

Information Disclosure Based on TCFD Opinions

The Toho Gas Group regards climate change as a critical management issue, and has made proactive efforts to reduce environmental impact through expanding the popularization of natural gas, which is the fossil fuel with the least environmental load, and as well as developing high-efficiency gas equipment and encouraging its adoption. Having endorsed the Task Force on Climate-related Financial Disclosures (TCFD) in April 2020, the Group has been promoting efforts addressing climate change in line with the recommendations of the TCFD and, in July 2021, it enacted and published The Toho Gas Group 2050 Carbon Neutrality Initiative. In addition to promoting low-carbon and decarbonization efforts for our customers' premises, we will work to develop technologies with an eye on future decarbonization of gas itself. We will also work to expand the use of hydrogen, reduce or eliminate carbon in electricity, and promote the transition to carbon neutrality.

Information Disclosure in Line with the Recommendations of the Task Force on Climate-related Financial Disclosures (TCFD)

The TCFD published its final report in June 2017, and has recommended that enterprises and other organizations make disclosures with respect to the following items, including governance related to climate change as well as strategies (risks, opportunities, and responses).



1 Governance

- The Group recognizes that response to environmental issues, including climate change countermeasures, is a critical business issue.
- The Carbon Neutral Promotion Committee comprises executive officers from company departments, including the Toho Gas Company President and Representative Director, who acts as head of the committee. The Committee holds discussions to define the directionality for important matters, including policies and plans relating to carbon neutrality.
- With the Executive Office in charge of the CSR Environment Department as the chairperson, the Group Sustainability Committee comprising directors and department heads from Toho Gas and its major subsidiaries is convened to discuss and check policies and targets toward sustainability, including measures to address climate change.
- Such important matters as risks and opportunities, strategies, risk management, and metric reporting relating to climate change are discussed by the Board of Directors through the Management Committee, which supervises the state of execution.

2 Strategy

- To assess and evaluate future climate-related risks, opportunities, and responses in line with TCFD recommendations, we are conducting cross-sectional scenario analysis for the year 2050.
- As external scenarios we selected an "under-2°C scenario" in which the increase in global temperatures is held to less than 2°C and a "4°C scenario" in which change to lower carbon does not proceed. Based on the images of society in 2050 drawn out by these scenarios, and taking into account such temporal axes as short- to medium-term (through 2030) and medium to long-term (through 2050), we identified risks and opportunities and assessed their impact.

Main external scenarios used in scenario analysis

International Energy Agency (IEA)

- World Energy Outlook ·NZE scenario ·STEPS scenario
- Energy Technology Perspectives ·B2DS scenario ·RTS scenario

Intergovernmental Panel on Climate Change (IPCC)

- Fifth Assessment Report
- RCP2.6 scenario ·RCP8.5 scenario

- As a strategy geared to 2050, following discussions by the Board of Directors via the Management Committee, the Toho Gas Group 2050 Carbon Neutrality Initiative was formulated and announced in July 2021. With this strategy at the core, we are organizing our response measures for risks and opportunities and evaluating their resilience.

3 Risk Management

- At Toho Gas, we push forward organizational identification, assessment, and response with respect to risk occurrence and change based on Risk Management Rules, and improve the level of risk management and conduct smooth business operations.
- Climate-related risks are integrated into the company-wide risk management system and processes, annual identification of risk factors, including climate-change factors, is conducted, response measures by the assigned department are discussed, and comprehensive evaluation is carried out. The comprehensive evaluation results and other matters are discussed by the Board of Directors through the Management Committee one or more times a year, and the Board of Directors supervises company-wide risk management and its execution status.

4 Metrics and targets

- Environmental action goals and other values are used as metrics and targets.
- Progress relating to these metrics and targets is discussed by the Board of Directors through the Management Committee and the Board of Directors supervises the execution status.

■ Environmental action goals ▶ P.36



● Major Risks Accompanying Climate Change

■ Risks having comparatively large financial impact

Scenarios and external environment			Short- to medium-term (through 2030)	Medium- to long-term (through 2050)	
Under-2°C scenario	Transition risks	Technology	Progress of decarbonization innovation	<ul style="list-style-type: none"> Transition to renewable energy through the development of technology 	<ul style="list-style-type: none"> Lagging behind in competitive ability due to delays in the development of decarbonization technology for non-renewable energy sources
		Regulation	Carbon pricing	<ul style="list-style-type: none"> Increased sales price of natural gas due to carbon pricing 	<ul style="list-style-type: none"> Acceleration of movement overseas by domestic companies due to relative increase in tax
			Transition to renewable energy	<ul style="list-style-type: none"> Transition to renewable energy and a general shift to electrification 	<ul style="list-style-type: none"> Advancement of energy-saving and shift to electrification in the area of heating
		Market	Change in customer preferences	<ul style="list-style-type: none"> Decrease in thermal demand for commercial use due to electrification of passenger cars Shift toward electrification due to the adoption of standard specifications for the new formation of ZEH/ZEB 	<ul style="list-style-type: none"> Decrease in thermal demand for commercial use due to electrification of all vehicles Further shift toward electrification due to the adoption ZEH/ZEB
4°C scenario	Physical risks	Acute	Increasing weather intensity	<ul style="list-style-type: none"> Gradual increases in countermeasure expenses related to production and supply equipment and facilities Gradual increases in disaster-recovery costs 	<ul style="list-style-type: none"> Further increases in countermeasure expenses related to production and supply equipment and facilities Further increases in disaster-recovery costs
		Chronic	Rising temperatures	<ul style="list-style-type: none"> Reductions in demand for heaters and water heaters Strain on electrical power transmission at peak periods attendant upon expanded air-conditioning demand 	<ul style="list-style-type: none"> Further reductions in demand for heaters and water heaters Further strain on electrical power transmission at peak periods attendant upon expanded air-conditioning demand

