

Biodiversity

Principle and Outline Daigas Group Biodiversity Policy

Recognizing the essential nature of the many blessings of biodiversity, the Daigas Group in April 2010 established the “Daigas Group Biodiversity Promotion Policy,” revised from the Daigas Group Biodiversity Promotion Policy in March 2018. In line with the Policy and through its business activities, the Group intends to offset its negative impacts on biodiversity and aims to build a nature-positive society.

Efforts live up to the Policy

The Daigas Group has long been striving to conserve biodiversity through various measures, including protecting rare native plants growing on the LNG terminal sites, reusing soil excavated during gas piping works, building multi-level gardens at the experimental residential complex NEXT 21,* and planting trees in Japan. Since we formulated the Daigas Group Biodiversity Promotion Policy in April 2010, we have made positive efforts in line with this policy and actively provided information thereon. Our efforts to conserve biodiversity, have been made under the guidance of government and research institutes, outside experts, and external consultants. We also exchange information with various research groups, including the Japan Business Initiative for Biodiversity (JBIB) to make progress in our efforts. Since 2003, Osaka Gas has been participating in the Keidanren Nature Conservation Council as a member company; we also participate in the Keidanren Initiative for Biodiversity Conservation to collaborate with stakeholders, including the government and regulatory bodies.

Based on its Green Purchasing Guidelines (formulated in 2000, revised in 2022), Osaka Gas works with business partners to promote green purchasing: prioritized procurement of biodiversity-friendly goods and construction works that have less impact on the environment.





In the Daigas Group, every new investment and development project, whether in Japan or abroad, follows an environmental impact assessment at the planning stage when required by law. We survey the water environment, flora and fauna on land, and ecosystems to assess environmental impacts and take necessary measures to achieve a sustainable society.

We have set environmental targets in line with our environmental management system (EMS) and the Group Medium-Term Management Plan 2023, both of which are aimed at the complete implementation of the Daigas Group Environmental Policy, a pledge by the Head of ESG Promotion. These environmental targets also include paying due consideration to biodiversity in business activities.

* Experimental Residential Complex “NEXT 21”

The “NEXT 21” was constructed in October 1993 by Osaka Gas to propose an ideal neo-futuristic urban multiple-unit housing under the concept of “Achieving both comfortable and convenient life and energy-saving/ environmental preservation.” With Osaka Gas’s employees and their families actually living there, NEXT21 has conducted demonstrative experiments based on the themes that are in tune with the times. Such themes include energy saving for the entire building, reducing its CO₂ emissions, greenery restoration and environmental symbiosis in urban areas, ideal forms of residence that reflect diverse lifestyles, and product development. Also, many proposals and presentations that may lead to ideal multiple-unit housing in the future have been made at a time when the liberalization of the energy market is advancing. Some of the proposals have been commercialized.

Key Biodiversity Efforts in the Value Chain

<p>Procurement</p> 	<p>Consideration to biodiversity in LNG tanker transportation</p> <ul style="list-style-type: none"> Ballast water management 	<p>Production</p> 	<p>Green space management at LNG terminals using native seeds and seedlings, etc.</p> <ul style="list-style-type: none"> Conservation of native seeds and seedlings and rare species Network formation with nature in local areas 	<p>Supply</p> 	<p>Reduction in excavated soil from underground gas piping works and promotion of recycling to reduce pit sand extraction</p> <ul style="list-style-type: none"> Use of Vermeer method to reduce excavated soil Recycling of excavated soil and road work waste 	<p>Office Customers</p> 	<p>Activities to raise awareness toward biodiversity</p> <ul style="list-style-type: none"> Provision of information on measures taken at our showroom and LNG terminals Use of native seeds and seedlings in the urban development business
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Biodiversity conservation actives

The Daigas Group is committed to helping build a society harmonious with nature that can conserve biodiversity and enjoy the bounties of nature into the future, and will undertake efforts that promote the conservation of biodiversity and sustainable use, based on the “Daigas Biodiversity Promotion Policy”.

We promoted the following initiatives in FY2023.3.

Procurement

We manage ballast of LNG tankers we use in accordance with regulations of the country where the port of call is located. In addition, our tankers are equipped with water-processing facilities that meet the conditions set under the International Convention for the Control and Management of Ships’ Ballast Water and Sediments stipulated by the International Maritime Organization (enacted in September 2017).

We have reduced the impact of ballast on ecosystems by, for example, replacing ballast taken on at a Japanese port with water from the open ocean before releasing the ballast in a foreign port.

Production

At our LNG terminals (Senboku LNG Terminals I and II, Himeji LNG Terminal), green areas were managed in a way that contributes to biodiversity. In addition, native seeds and seedlings, etc. were maintained, biotopes were created, and biodiversity monitoring studies were conducted at LNG terminals.

