandemic Influenza and New Infectious Diseases Preparedness and Response.

Nippon Express has developed its crisis management and various other systems so that it is capable of continuing its business operations while safeguarding the lives and safety of employees and their families even during an emergency. Nippon Express fulfills its social responsibility as a designated public institution by transporting emergency supplies amongst other responses at the request of the national or prefectural governments.

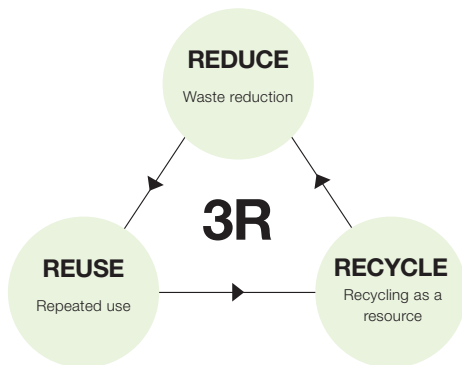


Truck transporting relief supplies during the Great East Japan Earthquake

## Promote Resources Recycling

### Perspective on Resources Recycling Policies and Targets

The Nippon Express Group has been reducing the waste generated through its business activities and advancing the 3Rs (reduce, reuse, and recycle) with the objective of realizing a recycling-based society. In particular, the Nippon Express Group focuses its efforts on reducing the waste from its business locations as well as thoroughly sorting paper and other waste for easy recycling.



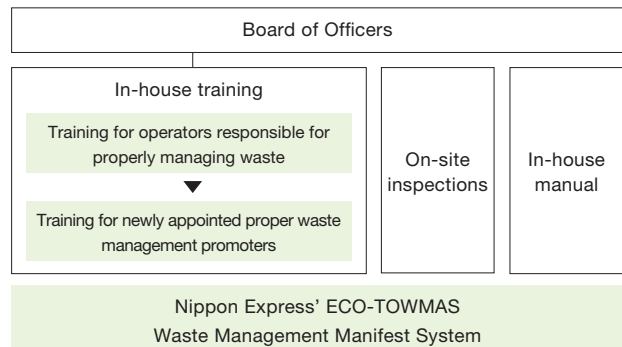
### Reducing and Properly Managing Waste Organizations and Systems

#### ● Waste Management System

To properly manage waste, Nippon Express shares information regarding waste with the Board of Officers and disseminates instructions. In addition to providing in-house training and conducting work site inspections, Nippon Express uses a system of managing waste manifests to confirm that the waste generated by the Company is being disposed of properly.

In October 2002, because of a violation of the Waste Disposal Act, Nippon Express received a severe penalty, with its designation as a wide-area recycling industrial waste processor revoked by the Ministry of the Environment. Accordingly, Nippon Express suffered significant damage, such as being required to withdraw from those operations and being suspended from entering competitive government bidding processes. To prevent such errors from recurring in the future, Nippon Express has strengthened its structures and is committed to properly managing the waste generated by the Company. There were no major leaks in 2018.

Proper management of waste generated by the company



#### ● Release Amounts Subject to Notification Under the PRTR Act (Nippon Express, FY2018)

Although none of Nippon Express' business locations are required to submit notifications under the Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof (the PRTR Act)", the following shows the locations where PRTR-listed chemical substances are handled.

Category of business location	Number of business locations	Total amount of substances handled (kg / year)	Main substance	Main use
Targeted business category but amount handled is below the threshold subject to notification	6	141	Fenitrothion	Insecticide and anti-insect measures inside warehouse
Non-targeted business category but location handles PRTR-listed substances	12	12,035	Methyl bromide	Fumigation accompanied by import customs clearance process

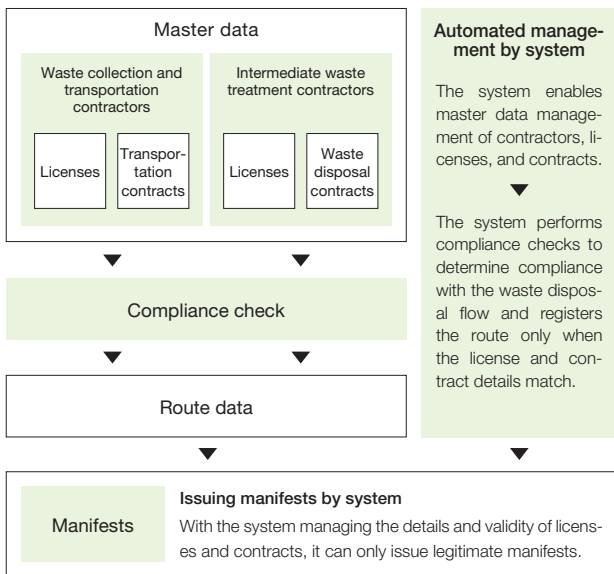
● **ECO-TOWMAS® Waste Management Manifest System**

Since October 2014, Nippon Express has been employing the ECO-TOWMAS® Waste Management Manifest system to properly manage industrial waste generated by the Company.

