

What is ECO AIRPORT



Narita International Airport will continue to promote environmental initiatives with a view to the future.



As an Eco-Airport, we will accelerate our environmental initiatives

Since its opening in 1978, Narita International Airport has served as the gateway of Japan in cooperation with many people. In these 40 years, domestic and international aviation demand has changed drastically in terms of quality and quantity.

As the airport administrator, Narita International Airport Corporation (NAA) pursues the world's highest level of safety and operational stability, striving for high quality service to customers, strengthening of the global transport networks, and environmental and regional symbiosis measures, aiming to be the airport of the world's highest standards.

To continue developing as the gateway to Japan amidst global competition between airports, which is expected to become even fiercer in the future, "functionality enhancement at Narita Airport," including the extension and construction of runways, is the top priority of the NAA Group. To this end, we will promote improvement of airport functionality while deepening a relationship with the local communities for coexistence and co-prosperity. The global aviation industry is increasingly required to address environmental issues in a more global fashion. Responding quickly and flexibly to changes in our environment, Narita Airport will work closely with our various stakeholders to accelerate our efforts as an eco-airport.

Working airport-wide on environmental measures

The operation of Narita International Airport is supported by many parties, including airlines, cargo operators, tenants, airport-related business entities, and government agencies.

According to Eco-Airport Vision 2030 formulated from a long-term perspective and the Eco-Airport Master Plan (FY 2016–2020) as its implementation plan, we are promoting the reduction of environmental impact throughout the airport.

What is ECO AIRPORT

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Promoting Initiatives to Achieve "Eco-Airport Vision 2030"

In collaboration with stakeholders, Narita Airport will pursue the development of a sustainable society by taking measures to reduce the environmental impact of airport operations on local communities and addressing global-scale environmental issues.

Eco-Airport Vision 2030

Pursuing Sustainable Development by the Community and the Airport

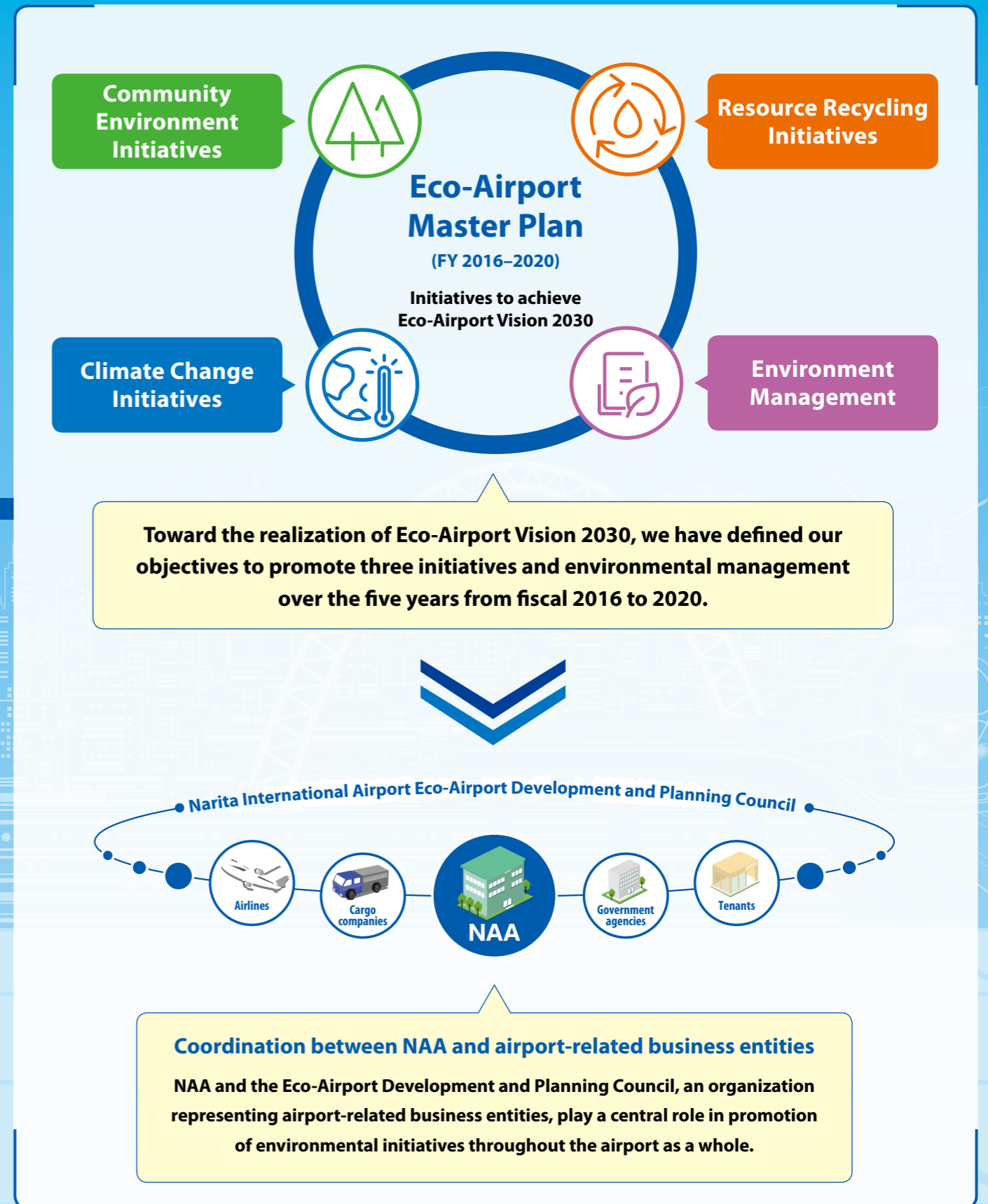
Addressing Global-Scale Environmental Issues

Promoting an Eco-Airport in Collaboration with Stakeholders

We aim to reduce airport carbon dioxide (CO₂) emissions per flight by 30% of the fiscal 2015 level by fiscal 2030



Our stakeholders refer to passengers, local residents, local government, airport-related business entities and their employees, and all other persons associated with the airport.



Eco-Airport Digest Map

Principal Environmental Initiatives at a Glance



In Passenger Terminals

1 General Waste Sorting

Waste is sorted for recycling into six categories in passenger terminal lobbies, and 10 categories in office areas.