Supply

The Daigas Group works to reduce the amount of excavated soil and waste asphalt generated as a result of gas pipe installation, which contributes to reduce impact on the ecosystem. Ways to achieve this include the Vermeer method, which requires soil excavation of only two points, and the shallow pipe installation method. In FY2023.3 these methods allowed us to reduce the amount of excavated soil generated by approx. 222 thousand tons compared to what would have been generated using conventional methods. Our soil and asphalt recycling system promotes the reuse of waste asphalt and excavated soil as either recycled asphalt, regenerated roadbed material, or improved soil. These efforts allowed us to reuse 98% of material excavated during gas pipeline construction in FY2023.3 and send to final disposal approx. one thousand tons.

* In April 2022, Osaka Gas Network Co., Ltd. took over the city gas pipeline business of Osaka Gas Co., Ltd.

Customers

We conduct community and environmental communication and environmental education in approximately 100 m² of rice paddies and 12 m² of fields created on the roof of its own facilities. In addition, our group company engaged in urban development projects is working on planting plants that take biodiversity into consideration at its facilities and the condominiums they develop, encouraging interaction with the local community and creating connections between people and the city.

Habitat conservation for biodiversity: Use of native seedlings in green space management at LNG terminals

At Osaka Gas LNG terminals, we are conducting afforestation activities that recreate the area’s original ecosystems and are capable of supporting a high level of biodiversity. We are also regularly conducting biodiversity monitoring studies to verify the effectiveness of our biodiversity efforts.

At the Senboku LNG Terminal, our concept is “a network of greenery that brings us closer to the community.” We are striving to create a green belt that will be home to a diverse range of life through efforts such as planting native seedlings in a green area, the “Senboku no Mori,” and planting a field of Japanese blood grass as described in “The Pillow Book,” an ancient Japanese essay written in the Heian Period.

Since 2002, under the guidance of the Museum of Nature and Human Activities in Hyogo Prefecture, the Himeji LNG Terminal has been preserving rare plants native to the area of Nishi Harima, Hyogo Prefecture. We are currently growing rare plants including Gardneria multifolia “CHITOSEKAZURA”

and Red-root Lithospermu (both rated level 2 endangered on the Ministry of the Environment’s endangered species list). The new biotope created in FY2014.3 reproduces satoyama woodlands, grasslands and marshes with plants indigenous to Nishi Harima, preserving such rare species as the Platycodon or Japanese Bellflower.

These native species are originally suited to the local climate and are easy to grow. Therefore, they do not require any special consideration or burden in the management of green spaces in the plant to conserve rare species.

As there are indications that these efforts are resulting in an increase in the number of insect and bird species, it is hoped that these trends will also spread to neighboring green belts.

In the future, we will continue to monitor these areas under the guidance and advice of experts.

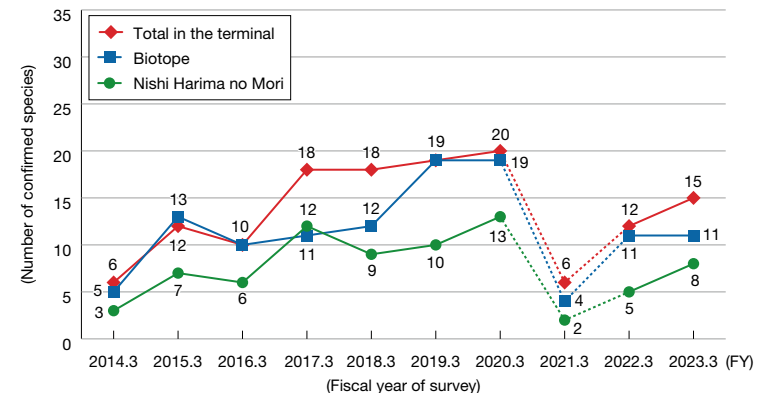


At Senboku LNG Terminal: Green belt planted with Cogon Grass



Biotope at Himeji LNG Terminal

Changes in Butterfly Species Confirmed at Himeji LNG Terminal



Preservation of biodiversity habitats: Development of condominiums introducing the indigenous species in their gardens

Osaka Gas Urban Development Co., Ltd. is a real estate company and is engaged in the development and management of office buildings and condominiums/rented apartments. In addressing “co-existence with the environment,” one of its “five focuses” for urban and property development, Osaka Gas Urban Development Co., Ltd. is pursuing a planting plan that takes biodiversity into consideration.