● Major Opportunities Accompanying Climate Change

■ Opportunities having comparatively large financial impact

Scenarios and external environment			Short- to medium-term (through 2030)	Medium- to long-term (through 2050)	
Under-2°C scenario	Transition risks	Technology	Progress of decarbonization innovation	<ul style="list-style-type: none"> Wider use of technology for energy conservation and advanced and high-efficiency use of energy 	<ul style="list-style-type: none"> Establishment and wider use of decarbonization technology (e-methane, carbon recycling, hydrogen usage)
		Regulation	Carbon pricing	<ul style="list-style-type: none"> Expansion of gas demand through fuel switching and advanced utilization 	<ul style="list-style-type: none"> Expansion of use of carbon neutral energy by domestic businesses due to the establishment of suitable taxation and systems
			Transition to renewable energy	<ul style="list-style-type: none"> Expansion of use of renewable energy sources and batteries Supplementation of renewable energy and wider use of cogeneration that contributes to improved resilience 	<ul style="list-style-type: none"> Wider use of renewable energy and batteries Augmentation of renewable energy and wider use of decarbonization technologies that contribute to enhanced resilience
		Market	Change in customer preferences	<ul style="list-style-type: none"> Wider use of fuel-cell passenger cars and compact specialized vehicles (forklifts, etc.) accompanying improvement of the infrastructure for hydrogen Increased need for optimized utilization and advanced utilization (resource aggregation) of energy, including for heating and electricity 	<ul style="list-style-type: none"> Expansion of the market for passenger cars, buses, cargo vehicles, and other fuel-cell vehicles accompanying the expanded spread of the hydrogen infrastructure Energy supply and demand will be optimized through bidirectional power flexibility involving individuals and through the practice of local production for local consumption
4°C scenario	Physical risks	Acute	Increasing weather intensity	<ul style="list-style-type: none"> Increase in demand for a high-resilience supply infrastructure Increased need for energy systems providing convenience and resilience 	<ul style="list-style-type: none"> Further increase in demand for a high-resilience supply infrastructure Further increase in need for energy systems providing convenience and resilience
		Chronic	Rising temperatures	<ul style="list-style-type: none"> Expansion of demand for air conditioners and increase in demand for high-efficiency air conditioning Increase in demand for products and services that contribute to peak-cut control for electricity 	<ul style="list-style-type: none"> Further expansion of demand for air conditioners and increase in demand for high-efficiency air conditioning Further expansion of the spread of products and services that contribute to peak-cut control for electricity

● Major Responses Addressing Climate Change

Scenarios and external environment			Main responses	
Under-2°C scenario	Transition risks		<ul style="list-style-type: none"> CO₂ separation and capture, e-methane (synthetic methane), and other technological developments leading to decarbonization of gas itself Building the Chita Midorihama Factory-based hydrogen supply chain and increased used of hydrogen in the future Expansion and use of renewable energy power sources, expansion of power services leading to low-carbonized/decarbonized electricity 	
4°C scenario	Physical risks	Acute	Increasing weather intensity	<ul style="list-style-type: none"> High-tide countermeasures such as reinforcement of protective embankments, flooding countermeasures such as water-tightening, and expediting disaster recovery through segmentation of supply blocks and the like Wider use of energy systems offering high energy savings, convenience and resilience (cogeneration and smart towns)
		Chronic	Rising temperatures	<ul style="list-style-type: none"> Provision of advanced utilization of energy and energy savings with respect to increase in demand for air conditioning accompanying rising temperatures Peak-cut control for electricity through resource aggregation (demand response [DR], virtual power plants [VPPs], etc.) and advanced utilization of gas

Toho Gas Group's 2050 Carbon Neutrality Initiative ▶ P.23

Management of Environmental Preservation

Basic Concept

Toho Gas Group has set its Environmental Action Principles and Environmental Action Guidelines to help the realization of a sustainable society, including carbon neutrality. Having set environmental action goals, we are engaging in a wide range of environmental actions, including global warming countermeasures, resource recycling, and making an environmental social contribution in cooperation with the region. Furthermore, in addition to engaging in compliance with environmental laws and environmental education by constructing Environmental Management Systems, we are managing the progress of initiatives through a PDCA cycle.

Environmental Action Principles

The Environmental Action Principles (established in 1993; final revision in 2022) are regarded at Toho Gas's business policy.

Environmental Action Principles

Basic Policy

Toho Gas and its Group companies recognize the importance of preserving the environment on a regional and global basis. The Group contributes to the realization of a sustainable society through the resolution of social issues relating to the environment.

Principle

- ⟨Principle1⟩ The Group will contribute to reducing the impacts of its business activities on the environment related to customers.
- ⟨Principle2⟩ The Group will reduce the impacts of its business activities on the overall environment.
- ⟨Principle3⟩ The Group will contribute to environmental preservation in collaboration with local communities and the global community.
- ⟨Principle4⟩ The Group will step up research and development regarding environmental preservation technologies.

Environmental Action Guidelines

Our Environmental Action Guidelines (established in 2011 and revised in 2022) set out the concept and content of key environmental activities that the Group is engaged in.