3 Kitchen Wastewater Treatment Facilities and Grey Water Production Facilities

Waste water from restaurants in terminal buildings is treated and reused as flushing water in airport toilets.

2 Solar Power Panels



Solar power panels at passenger terminal buildings and the NAA Building generate electricity for lighting in those buildings.

On Taxiways

4 LED Lighting



Highly energy-efficient LED lights have been installed for taxiways and some parts of lighting in passenger terminal buildings.



Around the Airport

Greenport Eco-Agripark



On the noise mitigation land, we maintain a hands-on nature conservation park with a rich diversity of natural life.



Environment Monitoring

To understand the environmental impacts from airport operations, we take year-round and short-term noise, air quality, and water quality measurements and disclose the results on our website.



Noise Mitigation Embankments



Mitigation embankments and wooded buffer zones have been constructed to reduce aircraft noise.

On Aprons

Construction Waste Management

We reduce construction waste for apron pavement repair work through the original NAA technology called "Bonded Overlay Method."



GPU (Ground Power Units)



Quiet, zero-emission GPUs have been installed at all fixed stands of passenger terminals to provide electric power and air conditioning to parked aircraft.



5 Fast Chargers for Electric Cars



For the convenience of airport users driving electric vehicles (EVs), fast chargers are provided in parking lots P1 and P2.

6 Hydrogen Station



This station supports drivers of fuel cell vehicles, which are becoming popular in recent years.

Introduction of Low-Emission Vehicles

We promote the introduction of low-emission vehicles such as EVs as well as fuel-efficient and low-exhaust cars.

For Vehicles



For Aircraft

7 Noise Reduction Hangar (NRH)

A hangar-type noise reduction facility drastically decreases sound levels of aircraft engine testing.



Landing Charge System for International Flights Based on Narita Aircraft Noise Index



To encourage low-noise aircraft, we have introduced a noise-related landing charge system. At the same time, they also contribute to the reduction of CO₂ emissions.

At Airport Facilities

8 Recycling Plant



Asphalt, concrete, and other construction waste is crushed and recycled into paving material.



9 Rainwater Treatment Facility

Rainwater from a holding pond is treated and reused for cooling water in the Central Heating and Cooling Plant and for flushing water in the passenger terminal toilets.



Eco-Airport Master Plan (FY 2016–2020) Interim Review (Results of FY 2018)

Under our Eco-Airport Master Plan (FY 2016–2020), we are promoting various initiatives and environment management activities scheduled to complete in FY 2020. This Special Feature reports the results of FY 2018, which is an intermediate year of the Master Plan, using FY 2015 as the benchmark year.

Conserve Air Quality

Target

Reduce air pollution (NOx) per flight by 5% compared to FY 2015

REDUCTION

4.8%

FY 2015
16.6
kg/flight

FY 2018
15.8
kg/flight

More than 90% of NOx from the airport is emitted by aircraft operations. The number of large aircraft with higher emissions decreased while the number of medium-sized and small aircraft with relatively lower emissions increased. As a result, NOx emissions per flight decreased.

We will continue to promote the introduction of lower-emission aircraft in order to achieve the target.

Recycle Resources

Target

Reduce general waste incinerated per airport user by 5% compared to FY 2015

REDUCTION

8.9%

FY 2015
0.45
kg/airport user

FY 2018
0.41
kg/airport user

Through the members of the Eco-Airport Development and Planning Council, we raise the awareness of airport staff regarding the 3Rs (Reduce, Reuse, and Recycle) and proper disposal of general waste while posting notices on waste sorting for airport users. Consequently, the amount of general waste disposal per airport user has decreased.

For further progress, we will continue to promote awareness among airport users including staff.

Recycle Water Resources

Target

Reduce potable water usage per airport user by 3% compared to FY 2015

REDUCTION

5.2%

FY 2015
30.9
L/airport user

FY 2018
29.3
L/airport user

To reduce water consumption we have introduced water-saving equipment during the renewal of restrooms in the terminals. Moreover, notices have been posted in the restrooms to raise the awareness of passengers and staff.

Our target has been achieved in FY 2018. However, we will maintain the reduction rate until FY 2020 with resource recycling initiatives such as the use of grey water.

Reduce CO₂ Emissions from the Airport

Target

Reduce airport CO₂ emissions per flight by 7% compared to FY 2015

REDUCTION

5.6%

FY 2015
4.30
tCO₂/flight

FY 2018
4.06
tCO₂/flight

Over 70% of CO₂ emissions of the airport come from aircraft operations while 20% are from the energy consumption of airport facility.

The annual number of flights increased by 9.2% compared with FY 2015. However, the number of large aircraft with higher emissions decreased, and the reduction in CO₂ emissions from airport facilities contributed to lower CO₂ emissions per flight.

In addition to encouraging the introduction of lower-emission aircraft and use of GPUs, we will promote the introduction of lower-emission vehicles and energy-saving efforts at airport facilities.

Reduce Energy Consumption

Target

Reduce energy consumption by NAA-managed airport facilities per flight by 5% compared to FY 2015

REDUCTION

8.6%

FY 2015
15.1
GJ/flight

FY 2018
13.8
GJ/flight

Electricity accounts for 70% and city gas for the rest of total energy usage at airport facilities. Although the number of flights increased, the total energy consumption did not increase much. As a result, the amount of energy used per flight declined.

To further achieve our target, we will introduce energy-saving equipment at newly-built facilities and replacements at existing ones, in addition to implementing more efficient energy management.

Conduct Environmental Management Using Environmental Certification Programs

Target

Conduct environmental management using environmental certification programs

For the purpose of more efficient management and incorporating external evaluation methods, since 2018, we have been participating in the *Airport Carbon Accreditation* program, its scheme specializing in efforts to reduce CO₂ emissions at airports. After accredited Level 2 in January 2018, Narita International Airport achieved Level 3 within a year, in November 2018, as the first among Japanese airports. Narita will remain committed to participating in the *Airport Carbon Accreditation* program and continue to strive for further reductions in carbon emissions jointly with airport stakeholders.