When Nippon Express' business locations dispose of industrial waste, ECO-TOWMAS® automatically performs compliance checks to determine whether the disposal is being properly outsourced by comparing the information entered at the locations with the license and contract details of the company to whom disposal is to be entrusted. If ECO-TOWMAS® determines that there is a lack of compliance, the system will not issue manifests.

ECO-TOWMAS® also supports electronic manifests. After the Company underwent the transition to electronic manifests, the use rate of electronic manifest routes reached 100% and the rate of issuing electronic manifests was 92.9% as of March 2019.

Waste management manifest system



**Environmentally Friendly Products**

Activities and Achievements

● **Actively Using Reusable Materials**

Nippon Express makes active use of reusable materials (packing materials that can be used repeatedly) through its moving service, thereby achieving environmentally friendly removals operations. Using its own original reusable dish trunks, Nippon Express can transport dishes by simply placing dishes inside the trunks, which are filled with cushions. This results in no newspaper or cardboard boxes being used, reducing waste when moving. Furthermore, the reusable dish trunks enable rapid moving and have a good reputation among customers.



Reusable protection material for moving operations

**Protect Terrestrial and Marine Ecosystems**

**Preventing Alien Species from Crossing**

Organizations and Systems

**Their Habitat Boundaries**

Nippon Express makes the utmost efforts to prevent the unexpected transportation of alien species that threaten ecosystems, human lives, and agriculture, forestry and fisheries.

Each Nippon Express business location takes extra care to keep out invasive alien species such as fire ants based on the information provided by the Ministry of the Environment, the Ministry of Land, Infrastructure, Transport and Tourism, and local governments. However, if alien species are detected, Nippon Express cooperates with the relevant locations and shipping customers in immediately exterminating the alien species and handles the fumigation of the containers.

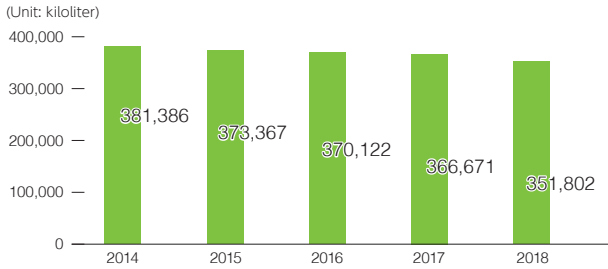
Following a case where invasive alien species were found in import cargo at its Narita Airport Branch, Nippon Express established packing/unpacking procedures dedicated to shippers and regions of concern. Nippon Express created measures for immediately suspending processes and exterminating alien species that are found during work processes.



Extermination example

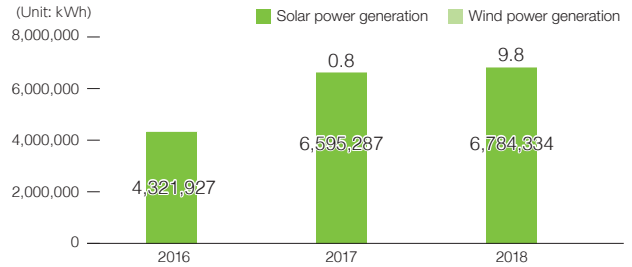
## Environmental Data

### Energy consumption in Nippon Express Group (crude oil equivalent)



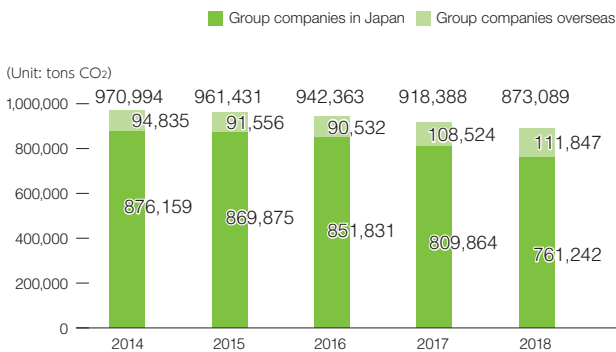
\*1 The data shown here aggregate the energy consumption by Nippon Express and its consolidated companies in Japan and overseas (equivalent to Scopes 1 and 2).  
 \*2 For natural gas, 13A city gas (heat value of 45 GJ/thousand cubic meters) applies.