Environmental Action Guidelines

Global Warming Countermeasures

The Group aims to achieve carbon neutrality in the entire supply chain through the expansion, highly-efficient use, and high-degree application of environmentally-friendly energy, including natural gas, and the utilization of renewable energy and the decarbonization of gas itself.

Resource Recycling

The Group will promote the effective use of resources in each stage of business activities and reduce, reuse and recycle waste to minimize external emissions.

Biodiversity Conservation

The Group recognizes the importance of biodiversity, which is the foundation of society and the economy, and will work to grasp and analyze the impact of business activities on biodiversity as well as promoting biodiversity-friendly activities.

Environmental Social Contribution

The Group will contribute to the resolution of social issues by participating in environmental activities/projects in collaboration with local communities and the global community.

Technology Development

The Group will promote technology development toward realizing carbon neutrality, such as the highly-efficient and high-degree application of energy, the use of hydrogen and renewable energy, the capture and separation of CO₂ and methanation.

Environmental Management

Recognizing the impact of its business activities on the overall environment, the Group will rigorously enforce environmental management, and develop human resources who are environmentally conscious and can act on their own initiative. We comply with the demands of laws, ordinances and agreements relating to the environment.

Organizational Structure for Management of Environmental Preservation

Regarding key environmental challenges such as reducing environmental impact and complying with environmental regulations, the Sustainability Committee composed of Toho Gas and major subsidiaries deliberates, discusses, and monitors the direction, goals, and various initiatives of activities.

For environmental action goals, the Environment Subcommittee reviews achievements from various departments and confirms approaches. Also, within Toho Gas and subsidiaries, specific roles are assigned to drive activities: *environmental promoters* responsible for advancing specific actions, *environmental auditors* conducting voluntary environmental compliance audits, and *environmental controllers* overseeing these roles, all working to promote environmental initiatives.

Organizational Structure for Management of Environmental Preservation





Environmental Action Goals (FY2022-FY2025)

Aligned with the timeframe of the Medium-Term Management Plan, we have established environmental action goals for FY2022 to Fy2025 as follows, and are actively promoting initiatives to achieve them. Below is the progress for the initial fiscal year, FY2022. While the target for reducing CO₂ emissions per unit of business activity has not been met due to increased energy usage caused by changes in operational conditions resulting from global LNG supply-demand constraints, we will continue efforts to curb emissions through energy conservation measures. Progress on other target areas is proceeding smoothly.

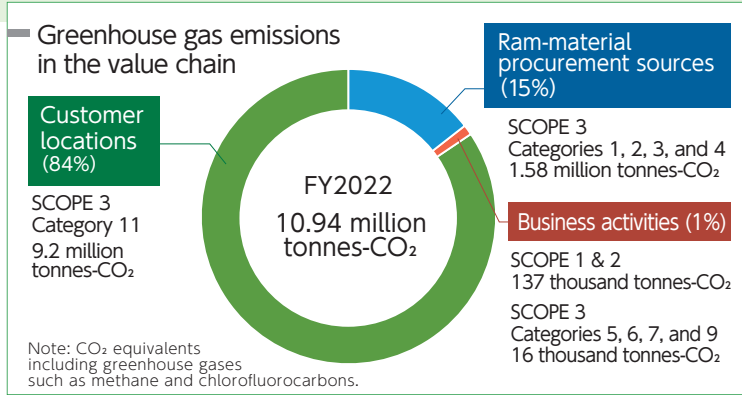
Type		Goal item	FY2025 target value	FY2022 results
Environmental load reduction	Global Warming Countermeasures	Amount of contribution to CO ₂ reduction	1 million tonnes compared to FY2020	307 thousand tonnes
		Amount handled of renewable energy power sources	250 thousand kW	93 thousand kW
		Reduction of CO ₂ emissions in business activities	-2% CO ₂ emissions intensity /year	+3.4% compared with the previous year
	Resource Recycling	Zero emissions of industrial waste at city gas plants	Maintain (1% or lower final disposal rate)	Maintained (0.3% final disposal rate)
		Recycling rate of waste generated after gas pipeline construction	99% or more	99.7%
		Promoting "3R" (reduce, reuse, and recycle) through business activities		<ul style="list-style-type: none"> •Promotion of emission reduction and recycling through 3R initiatives such as waste recycling •Company-wide rollout of in-house reuse activities •Appropriate compliance with waste-related regulations such as the Act on Promotion of Resource Recycling Related to Plastics
Biodiversity Conservation	Reduction in the use of natural mountain sand and crushed stone in gas pipeline construction	15% or lower compared to conventional engineering methods	10.0% compared to conventional engineering methods	
	Sustenance and recovery of biodiversity through business activities and regional contribution activities, satoyama and forest conservation, and contribution to protection of local species		<ul style="list-style-type: none"> •Certified company under the Aichi Biodiversity Company Certification Program •Maintenance and management of biotopes, and implementation of satoyama and orest conservation activities in collaboration with local governments •Planting of flower seedlings in the Western-style garden of Higashiyama Botanical Garden •Forest conservation volunteer activities in Nagoya Higashiyama Forest and Toho Gas Forests (Odai, Mitake, Seto) 	
Environmental Social Contribution	Environment social contribution activities in collaboration with local communities, and contribution to resolution of regional and social issues		<ul style="list-style-type: none"> •Company-wide cleanup activities •Beautification activities around business locations (conducted bimonthly; Mizushima Gas Co., Ltd., etc.) •Providing environmental learning opportunities through the Gas Energy Exhibition Hall (number of visitors: about 12,000) •Offering special on-site classes and environmental education courses 	
Technology Development	Advanced use of energy and promotion of technical development for achieving carbon neutrality		<ul style="list-style-type: none"> •Initiation of verification testing for CO₂ separation and capture technology targeting factory exhaust gas •Signing an agreement with the city of Chita for methanation verification utilizing biomass-derived CO₂ •Expansion of hydrogen-utilization support services for industrial combustion equipment and construction of a dedicated testing site 	