◆◆ Review of First Half of Eco-Airport Master Plan (FY 2016–2020) ◆◆

The Eco-Airport Master Plan (FY 2016–2020) was formulated to achieve Eco-Airport Vision 2030. We have verified progress upon reaching the first half of the plan's implementation period. Progress toward targets consisting of specific quantitative and qualitative targets went largely as planned. However, extreme weather such as heavy rains and record heat presumably caused by climate change may bring about unpredictable changes to the natural environment. Thus, we cannot be assured of achieving our targets in fiscal 2020.

It will also be necessary to respond flexibly to changes in the social environment of the airport, for example by taking measures against plastic waste treatment. In the second half of the plan's period, we will strive to implement our initiatives to reduce environmental impact.

Mitsuyo Kawashima
Manager
Eco-Airport Development and Planning
Community and Environmental Affairs Department
Narita International Airport Corporation



Narita Airport Eco-Kids Club 15th Year Participants during First Tour

Eco-Kids Club

Special Feature 2

See, Hear, and Experience!

15th year

Narita Airport Eco-Kids Club

The Narita Airport Eco-Kids Club marked 15 years since its establishment.

Since the Club was launched in 2005, the total number of participants has reached 800. Special Feature 2 introduces reports from participants of the 14th Year and the Eco-Tour of the 15th Year, which was held this summer.



About the Club

The Narita Airport Eco-Kids Club was established to introduce the environmental initiatives implemented by Narita International Airport to children, who will lead the next generation.

As a part of environmental management under the Eco-Airport Master Plan, we give them the opportunity to realize the importance of the environment while discovering the nature around the airport.

Participants recruited from among 5th and 6th graders nationwide attend eco-tours supported by airport-related businesses and experts. The 800 eco-kids that have participated so far have learned various things through visual and auditory observation at work sites and by listening to the people working there. Narita International Airport will continue such activities to help further understanding of the environment.

- ◆ Participants receive a learning material, "Narita Airport Eco-Kids Club Passports." Questions of the Club members are answered throughout the year.
- ◆ Eco-tours are conducted three times a year with programs that have different themes.
- ◆ Children are divided into teams, and members of the same team work together throughout the year, thereby developing deep ties.
- ◆ Our young employees lead children as team leaders, guiding them to learn about environmental measures at Narita International Airport.



Eco-Kids Tour Report

Every program puts smiles on their faces

46 participants

1st Tour of 15th Year*

▶ August 22, 2019



JAL Hangar Tour

After receiving an explanation about aircraft, the children toured the maintenance area. Standing next to aircraft under maintenance, they intently listened to the explanations and actively asked questions. (Supported by Japan Airlines Co., Ltd.)



GPU Tour

The kids learned about efforts to reduce noise and air pollutants generated during aircraft parking through the use of ground power units (GPUs). They were excited to experience the strong flow of air cooled down to 2-3°C blowing out of the hose. (Supported by AGP CORPORATION)



Noise Measurement Experiment

The kids measured the sound level of aircraft taking off and landing with actual measuring instruments on Runway A. After that, they had a "yelling competition" using the same devices. All the teams vied animatedly!



Touring Classroom by TOKYO GAS

After learning about gas and its recycling system through quizzes, the kids enjoyed creating their own kaleidoscopes from used gas pipes. They had a blast making them. (Supported by Tokyo Gas Co., Ltd.)

Comments from Eco-Kids

Entering places that are normally inaccessible, I learned many things.

Watching planes close up is a great memory.

I learned so many things to tell my friends and family about. I am looking forward to the next time!

Touring Classroom by TOKYO GAS ~ The secrets of yellow gas pipes ~

Mr. Shinya Nishigata
General Manager of Chiba Service Branch, Tokyo Gas Co., Ltd.



The participants made a kaleidoscope by recycling gas pipes made of polyethylene that were once buried in the ground. These pipes have excellent earthquake resistance and eco-friendly characteristics besides they are 100% recyclable. Presenting the overview of the gas pipes and the distribution flow of city gas to individual homes, I and my team members from Tokyo Gas also explained how natural gas is an environmentally-friendly energy source. All the children enthusiastically took part in the "kaleidoscope making" program, which we have been running since last year. We look forward to the continuation of the Eco-Kids Club in the future.



15th Year participants with their unique kaleidoscopes and big smiles

* Only one tour has been held in fiscal 2019 (as of September 2019).

Eco-Kids Tour Report

2nd Tour of 14th Year

45 participants

▶ October 20, 2018



Nature Observation Classroom

Strolling around Greenport Eco-Agripark with a nature observation instructor. The participants observed the animals and plants in the park and made a presentation of their findings.



Visit to Museum of Aeronautical Sciences

While looking around the museum, the members learned the history of aviation and the mechanism of aircraft, as well as the physics of sound and noise countermeasures at Narita Airport at the Eco-Airport Corner.



Ramp Control Tower Tour

Enjoying the scenery from 50 meters high, they learned about ramp controller jobs with excitement.

Comments from Eco-Kids

I was able to come into contact with many insects.

I was happy to see larvae of giant dragonfly (*onyamma*) for the first time.

The scenery from the ramp tower was very impressive.

Nature Observation Classroom

Mr. Yasuhiko Karasawa
Nature Observation Guide, The Nature Conservation Society of Japan

Greenport Eco-Agripark was built on a course around *yatsu* (marshes), a typical landform of Chiba, where *satoyama* (countryside forests) flourish.

With the remarkable progress of computer technology in recent years, the world of virtual reality is getting so real that it is almost impossible to distinguish it from the real world. But, that's why I think it is meaningful to feel it by walking with our own feet, touching it with our own hands, and enjoying the dynamism of life through our own perceptions.

The Narita Airport Eco-Kids Club program is very attractive.



3rd Tour of 14th Year

44 participants

▶ March 2, 2019



NARIKOH Clean Center Tour

After studying the waste disposal method, they saw real equipment and facilities including garbage cranes, collection vehicles, and compost manufacturing facilities. (Supported by NARIKOH Co., Ltd.)



Terminal Eco-Exploration

Through seven "eco-missions," the participants learned about eco-friendly initiatives at various locations in Terminal 1 area. The kids also realized how huge the terminal is.