The planting of native seedlings of “Chimakizasa,” a species of bamboo grass called Sasa, were introduced to the garden of The Urbanex Kyoto Matsugasaki, which was completed in March 2014. Chimakizasa has been recognized as an endangered plant in Kyoto City as a result of excessive eating by wild deer, whose population in the city has been increasing in recent years. All of the 10 bamboo grass plants that were planted in the garden of the “Urbanex Kyoto Matsugasaki” were donated by the Chimakizasa revival committee, a local team formed to increase numbers of the plant, with members being mainly residents of Sakyo Ward, Kyoto City and researchers from Kyoto University.

At the “Urbanex Kobe Okurayama”, completed in February 2016, Osaka Gas Urban Development has planted Japanese blue oaks, gooseneck loosestrife, and other local seeds/seedlings with support from the Museum of Nature and Human Activities, Hyogo. Signs describing plant names and their characteristics were also installed to help local residents learn about the importance of biodiversity. These combined efforts, including the active use of native seedlings, earned the 2016 Good Design Award.

Since FY2019.3, Osaka Gas Urban Development Co., Ltd. has transplanted native seeds and seedlings from green spaces at Osaka Gas facilities to the planting areas of condominiums it has developed. Examples of these properties completed in FY2021.3 are Scenes Osaka Honmachi and Scenes Otemachi. In this way, we share our in-house know-how in conserving biodiversity across the Daigas Group. Osaka Gas Urban Development will continue to standardize biodiversity-friendly planting plans as specifications and work on such plans at the condominiums it develops.



Scenes Tsukaguchi

As of July 31, 2023, 31 properties have introduced local biodiversity-friendly planting. (including properties for sale and for rent)

Biodiversity risk assessment

The Daigas Group, being aware of the environmental impact of its value chain, strives to minimize its impact on biodiversity and expand its contribution.

We conduct questionnaires regarding sustainability activities at our LNG suppliers to check on the status of their monitoring activities for local ecosystems and their efforts to conserve the biodiversity of local ecosystems.

In the Group, every new development project, whether in Japan or abroad, follows an environmental impact assessment at the planning stage when required by law.

For example, in the process of constructing the Senboku Natural Gas Power Plant, the core facility for the Group’s electricity business, between 2002 and 2006, we conducted an environmental impact assessment. It covered the construction work (the impact of transportation of construction materials, such as air pollution, noise, and vibration) and the presence and shared use of land and workpieces (the impact of ground modification and the facility’s existence on local flora and fauna and the impact of exhaust gas and wastewater from the facility in operation on the quality of air and water). We also adopted environmental conservation measures against air pollution, noise, vibration, and wastewater in order to further reduce the environmental impact of the project.

Also, in the Himeji Natural Gas Power Plant construction project, which Himeji Natural Gas Power Generation Co., Ltd., a wholly owned subsidiary of Osaka Gas, is implementing, an assessment process has been completed in compliance with the Environmental Impact Assessment Act.

Biodiversity-conscious initiatives at the Scenes Tsukaguchi condominium selected for the 10th ABINC Certification and Good Design Award 2020

In February 2021, Scenes Tsukaguchi, a condominium in Amagasaki City, Hyogo Prefecture, developed by Osaka Gas Urban Development Co., Ltd., acquired the 10th Ikimono Kyosei Business Establishment *1 certification organized by the Association for Business Innovation in harmony with Nature and Community (ABINC)*2.

The ABINC certification aims to foster harmony between nature and human beings in business activities. ABINC conducts a third-party assessment of biodiversity-conscious initiatives to create, manage and use green spaces, and it certifies eligible business sites as “Business Sites in Harmony with Nature.” Osaka Gas Urban Development constructed Scenes Tsukaguchi while implementing biodiversity-conscious initiatives in cooperation with experts, including those from the Museum of Nature and Human Activities, Hyogo. On the condominium site, native plant species, such as the bamboo-leaf oak and the sawtooth oak, were planted to create green spaces in consideration of local vegetation. These green spaces were designed to create a network with other small green spaces dotted nearby and help birds and butterflies find places to inhabit. In addition, seedlings thinned in the planting management process on land owned by the Daigas Group were transplanted to the condominium site to help preserve the genes of plant species native to the Rokko mountains in Hyogo prefecture.

Scenes Tsukaguchi also won the Good Design Award 2020 organized by the Japan Institute of Design Promotion. Following the Good Design Award 2016, this was the second time that Osaka Gas Urban Development had won the same award. The 2020 award came to the company in recognition of its success in facilitating interactions between the condominium and the neighborhood and creating a linkage between residents and the local community by designing the condominium to be open under the concept of “Re:CONNECT,” and in fostering communication between people from different areas or age groups in the living environment abundant with rich natural features by building three gardens with different themes on the condominium site.



Scenes Tsukaguchi



*1 “Ikimono Kyosei Business Establishment” (lit. “Business Sites in Harmony with Nature”) is the registered trademark of the Japan Business Initiative for Biodiversity (JBIB).