Management of Environmental Preservation

Environmental Load of the Value Chain

Emissions of CO₂ and other greenhouse gases as well as other instances of environmental load occur throughout the entire value chain, including in such *business activities* as the manufacturing and supply of city gas, LPG, and electricity, as well as at different stages such as *raw-material procurement* and at *customer locations*.

In the gas business, a significant portion of greenhouse gas emissions occurs at *customer locations*, and so the Toho Gas Group devotes effort to mitigating these emissions. Additionally, we assess the state of greenhouse gas emissions and evaluate environmental load in relation to *raw-material procurement sources*. For our *business activities*, we also make effort to reduce greenhouse gas emissions through measures such as improving energy efficiency and energy conservation.



Resources for city gas	LNG 2,660 thousand tonnes LPG 150 thousand tonnes	Amount of energy consumption	Purchased electricity 118.2 million kWh City gas 15.85 million Nm ³ Vehicle fuel 110 thousand GJ	Energy sales volume	City gas 3,550 million m ³ Electricity 2,400 million kWh Heat 370 thousand GJ LPG 480 thousand tonnes
Resources for LPG	LPG 480 thousand tonnes	Water usage amounts	Tapwater 1,280 thousand m ³ Seawater 225 million m ³		

Release to the atmosphere	Greenhouse gases 1,580 thousand tonnes-CO ₂ (Portion thereof released during facility construction) 50 thousand tonnes-CO ₂	Release to the atmosphere	CO ₂ 134 thousand tonnes-CO ₂ NOx 35 tonnes SOx 0 tonnes	Release to the atmosphere	Combustion of city gas 7,780 thousand tonnes-CO ₂ Combustion of LPG 1,430 thousand tonnes-CO ₂
		Industrial waste materials	Amount generated 38,593 tonnes Reduction/recycling ration 96% Amount of external disposal 1,467 tonnes		





Environmental Management System (EMS) Certification

We are working proactively to acquire EMS certification to enhance its environmental management. We have obtained the ISO 14001 certification at all city gas plants. Some subsidiaries have obtained Eco Action 21 certification from Japan's Ministry of the Environment. In addition, Toho Gas and its subsidiaries have also gained environmental certification from local authorities, such as Nagoya SDGs Green Partners.

Type	Certified companies (offices)
ISO14001	Toho Gas (Chita-Midorihamma Works, Chita LNG Terminal, Chita Calorific Value Adjustment Center, Yokkaichi Works)
Eco Action 21	Toho Gas Engineering Co., Ltd.
Certification programs of municipalities	<ul style="list-style-type: none"> •Toho Gas (branch office, Minato AQUUS Energy Center, etc.), •Toho Liquefied Gas Co., Ltd. (Nagoya branch office, etc.), •Toho Real Estate Co., Ltd. (Imaie Gas Building, etc.), •Toho Gas Engineering Co., Ltd. •Toho Gas Techno Co., Ltd. (branch office, etc.),

Environmental Education

Toho Gas Group provides environmental education by target employees. We hold environmental seminars on topics such as environmental policies and social trends for senior management. We also annually conduct environmental law training seminars and e-learning courses tailored to different levels of managers and employees to raise awareness and knowledge of environmental laws and regulations and to bolster our response capabilities.

Compliance with Environmental Laws and Regulations

The main environmental laws and regulations related to the Toho Gas Group are as follows. Under our environmental management framework, we conduct environmental law and regulation seminars, voluntary environmental audits, and the like to ensure proper compliance. There have also been no accidents or violations of regulations that would significantly impact the environment.

Type	Main environmental laws and regulations
General	Basic Environment Act
Global Warming Countermeasures	Act on the Rational Use of Energy, Building Energy Efficiency Act, Act on Promotion of Global Warming Countermeasures, Act on Rational Use and Proper Management of Fluorocarbons, Act on the Protection of the Ozone Layer
Resource Recycling	Waste Management Act, Act on Special Measures Concerning Promotion of Proper Treatment of PCB Wastes, Act on Recycling of Construction Materials, Act on Recycling of Specified Kinds of Home Appliances, Act on the Promotion of Sorted Collection and Recycling of Containers and Packaging, Act on Promotion of Recycling and Related Activities for Treatment of Cyclical Food Resources, Act on Promotion of Resource Recycling Related to Plastics
Pollution Prevention	Air Pollution Control Act, Water Pollution Prevention Act, Noise Regulation Act, Vibration Regulation Act, Soil Contamination Countermeasures Act, Mercury Pollution Control Act, Law concerning Pollutant Release and Transfer Register (PRTR)

Name	Target
Environmental training seminars	Senior management
Environmental law training seminar	Managers and employees
New employee training	New employees

Self Environmental Audits

Toho Gas Group has conducted self environmental audits since FY1994. We conduct annual audits at workplaces of Toho Gas and subsidiaries whose operations relate to environmental laws and regulations. We use a duplicate audit system of primary audits at workplaces of Toho Gas and its subsidiaries that are related to environmental laws and regulations, and secondary audits at each department and company.