Water Recycling Class

Taking fun quizzes, the kids learned about water treatment in the airport such as recycling rainwater and kitchen wastewater. (Supported by Narita International Airport Promotion Foundation)



Graduation Ceremony

At the end of the tour, each member received a certificate of completion. Their parents also attended and proudly looked on.

Comments from Eco-Kids

The eco-exploration was hard, but it was fun as I have learned a lot.

I will save water and reduce waste as much as possible.

It was good to know about water recycling.

NARIKOH Clean Center Tour

Mr. Kazumasa Kawamura
Deputy Manager, NARIKOH Co., Ltd.

I think it very meaningful to allow children, leaders of the future, to experience the environmental efforts of Narita International Airport and realize the preciousness of nature.

As explained about the solid waste treatment at the airport, they learned that properly separated garbages is recyclable as raw materials for products and can be used as a heat source for steam turbine power generation. It is my hope that they will learn and become more interested in natural conservation through Eco-Airport activities.



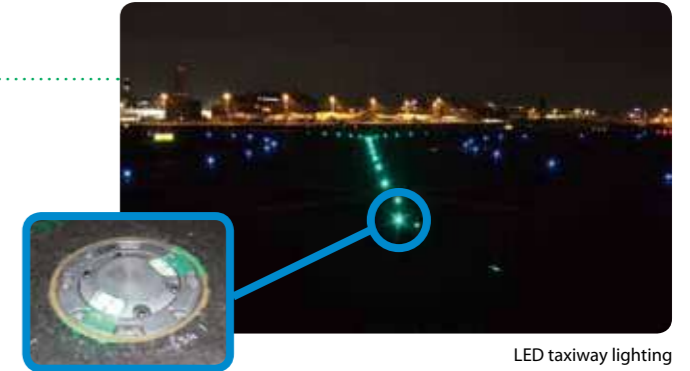
What is ECO AIRPORT

As an "Eco-Airport," Narita International Airport engages in initiatives to combat global warming, contribute to the local environment, and implement resource recycling. Here are some of our activities to reduce the environmental impact of airport operations.

LED Lighting

On Taxiways

We have been promoting the shift of taxiway lights to navigate aircraft from halogen lamps to LEDs (light-emitting diodes). LED lamps have a longer life than halogen lamps and reduce the replacement frequency of lighting components. LEDs consume 1/10 of the power of halogen bulbs and are four times more energy-efficient even when including the lighting device. As of the end of fiscal 2018, LEDs accounted for 63.0% of taxiway lighting.



LED taxiway lighting

In Passenger Terminals

Besides ceiling lights and signs outside the passenger terminal buildings, LEDs are also used for the backlights in advertising boards and information signs. Through the use of LEDs, illuminance has increased and displays are brighter and easier to see. In addition, LEDs offer many other advantages in terms of convenience, running cost, and the environment such as lower heat emission, significantly reduced power consumption, and longer life.

Currently, we are renewing the lighting fixtures in the International Departure Lobby of Terminal 1, where 1,940 LED lights are to be installed (completion scheduled for fiscal 2019).

We will introduce of high-efficiency lighting fixtures such as LED lighting in conjunction with future facility renovation plans.



International Arrival Lobby in Terminal 2



International Departure Lobby in Terminal 2

Main LED Switching Locations

Period	Location	Number of LEDs	Power Consumption Reduction
March 2016	International Arrival Lobby of Terminal 2	1,270 units	40%
December 2017	Nine signs outside Terminals 1 and 2	9 locations	50%
June 2019	International Departure Lobby of Terminal 2	600 units	40%

Green Power Certificate

To promote the reduction of greenhouse gas (GHG) emissions and the introduction of renewable energy, we purchased a "Green Power Certificate" for solar power generation of 125,000 kilowatt-hours (kWh) in fiscal 2017. This amount is equivalent to the energy consumed for continuous real-time monitoring of aircraft noise, air quality, and water quality around the airport in one year.

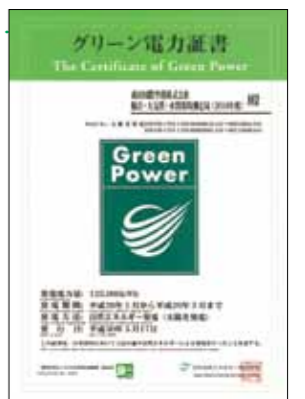
Green power refers to electricity produced from renewable energy such as hydroelectric, wind, solar, biomass, and geothermal. It is environmentally friendly as it produces little to no emissions unlike fossil fuel energy.

The Green Power Certification scheme promotes the spread and expansion of renewable energy use through the issue of tradable certificates certifying the environmental value of clean power.

Narita International Airport also uses these Certificates at events within the airport. We will enhance the introduction of renewable energy and reduce GHG emissions through various initiatives.