### Power generated from renewable energy resources (Group companies in Japan)

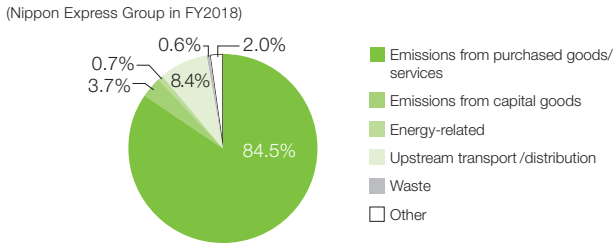


\*3 Renewable power generation, electricity used in-house and electricity sold are not included in the Nippon Express Group's energy use.

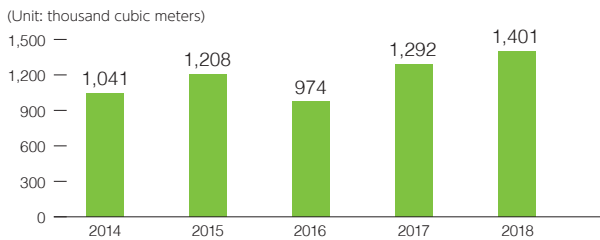
### CO<sub>2</sub> emissions (Scope 1, 2)



### Component ratio for Scope 3 (Nippon Express Group in FY2018)

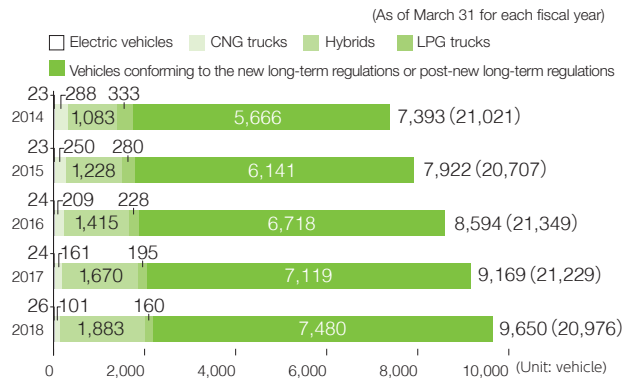


### Water consumption



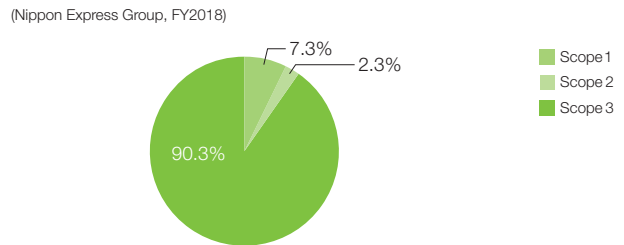
\*5 The figures for 2018 aggregate water consumption by Nippon Express Group companies in Japan. The figures for 2014 – 2017 represent water consumption by Nippon Express alone.

### Number of eco-friendly vehicles owned (Group companies in Japan)

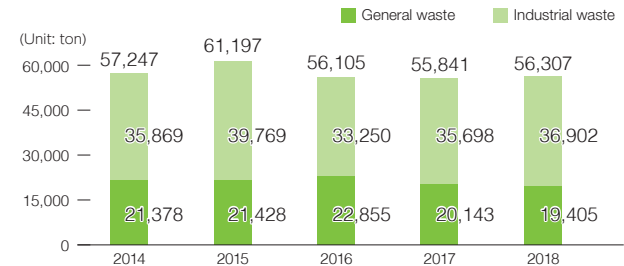


\*4 The parenthesized figure represents the total number of vehicles owned.

### GHG emissions across the supply chain (Nippon Express Group, FY2018)



### Waste volume (Group companies in Japan)

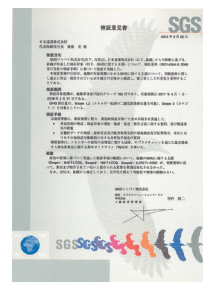


### • Third-party verification of CO<sub>2</sub> emissions data

Nippon Express commissioned SGS Japan Inc. to conduct third-party verification of CO<sub>2</sub> emissions data for FY2017 based on ISO 14064-3:2006.

We are planning to have third-party verification also on CO<sub>2</sub> emissions data for FY2018.

By receiving verification by a third-party, we will ensure accuracy and reliability and will continue to work on further reducing CO<sub>2</sub> emissions.



Scope of verification:  
 Scopes 1 and 2: CO<sub>2</sub> emissions from fossil fuel use in Japan;  
 Scope 3: (Category 1: Nippon Express Co., Ltd. only)

Third-party verification