Implementation of Self Environmental Audits

Implementation period
July through September, 2022

Audit target
Workplaces of Toho Gas and subsidiaries whose operations relate to environmental laws and regulations

Environmental auditors
Individuals appointed in each department and subsidiary who have been confirmed to have acquired sufficient knowledge of environmental laws and regulations through environmental law training sessions and e-learning

Target laws and regulations	Key points of confirmation during audits
Waste Management and Public Cleansing Act	Internal rule enforcement regarding pre-contract compliance checks for industrial waste disposal outsourcing (including confirmation of contractor's permit, contract signing, and on-site verification), proper operation of storage areas and the like, manifest issuance and retention, and status of submission of regular reports, and other such matters
Act on Rational Use and Proper Management of Fluorocarbons	Implementation of equipment management ledger for GHP and other regulated containers under the Act on Rational Use and Proper Management of Fluorocarbons and regulatory inspection as well as thorough implementation of company rules on legal compliance check when disposing equipment
Air Pollution Control Act	Thorough prior survey on asbestos before demolishing buildings
Other environmental laws and regulations	Organizational check on requirement of filing for Construction Material Recycling Act

Global Warming Countermeasures

Basic Concept

Global Warming Countermeasures are an important management issue for the Toho Gas Group. As an energy business operator, Toho Gas Group is implementing countermeasures against global warming taking into consideration the value chain.

Toho Gas not only aims to reduce our own CO₂ emission factor but also sets environmental action goals aimed at restraining CO₂ emissions at customer locations. We promote a wide range of initiatives, including supplying environmentally friendly energy, switchover from other fuels to natural gas or LPG, promoting the adoption of advanced and highly efficient devices such as fuel cells, fostering the utilization of renewable energy in collaboration with local communities, as well as pursuing technological development and testing such as methanation and CO₂ separation, capture, and utilization, all in the pursuit of achieving carbon neutrality by 2050.

Climate Change Mitigation at Customer Locations

Toho Gas has set the target of contributing to CO₂ reduction through our business activities. The actual CO₂ reduction contribution for FY2022 amounted to 307 thousand tonnes-CO₂.

Transition to natural gas

Among fossil fuels, natural gas is an environmentally superior energy source with lower CO₂ and NO_x emissions upon combustion, and no SO_x emissions. By transitioning fuel sources at customer locations, such as from petroleum and the like to natural gas, we are contributing to the reduction of CO₂ emissions.

Promoting implementation of high-efficiency gas equipment and systems

In addition to transitioning fuels, we introduce high-performance burners and other equipment to our customer locations, which can further reduce CO₂ emissions.

We are also advancing the adoption of energy-efficient equipment and systems, including household fuel cell systems like "Ene-Farm" for residential use, gas cogeneration

systems for commercial use, high-efficiency boilers, and gas heat pump (GHP) air conditioning systems.



Gas cogeneration system



Flow-through boiler

Suppression of fluorocarbon emissions

Fluorocarbons used in air conditioning equipment and the like have very high global warming potentials, making their emissions control a significant concern.

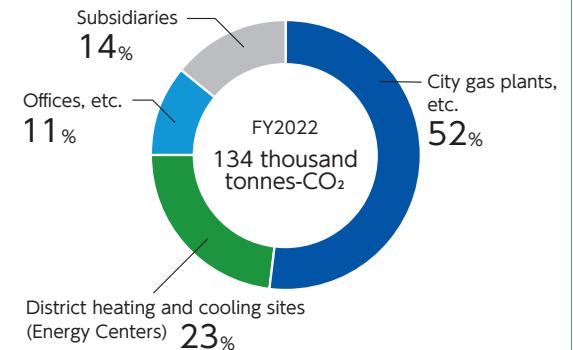
We conduct the collection of refrigerant fluorocarbons generated during maintenance and upgrading of commercial air conditioning equipment. In FY2022, we collected and appropriately processed the entire amount of fluorocarbons from the targeted equipment (1,291 units, with a collected amount of 13.9 tonnes of fluorocarbons).

CO₂ reduction in business activities

The Toho Gas Group promotes energy-saving initiatives throughout various aspects of our business operations as an energy provider. In FY2022, the CO₂ emissions from our business activities across the entire Toho Gas Group amounted to 134 thousand tonnes-CO₂.

We establish targets for global-warming prevention within each business sector, invest in energy-saving equipment, and implement thoroughgoing efficient operational management to achieve these targets. Consequently, we have consistently received the "Class S" (excellent performer) rating in the classification assessment of the Act on Rationalizing Energy Use.

CO₂ emissions in business activities (consolidated)



Initiatives at City Gas Plants

City gas plants use a manufacturing method of extremely high energy efficiency during manufacturing, in which vaporized gas is manufactured by heat exchange using seawater of liquid natural gas (LNG) at a temperature of around -160°C.



Efficient utilization of the cold energy of LNG is made in supplying cold energy, manufacturing dry ice and liquid nitrogen in adjacent plants, and in advanced energy-saving equipment that reliquefies the BOG (boil-off gas) produced in LNG tanks.

In addition to these initiatives, pipelines built as back-ups between plants and to adjust inventory, for example, are also used to adjust the amount of gas sent to new plants as part of our efforts to further reduce the amount of energy used by reviewing operation methods for the overall optimization of operation methods at all LNG plants.