LED signs outside Terminal 1



Certificate of Green Power

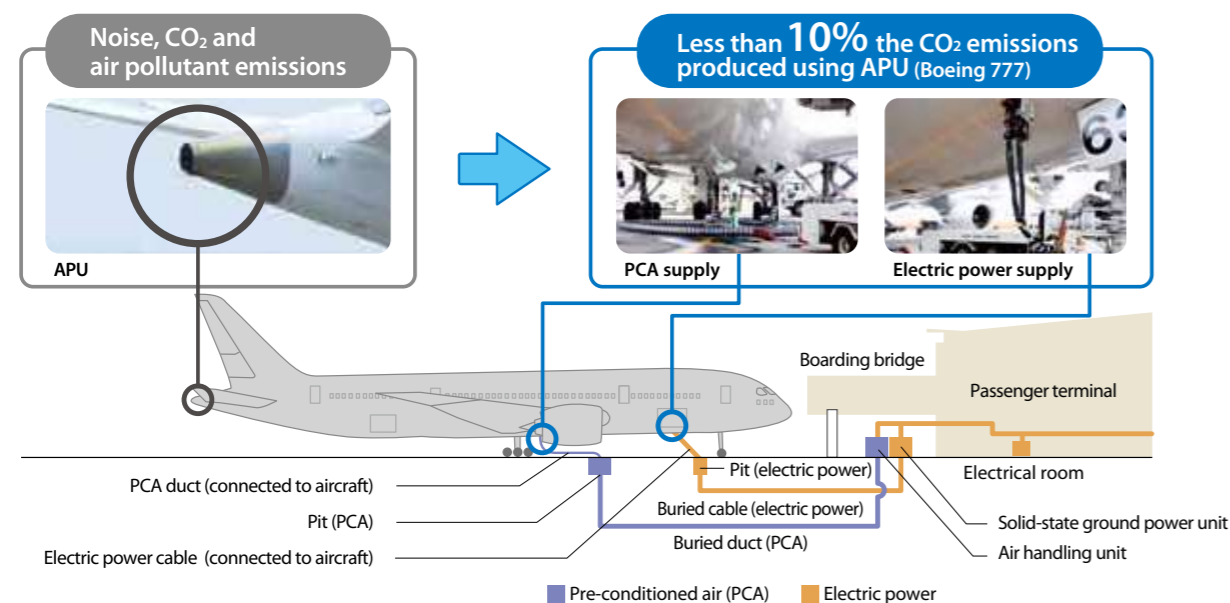
Encouraging GPU Usage

When aircraft are parked on the apron and engines are shut off, essential power and air conditioning can be provided by a small engine fitted to the aircraft known as an Auxiliary Power Unit (APU).^{*1} However, APU operation generates noise and gases causing global warming and air pollution. Consequently, the use of APUs is restricted and the use of Ground Power Units (GPUs)^{*2} is encouraged at Narita International Airport. GPUs enable us to reduce these emissions as they provide power and air conditioning from ground facilities. Currently, GPUs have been installed at all fixed stands in Passenger

Terminals 1 and 2. They are also installed at most stands in Passenger Terminal 3 and cargo area (power supply only). Additionally, since state-of-the-art aircraft such as the Boeing 787 and Airbus A380 power requirements exceed the capacity of existing GPUs, we have been increasing their power output.

^{*1} An Auxiliary Power Unit (APU) is used to start the main engine of aircraft and as a power source for air conditioning and electrical systems.
^{*2} A Ground Power Unit (GPU) is equipment for supplying necessary air conditioning and electrical power to aircraft parked on the ground. It can be either mobile or stationary.

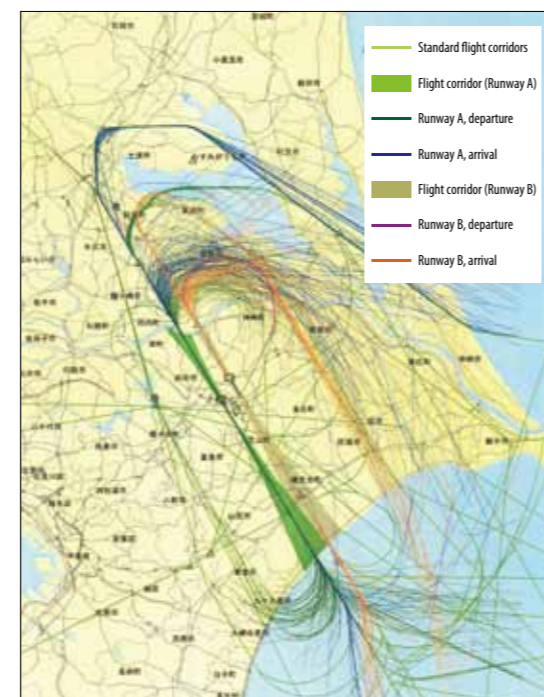
GPU Supply Channels



Establishing and Monitoring Flight Corridors (Monitoring Zones)

To minimize the impact of aircraft noise, flight corridors (monitoring zones) for direct ascent and descent have been established from the Tonegawa River to the Kujukuri Coastline. They are monitored to ensure that aircraft do not deviate from these corridors. In case of deviation without any valid reasons such as weather or safety, their flight numbers and reasons are disclosed to the public. Also, the Ministry of Land, Infrastructure, Transport and Tourism issues a directive to the airlines concerned as necessary. In fiscal 2018, the number of aircraft deviating without valid reason was 10 (0.004%).

Aircraft Tracking Map with Flight Corridors (Example)



Aircraft in Violation

FY	2014	2015	2016	2017	2018
Number of aircraft deviating without valid reason (percentage of total flights)	5 (0.002%)	7 (0.003%)	16 (0.007%)	7 (0.003%)	10 (0.004%)
Number of aircraft movements	228,220	235,190	245,705	252,447	256,821

General Waste Sorting

The greatest volume of general waste produced at Narita International Airport is aircraft cabin waste, which comprises half of the total amount. While catering waste must be incinerated under quarantine laws, other waste such as inflight magazines, bottles, cans, and plastic bottles are sorted and recycled by some airlines in spite of limited onboard sorting space and time available for cabin cleaning. Meanwhile, general waste from passenger terminals, the cargo area, the office area, and other facilities is sorted into bottles, cans, and plastic bottles, ensuring that reusable items are recycled. In an effort to reduce general waste and increase the recycling rate of plastic bottles, waste receptacles for plastic bottles with leftover beverages have been installed in front of security checkpoints since fiscal 2015. We also recycle paper that is shredded at the airport, and about 220 tons of shredded paper were recovered in fiscal 2018.



Sorted recycling bins in terminals

Led by the Eco-Airport Development and Planning Council, recycling initiatives have been expanded to include the airport as a whole. We will pursue the reduction of waste and promote our recycling initiatives in cooperation with airport-related business entities.

Recycling Wastewater from Restaurant Kitchens

Kitchen wastewater from restaurants in passenger terminals contains many impurities such as fat and organic substances. Therefore, it is treated at the Kitchen Wastewater Treatment Facilities to remove impurities through biodegradation. Afterwards, water is taken to the Grey Water Production Facilities where it is disinfected and purified through membrane separation and activated carbon absorption, allowing it to be reused as grey water.* In fiscal 2018, 180 million liters of grey water was generated and reused for flushing toilets in terminals and at the NAA Building.



Kitchen wastewater treatment facility

* Grey water is treated rainwater and wastewater for recycling. It is called "grey water" because it is midway between potable water and wastewater.

