

Invisible assets

Tokyo Gas Group's Invisible Assets

Achieving sustainable growth by refining the invisible assets that underpin our GPS×G (Gas & Power + Service × Global) strategy



Safe and stable energy supply infrastructure



Relationships of trust with business partners



Relationships of trust with 11 million customers



Digitalization and technology development (innovation) capabilities



Human resources



ESG Initiatives

(Environmental, Social, Governance)

Initiatives for achieving the realization of a low-carbon society

The Tokyo Gas Group contributes to the creation of a low-carbon society both in Japan and around the world by promoting and expanding the widespread use of natural gas, which is the cleanest of all fossil fuels.

As the Paris Treaty and other factors drive environmental policy, we will continue to enhance our low-carbon initiatives, such as by increasing investments in renewable energy-based power generation and future technologies.

Reduce CO₂ emissions on the customer side

- Promote introduction of natural gas and/or change of fuel type for customers in areas without access to city gas
- Develop and promote widespread use of high-efficiency equipment (ENE-FARM fuel cell and cogeneration systems, etc.), and provide solutions that make use of them
- Expand the way of use for natural gas (LNG bunkering: fuel supplies for ships)

Promote "smart" energy

- Promote optimization of energy supply and demand (gas, electricity, heat etc.) using regional energy networks
- Contribute to furthering the development of a low-carbon society by creating smart energy networks (including demand response utilizing distributed power sources and storage cells, etc.)

Development of renewable energy sources

- Approach renewable energy sources (such as photovoltaic and wind power generation) with a sense of urgency, including alliances with relevant companies
- Aim to achieve a power generation capacity of 0.4 million kW from renewable energy sources by the early 2020s
- Operate a business model that also includes the use of renewable energy sources

Global expansion

- Expand natural gas infrastructure and utilization technologies cultivated in Japan to overseas markets, to contribute to low-carbon society and sustainable growth on a global scale

Future technologies (hydrogen, etc.)

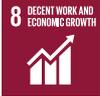
- Promote development of technologies using hydrogen (ultra-efficient fuel cells with power generation efficiency of 65%, etc.)
- Promote the introduction and use of technologies using hydrogen (e.g. introduce fuel cell vehicles (FCV) for corporate fleets)
- Consider hydrogen production and transportation-related technologies

— CSR priority issues (materialities) and contributing to the achievement of Sustainable Development Goals (SDGs) —

The Tokyo Gas Group conducts a full range of business activities in the LNG value chain (from procurement, transportation, city gas production and supply, to power generation and energy solutions) to ensure the safe and stable supply of energy to our customers; the majority of

whom reside in the Greater Tokyo Area. We also apply our domestic and global experience and know-how to efforts such as constructing energy infrastructure in Southeast Asia. Through our business activities, we aim to contribute to the achievement of the Sustainable Development Goals (SDGs).

Priority issues (materialities) according to their importance to stakeholders and the business

Priority area	Priority issue (materiality)	Relationship with SDGs
Strategy	Stable supply of energy both in Japan and overseas	   
	Robust energy platform	  
	Conversion of society overall to a low-carbon society through the supply of energy	 
Infrastructure	Creating an organization full of energy and vitality Building good relationships with stakeholders Fulfilling our public duty as an energy company	

— Governance —

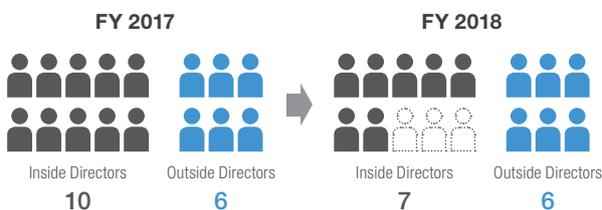
To ensure sustainable growth, our Board of Directors involves itself in the decision-making processes for business strategies under GPS×G in order to promote the independent growth and development of each business, and also conducts appropriate monitoring.

In fiscal 2018, we reduced the number of inside members in our Board of Directors and Audit & Supervisory Board by three in comparison with the previous year (from 10 to 7), and made changes to further increase the proportion of outside members.