Initiatives in District Heating and Cooling

In district heating and cooling, we aim to achieve low carbon for entire neighborhoods by supplying hot water and thermal energy (cold energy and heat) for heating and cooling to

multiple buildings within an area and by optimizing equipment operation. We conduct heat-supply business in ten areas that Toho Gas operates directly and six areas in which we are invested in operations, mainly in the City of Nagoya.

At the Minato AQLS Energy Center, which is an example of the latest district heating and cooling, we are optimizing energy for the entire town by means of a community energy management system (CEMS) that utilizes exhaust heat during power generation and the unused energy of canal water in addition to distributed power sources that include gas cogeneration offering high overall efficiency, renewable energy, and storage batteries. Further, all condominium units in the area are installed with ENE FARM type S in rated operation around the clock as standard equipment, with excess power used town-wide. In this way, we are promoting local production and local consumption of energy.

Initiatives in Offices, etc.

In our offices, for example, we are striving to reduce CO₂ through various energy-saving countermeasures, including the introduction of highly efficient gas air conditioning, LED illumination, and other energy-saving equipment, as well as low-emission vehicles.

To enhance the energy-saving awareness of each individual employee, we continue our efforts to curb increases in energy consumption by providing feedback on energy usage for each building, raising awareness about the Office Energy-saving Manual, and promoting practices such as turning off unnecessary lighting, optimizing air-conditioning temperatures, and reducing elevator usage.

Utilization of Internal Carbon Pricing

When considering investments such as adopting energy-saving equipment or upgrading existing equipment to high-efficiency models, we are experimentally implementing

internal carbon pricing.

We are consistently conducting evaluations of facility investments to restrain CO₂ emissions associated with business activities. In FY2022, we identified comprehensive company-wide measures for reducing CO₂ emissions and assessed the investment payback period, considering the CO₂ reduction effects. Using a carbon price range of 3,000 to 15,600 yen per tonnes* as a reference, we evaluate implementation with priority given to high-efficiency, cost-effective, low-carbon initiatives, and have newly formulated investment plans for the enhancement of efficiency in city gas production facilities and the expansion of LED lighting in office buildings.

* Reference was made to the APS Scenario 2030 prices in the International Energy Agency (IEA) World Energy Outlook 2021.

TOPIC

Participation in GX League

In March 2022, our company endorsed the "GX (Green Transformation) League Basic Concept" advocated by the Ministry of Economy, Trade, and Industry

We are also participating in the full-scale activities of the GX League that began in FY2023.

Through our participation in the GX League, we will steadfastly advance efforts to reduce greenhouse gas emissions and collaborate with customers and partners, and work to bring about a sustainable society.



City	Operated by Toho Gas	Operated by Companies in which Toho Gas Holds an Equity Stake
Nagoya City	<ul style="list-style-type: none"> ·Imaike ·Sakae 3-chome north ·Nagoya Station south ·Sakae 3-chome ·Chiyoda ·Higashi Sakura ·Ikeshita ·Johoku ·Minato AQLS 	<ul style="list-style-type: none"> ·JR Central Japan Nagoya Station area ·Nagoya Station east ·Quality Life 21 Johoku ·Sasashima Live 24 ·JR Central Japan Nagoya Station north
Komaki City	<ul style="list-style-type: none"> ·Komaki Station west 	
Tokoname City		<ul style="list-style-type: none"> ·Chubu Centrair International Airport

Resource Recycling

Basic Concept

Due to the increase in resource usage amounts caused by the rise in the global population and economic growth, there are concerns that problems such as depletion of water and other natural resources and marine pollution by waste materials will become more serious.

Based on the Environmental Action Principles and Environmental Action Guidelines, Toho Gas Group has set Environmental Action Goals in the area of Resource Recycling, and is promoting the 3R (reduce, reuse and recycle) toward the reduced consumption of natural resources and the effective use of recycled resources through efforts that include zero emissions from industrial waste at city gas plants, recycling the waste generated from gas pipeline work, and the promotion of paperless business.

Initiatives to Reduce Waste Materials and to Reduce Resource Usage Amounts in Our Business Activities

Industrial waste at city gas plants - Toward the achievement of zero emissions

At city gas plants, we have been working since FY2008 to achieve zero emissions (reduction of the final disposal rate for waste materials). As an environmental action goal, we have set a target of achieving a final disposal rate of 1% or less and have continued our activities accordingly.

For waste materials at plants, recycling of the sludge and mixed waste materials at seawater intake ports is an issue, and these account for 80% of the final disposal rate. For this sludge, we turned our attention to "graded recycling," which creates stable fluidization treatment soil by separating sludge by grain size into slurry, sand, silt, and cohesive soil and recompounding, and improved the recycling rate.

Additionally, for mixed waste, we have diligently sorted and separated materials to enhance the recycling rate.

Recycling of Industrial Waste Materials Produced in Gas Pipeline Construction and Reduction of Amount of Natural Mountain Sand Used

Gas pipeline construction generates industrial waste in the form of asphalt and concrete lumps, which is classified as rubble, and used polyethylene pipes, which is classified as waste plastic. In an effort to limit asphalt concrete lumps and excavated soil, we have introduced shallow-layer pipe installation*1, the trenchless pipe installation method*2, and the pipe rehabilitation and repair construction and installation method*3, and promoted the use of temporary filling material*4 in construction requiring re-excavation. In FY2022, we reduced the amount of waste generated by 25% compared with conventional construction methods.