Rainwater Recycling

Oil separation plant and holding pond have been installed at Narita International Airport to prevent rainwater runoff from affecting the quality and volume of water at downstream waterways. Rainwater is collected in a holding pond with a capacity of 610,000 cubic meters located on the western side of Runway A and flows out from there into drainage canals outside the airport. For effective use of recycled water, we operate a treatment facility that purifies rainwater runoff. Rainwater is collected in the pond, converted into grey water at the facility, and used as cooling water in the Central Heating and Cooling Plant as well as flushing water in terminal toilets. In fiscal 2018, the rainwater treatment facility produced 430 million liters of grey water.



Holding pond

Construction Waste Recycling

Concrete and asphalt rubble produced by upgrading the aprons and runways is crushed at the airport recycling plant and used as aggregate in airport projects. Eighty-four thousand tons of construction waste were processed in fiscal 2018.



Recycling plant

Effective Utilization of Grass Cuttings

The green spaces around the runways are mowed several times a year, generating 3,200 tons of grass cuttings in fiscal 2018. The grass cuttings are given to farmers around the airport, and some of them are used effectively as feed.



Round bales mowed around a runway

First Airport in Japan to Achieve Level 3 on Airport Carbon Accreditation

As part of the efforts according to the Eco-Airport Master Plan, we participate in the *Airport Carbon Accreditation* program, and Narita was accredited at Level 2 in January 2018, which is verification of its programmed reduction of the emissions from NAA and its subsidiary companies. Furthermore, Narita International Airport achieved at Level 3 as the first among Japanese airports in November of the same year.

Achieving a higher level of accreditation is evidence of Narita's firm commitment. This recognizes NAA's airport-wide reduction program for monitoring carbon emissions from aircraft, motor vehicles, employee transport, and other sources across the airport and taking the framework for accelerating cooperation with airport stakeholders.

Narita Airport will remain committed to participating in the *Airport Carbon Accreditation* program and will continue to strive for further reductions in carbon emissions jointly with airport stakeholders.

About Airport Carbon Accreditation

- ◆ Airports Council International (ACI) awards accreditation in one of four levels to world airports depending upon their achievements in managing and reducing CO₂ emissions.
- ◆ Verification from an independent third party is mandatory.
- ◆ ACI is divided into five regional sectors. This program was launched by ACI Europe in 2009. ACI Asia-Pacific, of which Japan is a member, joined the program in 2011 and the rest of the regions joined in 2014.

Four Levels of Accreditation

	<p>Level 1 Mapping</p> <hr/> <p>Carbon footprint measurement</p>
	<p>Level 2 Reduction</p> <hr/> <p>Carbon management towards a reduced carbon footprint</p>
	<p>Level 3 Optimisation</p> <hr/> <p>Third party engagement in carbon footprint reduction</p>
	<p>Level 3+ Neutrality</p> <hr/> <p>Carbon neutrality for direct emissions by offsetting</p>

Participation in EcoPro

We have been participating in "EcoPro" since 2004. It is the largest environmental exhibition in Japan and is held in Tokyo every December. In fiscal 2018, we set up an airport booth together with Japan Airport Terminal Co., Ltd., Kansai Airports and others, and introduced our measures for the reduction of CO₂ emissions, recycling, and noise mitigation. The NAA booth attracted some 5,500 visitors, including environment staff and students. The exhibition provided a good opportunity to acquaint people with the environmental measures conducted at Narita Airport.



EcoPro 2018

Publishing Environmental Information

We proactively disseminate information to encourage a broader understanding of the environmental measures taken at Narita Airport and the results.

Our environmental report is posted on the NAA website, distributed to airport-related business entities and local residents, and sent to libraries and universities throughout the nation. To make it easier for more people to read our report, it is also registered on a free distribution site that features corporate publications, allowing people to browse them as e-books and/or request mailing of the printed version.

For airport customers, a digest version of the report is also available in terminals.



NAA homepage:
<https://www.naa.jp/en/>

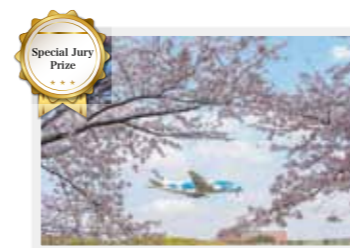


Narita Airport Environmental Community:
<http://airport-community.naa.jp/>
(Japanese version only)

Eco-Photo Gallery 2019

Eco-Photo Gallery, which began as a project to increase people's engagement in sustainability while having fun, marked its seventh year.

It solicits submissions of photographs on themes such as the beauty of the nature around the airport, as well as aircraft, the airport, and ecology. This year, 427 works were received. Selected works including the Chairman's Prize winning photograph and the Special Jury Prize winning photograph can be viewed on the Council's website and are displayed at the NAA Art Gallery in Terminal 1.



Special Jury Prize
Photographer: Matimon
Location: Narita Sakura no Yama



Special Jury Prize
Photographer: @kiki
Location: Observation Deck of Terminal 1



Chairman's Prize

Eco-Airport Development and Planning Council Chairman's Prize
Photographer: Meronpan
Location: Higashi-Kanayama, Narita

Eco-Airport Development and Planning Council (Japanese version only)
[web https://www.naa.jp/eco/fun/index.html](https://www.naa.jp/eco/fun/index.html)

Greening Projects

According to the Greening Master Plan for Narita Airport and Environs, we develop green areas in consideration of vegetation, aesthetic value, and unique topographical features.



1 Satoyama (Countryside Forest) Development

Utilizing existing forestry, natural environments are conserved as *satoyama* (cultivated countryside forests). In 2005, to make more effective use of *satoyama*, in cooperation with Chiba Prefectural Government, Narita City, the Narita Local Hotels Association, and the Narita Satoyama Development Association, we created four kilometers of walking trails along off-site drainage ways as shown in Photo 2 above.

The trails allow visitors to jog or walk through pristine natural environments while enjoying the seasonal colors.



2 Development of Drainage Ways and Waterside Environments

Environmental work on off-site drainage ways connecting to the Tokkogawa River north of the airport is being carried out, creating concrete canals that closely follow natural streams. Cherry blossom trees donated by local residents and others are thriving successfully on the banks, and provide a colorful spectacle in spring.



3 Narita Sakura no Yama (Cherry Blossom Mountain)

Cherry blossom trees were planted with the assistance of Narita City restoring those lost due to airport construction. In spring, the area is crowded with people enjoying the blooming flowers.