Furthermore, excavated soil is processed and recycled at the Soil Modification Centers, aiming for resource recycling as backfill material for gas pipeline construction. This effort has reduced the amount of external outflow of excavated soil by 75% compared to conventional methods. Additionally, in conjunction with the use of recycled crushed stone, the amount of natural mountain sand and natural crushed stone used in gas pipeline construction has been reduced by 10%

from the amount used in conventional methods.

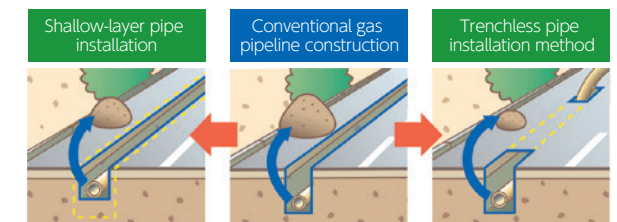
By reducing the new extraction of mountain sand, this initiative also contributes to minimizing the impact on ecosystem biodiversity.

Almost the entire volume of asphalt and concrete lumps is recycled a reclaimed asphalt mixture (pavement material). Used polyethylene pipes are recycled as raw materials for components that secure gas pipes and other uses. As a result, a recycling rate of 99.7% for industrial waste generated from gas pipeline construction has been achieved.



Trenchless pipe installation method

- *1 Refers to burying a gas pipeline in a roadway at approximately half the conventional depth.
- *2 Construction method of drilling at both ends of the construction area and pulling the gas pipe underground
- *3 Construction method for repairing and renewing gas pipe from the inside
- *4 Polystyrene blocks used as temporary backfill



Recycling of Used Gas Equipment and Other Materials

The Toho Gas Group has organized a system to collect used gas equipment and packing materials from customers, facilitating efficient resource recycling. In FY2022, this resulted in collection of 1012.7 tonnes of used equipment and 39.7 tonnes of packing material. Results for recycling of resources subject to the Containers and Packaging Recycling Act were 4.2 tonnes of plastic containers and packaging and 0.3 tonnes of paper.



Recycling used gas equipment

Reduction of waste materials and recycling resources

We are working to recycle general waste at our offices. Since 1996, we have been consistently devoting efforts to collecting waste paper, which accounts for the majority of waste generated. While the Toho Gas Group has long been advancing paperless practices, starting from FY2020, we have significantly increased the proportion of electronic approvals for business processes and further promoted paperless practices in major meetings and many other scenarios.

For kitchen waste from cafeterias, we are promoting recycling into fertilizers.

Initiatives by Subsidiaries

Toho Real Estate Co., Ltd. had been placing amenities in every room of the Howa Seminar Plaza training facility with accommodation, but has changed to amenity bar style to provide amenities to only those that need them in response to the Act on Promotion of Resource Circulation for Plastics that went into effect in April 2022. Steps have also been taken to reduce plastic use, such as by switching from plastic straws to paper straws at the Cherry bakery cafe at Minato AQUUS.

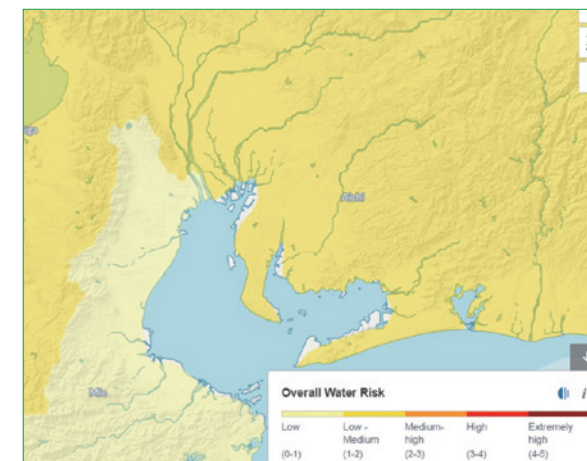


Amenity bar at Howa Seminar Plaza

Responses for Water Risks (Water Security)

Evaluation of the Effects of Water Stress

The Toho Gas Group uses water resources for various purposes, such as gasification of LNG, and is aware of the importance of the effective utilization of water and evaluates the water stress and impact of the risk. We conduct evaluations using Aqeduct, which is issued by the World Resources Institute (WRI) every year, and confirm that the areas where the Group's major places of business and factories are located all have low water stress.



Taken from the Aqeduct Water Risk Atlas

Compliance with Regulation Criteria

In FY2022, we complied appropriately with regulations and agreements on water, and have experienced no accidents having major environmental impact, or any legal violations.

The seawater used as a heat source for gasification of LNG at city gas plants we design manufacturing facilities to ensure the temperature difference between water intake and water discharge falls within a certain range with the aim of reducing our impact on ecosystems.

Management of Water Usage Amounts and Discharge Amounts

We assess the amount of water used generally in the form of municipal potable water in offices, the amount of industrial water, and the amount of well water, and work to conserve water used. For discharged water, we assess the amount of water discharged at discrete discharge sites and manage the quality of water discharged in accordance with laws and regulations concerning discharge as well as ordinances of local governments.

Biodiversity Conservation

Basic Concept

Our daily lives and business activities are supported by the natural resources, and if the biodiversity that is its basis is lost, the lives of people and company sustainability will be impacted in a major way.

Conservation of regional ecosystems is regarded as a critical issue affecting the Group's continuing development, and we are promoting activities with consideration for biodiversity, including the establishment and maintenance of biotopes, forest conservation, and other activities.