10 Toyomi Shinonome no Oka (Hill of Dawn)

An outlook for observing planes, opened on a noise embankment in the Toyomi district. The hill is a favorite spot for aircraft enthusiasts and local families alike.



4 Orchard Development

Chestnut trees have been planted which allow people to enjoy nature with chestnuts picking. In autumn, local children are invited to their harvest.



5 Shibayama Mizube no Sato (Waterside Park)

Many water plants, including iris sanguinea, iris pseudacorus, and water lilies are planted. Walking trails and benches in place allow people to relax and appreciate the surroundings.



6 Asakura Yasuragi no Mori (Tranquil Forest)

Trails are provided in the existing forestry where people can relax and enjoy nature and forest bathing.

8 Sanrizuka Sakura no Oka (Cherry Blossom Hill)



9 Minami Sanrizuka Nature Trail



In order to create an area for relaxation in the region, cherry blossom trees as well as azaleas have been planted at Sanrizuka Sakura no Oka. People can watch aircraft taking off and landing from a grassy knoll. The Minami Sanrizuka Nature Trail, which extends from Sakura no Oka, is a wood chip path through existing forestry, wonderful for strolling and forest bathing.

7 Greenport Eco-Agripark
For details, see facing page. →

Natural Parkland Development

Greenport Eco-Agripark is a pristine natural adventure park on a 17 hectares tract of our company's property that adjoins Shibayama Mizube no Sato Waterside Park, south of the airport (in the Iwayama district of Shibayama). Opened in 2007, it has a variety of geographical features including low hills and vales (*yatsu*), which are typical of the Hokuso region. The Park is home to many species of insect and a rich and diverse flora and fauna. Our aim is to restore the *satoyama* landscape, and to maintain a highly biodiverse environment.

The Park offers not only a strolling spot for local residents but also hands-on experiences in rice cultivation in collaboration with Shibayama Town near the airport and nature observation classes by the Narita Airport Eco-Kids Club.



In the Greenport Eco-Agripark



Narita Airport Eco-Kids Club nature observation class

Greenport Eco-Agripark



ACCESS MAP



Address: 1864-2 Iwayama, Shibayama Town
30-vehicle parking; toilets available
Opening hours: 8 a.m. to 5 p.m.
Ten minutes by car from the airport

COLUMN

The Japanese Pond Turtle, a Precious Creature that Lives around the Airport

The rivers around Narita International Airport are inhabited by Japanese pond turtles (*Mauremys japonica*), which are designated as "quasi-endangered" in the Red List of the Ministry of the Environment. The Japanese pond turtle are an endemic species of Japan that favors living environments such as *yatsu* (marshes) and clean rivers, and have coexisted with humans since ancient times. They look very cute when they walk along rice paddies with their slightly flat shell.

Currently, the habitats of the Japanese pond turtle are threatened nationwide owing to the release of alien species such as red-eared sliders (*trachemys scripta elegans*) and snapping turtles (*chelydra serpentina subsp.*) from breeding environments and their proliferation in the natural environment, along with the shrinking of the traditional Japanese *yatsu* environment.





Eco-Airport Master Plan (FY 2016–2020) and Evaluation of FY 2018 Results



Community Environment Initiatives

*1 **Quieter aircraft:** Aircraft classified as Class A to C according to the Narita Aircraft Noise Index.

*2 **Low-emission vehicles:** Electric, hybrid, plug-in hybrid, natural gas, fuel cell, clean diesel, and low fuel consumption, low-emission certified vehicles (gasoline, diesel, and LPG)

Action Items	Description	Targets (FY 2020)	Results (FY 2018)
Reduce environmental impact from aircraft noise	<ul style="list-style-type: none"> Encourage the introduction of quieter aircraft*1 Limit the use of auxiliary power units (APUs) and encourage the use of ground power units (GPUs) Strengthen noise mitigation measures Enhance aircraft noise monitoring and disclosure of results 	Reduce environmental impact from aircraft noise	The introduction rate of quieter aircraft was 92.8%, a decrease of 0.2 points from FY 2017
Conserve air quality	<ul style="list-style-type: none"> Encourage the introduction of low-emission aircraft Implement measures to reduce aircraft taxiing times Limit the use of auxiliary power units (APUs) and encourage the use of ground power units (GPUs) Promote energy saving at airport-related facilities Encourage the introduction of low-emission vehicles*2 Enhance air quality monitoring in the vicinity of the airport and disclosure of results 	Conserve air quality Reduce air pollution (NOx) per flight by 5% compared to the benchmark year (FY 2015) FY 2015: 16.6 kg/flight	Air pollution (NOx) output 4.8% reduction relative to FY 2015 (15.8 kg/flight)
Maintain water quality of rainwater runoff	<ul style="list-style-type: none"> Properly use, collect, and process de-icing agent Take measures to prevent release of turbid water, etc. Create retention areas and settling grit chambers in construction areas during construction to prevent release of turbid water Divide construction zones to limit the occurrence of turbid water Enhance water quality monitoring in rivers, etc., in the vicinity of the airport and disclosure of results 	Maintain water quality of rain water runoff	Some fluctuation, but maintaining water quality of an average year for rain water runoff Achievement of environmental standards for underground water
Conserve natural environments that nurture biodiversity	<ul style="list-style-type: none"> Ascertain the status of the natural environment and take preservation measures for rare species Preserve agricultural environments Restore the <i>satoyama</i> (countryside forest) landscape Preserve the Greenport Eco-Agripark and use it for educational programs, etc. 	Conserve natural environments that nurture biodiversity	Suitable management of greening projects in airport area Greenport Eco-Agripark preservation and use
Implement and reinforce environmental initiatives in collaboration with local communities	<ul style="list-style-type: none"> Use noise control areas tailored to local conditions Encourage environmental conservation initiatives in collaboration with local communities 	Implement and reinforce environmental initiatives in collaboration with local communities	Suitable management of land vacated by relocation and lease of agricultural land implementation



Resource Recycling Initiatives

Action Items	Description	Targets (FY 2020)	Results (FY 2018)
Recycle resources	<ul style="list-style-type: none"> Reduce general waste and encourage recycling at airport-related facilities Encourage recycling of industrial waste (packaging material, wooden skids, etc.) Encourage measures to reduce aircraft cabin waste Conduct activities to raise awareness among passengers, employees, and other airport users Recycle concrete and asphalt waste material generated by the airport Take measures for the effective use of glass clippings, cut trees, etc. Encourage green procurement 	Recycle resources Reduce general waste incinerated per airport user by 5% compared to the benchmark year (FY 2015) FY 2015: 0.45 kg/airport user	General waste incinerated 8.9% reduction relative to FY 2015 (0.41 kg/airport user)
Recycle water resources	<ul style="list-style-type: none"> Implement potable water saving measures based on an analysis of water usage conditions by building and by season Encourage the installation of water-saving equipment when facilities are updated Reduce potable water usage by utilizing grey water Conduct activities to raise awareness among passengers, employees, and other airport users 	Recycle water resources Reduce potable water usage per airport user by 3% compared to the benchmark year (FY 2015) FY 2015: 30.9 L/airport user	Potable water usage 5.2% reduction compared to FY 2015 (29.3 L/airport user)



Eco-Airport Master Plan (FY 2016–2020) and Evaluation of FY 2018 Results



Climate Change Initiatives

* COOL BIZ and WARM BIZ: A way of living in comfort while keeping room temperature at 28°C in summer and 20°C in winter.

Action Items	Description	Targets (FY 2020)	Results (FY 2018)
Reduce CO ₂ emissions from the airport	<ul style="list-style-type: none"> Promote the introduction of low-emission aircraft Implement measures to reduce aircraft taxiing times Limit the use of auxiliary power units (APUs) and encourage the use of ground power units (GPUs) Take measures for the introduction of next-generation aviation fuels Encourage travel to the airport in low-emission vehicles (install EV charging stations, natural gas and hydrogen stations) Encourage the introduction of low-emission vehicles and eco-driving Generate electricity when incinerating waste through thermal recycling (thermal recovery) Select low carbon electric power sources when purchasing electric power Encourage the introduction of renewable energy 	Reduce airport CO ₂ emissions per flight by 7% compared to the benchmark year (FY 2015) FY 2015: 4.30 t/flight	Airport CO ₂ emissions Reduced by 5.6% of FY 2015 levels (4.06 t/flight)
Reduce energy consumption	<ul style="list-style-type: none"> Increase installation of LED lights on taxiways Encourage energy-saving measures through energy management Conduct energy conservation programs (raise awareness of energy conservation, "COOL BIZ" and "WARM BIZ"*) Encourage installation of energy-saving equipment when constructing new facilities and renovating existing facilities 	Reduce energy consumption by NAA-managed airport facilities per flight by 5% compared to the benchmark year (FY 2015) FY 2015: 15.1 GJ/flight	Energy consumption at NAA-managed airport facilities Reduced by 8.6% of FY 2015 levels (13.8 GJ/flight)
Take countermeasures to adapt to climate change in conjunction with global warming	<ul style="list-style-type: none"> Take appropriate preventive measures to address storms and other abnormal natural events 	Promote countermeasures for adaptation to climate change accompanying global warming	Review of snow and ice management system adapting to weather conditions in recent years Established an operation center and strengthen system for emergencies such as natural disasters



Environment Management

Action Items	Description	Targets (FY 2020)	Results (FY 2018)
Engage in dialogue with stakeholders	<ul style="list-style-type: none"> Promote dialogue with stakeholders Implement environmental conservation programs centered on the Eco-Airport Development and Planning Council Conduct environmental education and awareness activities for airport staff Publicly release environmental information such as noise, air quality, and water quality measurement results and flight routes Give presentations at environment-related conferences on noise, air quality, and other topics Conduct Eco-Kids Club programs, participate in environmental exhibitions, and conduct Touring Environmental Classrooms 	Engage in active dialogue with stakeholders	Held interactive dialogue with airport-related business entities through the Eco-Airport Development and Planning Council Conduct activities to raise awareness among passengers, employees, and other airport users through various events organized by the Council Held interactive dialogues with stakeholders through hosting the Eco-Kids Club and participating in environmental exhibitions
Pursue the creation of value by taking measures with stakeholders to reduce the environmental impact of airport activities throughout society as a whole	<ul style="list-style-type: none"> Encourage activities to reduce environmental impact in collaboration with stakeholders Encourage procurement that takes the environment into consideration 	Pursue the creation of value by taking measures with stakeholders to reduce the environmental impact of airport activities throughout society as a whole	Promoted green procurement at the Council
Reduce environmental impact in collaboration with airports in Japan and abroad	<ul style="list-style-type: none"> Encourage information exchanges and joint environmental conservation activities through liaison conferences with other leading airports in Japan Exchange information with and express opinions to the Airports Council International (ACI) Exchange information with and provide technology to overseas airports 	Contribute to reducing the environmental impact in cooperation with airports in Japan and abroad	Exchanged information through the Environmental Liaison Conference with Major Airports in Japan Exchanged information through ACI activities
Environmental conservation through environmental assessments and verification	<ul style="list-style-type: none"> Conduct environmental assessments based on the Environmental Impact Assessment Act toward improvement of airport functionalities Conduct voluntary environmental assessments 	Conserve the environment by conducting environmental assessments and inspections	Prepared and published Draft Environmental Impact Statement Conducted voluntary environmental assessment monitoring
Conduct environmental management using environmental certification programs	<ul style="list-style-type: none"> Encourage environmental management using environmental certification programs 	Conduct environmental management using environmental certification programs	Achieved <i>Airport Carbon Accreditation</i> Level 3 and promoted environmental management using the program's methods
In the lead up to the 2020 Tokyo Olympic and Paralympic Games, take various measures and conduct trials of and introduce new technologies and present our vision of an eco-airport to the world	<ul style="list-style-type: none"> Promote environmental measures to support low carbon, good air quality, and the 3Rs (Reduce, Reuse, and Recycle) Take measures toward the use of hydrogen energy at Narita Airport Take measures toward the introduction of next-generation aviation fuels Disseminate information on the eco-airport 	In the lead up to the 2020 Tokyo Olympic and Paralympic Games, trial and introduce various measures and new technologies, and present our vision of an eco-airport to the world	Used low-emission vehicles such as fuel cell vehicles and electric vehicles as business vehicles for NAA



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