Initiatives in Business Activities

— Biotope Establishment

In 2000, we established a 7,500-m² biotope at the Chita-Midorihamma Works, and in 2010 we established the 600-m² Biotope Place at the Gas Energy Exhibition Hall. We also installed an 800-m² biotope at Group-incepted Minato AQUUS. In this way, we are working to conserve ecosystems, including rare local species, and to nurture endemic species. We are also having surveys of plant and animal species conducted by professional contractors.



Biotope at Chita-Midorihamma Works

— Eradication Activities for Invasive Species

We are conducting eradication activities for Argentine ants at our Technical Research Institute.

The Argentine ant is a species native to South America and has been specified as a "designated invasive alien species" under the Act on the Prevention of Adverse Ecological Impacts Caused by Designated Invasive Alien Species. We cooperate with the activities of Tokai City in Aichi Prefecture, and conduct monthly eradication efforts.

— Participation in the Inochiwotsunagu ("Connecting Life") Project

The Inochiwotsunagu Project is an initiative led by a student executive committee, in collaboration with 12 companies, administrations, experts, and NGOs in the Chita Peninsula coastal area. The project focuses on creating and conserving ecosystems in corporate green spaces and nurturing students as future leaders in building a sustainable society.

Toho Gas is actively participating in this project, working in collaboration with local students to engage in activities such as maintaining green spaces and biotopes and conducting eradication of invasive species and wildlife monitoring surveys at city gas manufacturing plants, including the Chita Midorihamma Works.

— Conservation Activities Abroad

Toho Gas has been a member of the Keidanren Committee on Nature Conservation since FY2014. Through the committee, we are providing aid for nature conservation activities by environmental NGOs in Indonesia and elsewhere around the world.

— Endorsement of the Keidanren Declaration of Biodiversity and Action Policy

Toho Gas endorsed the Keidanren Declaration of Biodiversity and Action Policy in July 2020. The company's endeavors are congruent with this declaration and action policy, and we will continue to devote effort accordingly.

TOPIC

Recognized as a certified enterprise under Aichi Biodiversity Company Certification Program

In November 2022, Toho Gas was recognized by Aichi Prefecture as a certified enterprise under Aichi Biodiversity Company Certification Program.

Aichi Prefecture has been implementing this certification program since FY2022 to promote biodiversity conservation efforts by companies and spread excellent practices within the prefecture. Toho Gas became one of the first companies to receive this certification. The recognition highlights our exceptional contributions to biodiversity conservation.



Aichi Biodiversity Company Certification ceremony

SDG Contribution Activities in the Local Community

In our efforts to contribute to sustainable development goals (SDGs) in the local community, we collaborate with various municipalities, citizen groups (NPOs), companies, educational institutions, and others to implement activities.

Activity	Cooperating partner	Description
Toho Gas Forests	Aichi Forest Office, Mitake in Gifu Prefecture, Odai in Mie Prefecture, Local Forest Associations, Etc.	Toho Gas has established Toho Gas Forest Odai, Toho Gas Forest Mitake, and Toho Gas Forest Seto in the three-prefecture Tokai region, where tree planting, thinning, clearing, and landscape maintenance activities are carried out by Group employees and family volunteers. We collaborate with local forest associations for some tasks, promoting activities with the support of the local community.
Satoyama Conservation	Nagoya Higashiyama Forest Conservation Group	In Higashiyama Forest in the City of Nagoya, which Japan's Ministry of the Environment has selected as an important satochi-satoyama with respect to biodiversity cooperation, we took part in activities with an NPO engaged in satoyama conservation, with Group employees and their family members carrying out thinning and other satoyama conservation efforts on a volunteer basis.
Biodiversity Education in Courses at Nagoya Open University of the Environment	Nagoya Open University of the Environment Center for Environmental Creative Studies	As part of Nagoya Open University of the Environment's registered courses, we held biodiversity courses for families, middle and high school students, utilizing the Biotope Plaza at the Gas Energy Exhibition Hall.
Environment Day Nagoya	Nagoya City	We have sponsored and participated in Environment Day Nagoya events organized by the City of Nagoya since the year 2000. Through these events, we conduct awareness activities related to the 3Rs (reduce, reuse, recycle), CO ₂ reduction, and biodiversity, promoting our ESG management and SDGs initiatives.
Green Curtains	Nagoya City	In FY2022, we donated 500 bags containing seeds of the goya (bitter melon) and 728 goya (bitter melon) seedlings to the City of Nagoya, which were distributed to citizens at environmental events such as Environment Day Nagoya.
Higashiyama Botanical Gardens Hana-ippai "Many Flowers" Project	City of Nagoya Higashiyama Botanical Gardens	We have participated in preparing corporate flower beds in the Botanical Gardens since activities began in FY2008, with flower seedlings planted by employees and their families on a volunteer basis three times a year.
Osampo de Ikimono Mikke "Discover Living Creatures While Walking"	Aichi Prefecture, Forest Nature School	We have been sponsoring environmental events on the theme of encountering nature held by Aichi Prefecture and an NPO at Expo Memorial Park since FY2011. We provide support for planning and operation.
Cleanup Activities (Local Cleanup Projects)	Individual Offices, Local Governments etc.	As part of our community contribution efforts, Toho Gas Group business sites engage in cleanup activities, particularly during June, which is Environment Month.



Tree-planting at Toho Gas Forest Odai



Nagoya Open University of the Environment Biodiversity Course



Exhibition booth at Environment Day Nagoya



Osampo de Ikimono Mikke