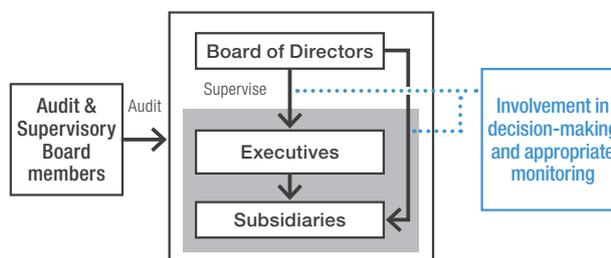
Moving forward, we will continue to implement reforms with the aim of building a better, more appropriate governance system, based on external trends and other factors.

Corporate governance ▶ P37

Changes to the makeup of our Board of Directors and Audit & Supervisory Board



Perspectives for considering governance



Invisible assets



Safe and stable energy supply infrastructure

Contributing to the achievement of Sustainable Development Goals (SDGs)



— Diversifying LNG procurement and achieving efficient and stable transportation of LNG —

Natural gas reserves are abundant in various parts of the world. The Tokyo Gas Group was among the first to notice the potential of natural gas, and in 1969 we became the first in Japan to import LNG from Alaska. To achieve stable procurement of LNG, by seeking to diversify our procurement sources (resource suppliers), we are working to ensure that interferences to LNG procurement do not arise, even in cases where there are evident geopolitical risks such as disasters or human conflicts. We also operate stable transportation of LNG through the efficient deployment of ships (including ships owned and managed by Tokyo Gas).

■ Diversifying procurement sources

We procure LNG from 14 projects in 6 countries, including the United States as well as Southeast Asia and Australia

■ Ensuring stable transportation of LNG

We utilize our own fleet of 11 ships, owned and managed by Tokyo Gas

— Safe and secure production and supply facilities —

We import LNG by tankers and store it in tanks at LNG terminals. It is then reconverted into gas and adjusted in calorific value to produce city gas, and supplied to 11 million customers via our pipeline network. We endeavor to operate our LNG terminals safely, based on almost half a century of experience and knowledge accumulated since we introduced LNG to Japan for the first time in 1969. Our LNG terminals and pipeline network are a crystallization of our latest knowledge and technologies, and have a high level of resistance to earthquakes. Since city gas is made by conversion from LNG to natural gas at an LNG terminal and then distributed via pipeline, there is no energy conversion loss or transport loss to the point of consumption.

■ Four LNG terminals

(Three in Tokyo Bay, one in Northern Kanto)

■ Pipeline network with total length of over 60,000km

■ High and medium-pressure gas pipelines with a high level of resistance to seismic activity, even in the case of major earthquakes such as the Great Hanshin-Awaji (Kobe) Earthquake, or the Great East Japan Earthquake



Relationships of trust with business partners

In this period of transformation of the energy industry, namely, the full deregulation of the electricity and gas retail markets, we are exchanging information broadly with not only electricity and gas companies but also players in various industries. Moreover, we are promoting cooperation in areas where we foresee mutual synergies such as gas resource procurement and the electricity business (power plant construction and electricity sales).

LNG Value Chain

Using technology and know-how concerning the total energy business, we provide energy solutions to customers who are expanding business in Southeast Asia and North America, and contribute to infrastructure-building.

PetroVietnam Gas

Signing of a Memorandum of Understanding to conduct a feasibility study on energy solution businesses

PT Pertamina

Signing of a Memorandum of Understanding with Pertamina towards Forming a Strategic Alliance -Cooperation for Development of LNG Value Chain in Indonesia-

Petronas LNG Ltd.

Signing of a Memorandum of Collaboration

PT Miura Indonesia

Signing of a Memorandum of Understanding on Mutual Cooperation in Indonesia

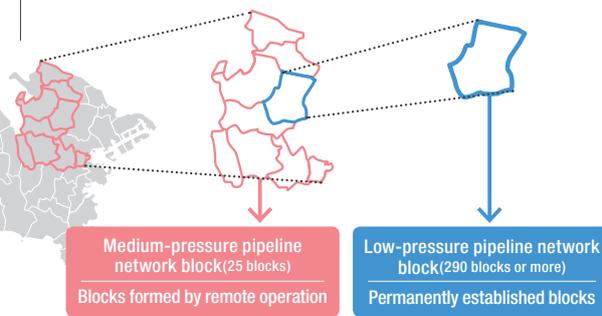
Safety know-how and measures to prevent earthquake disasters

In order to constantly deliver natural gas safely and steadily to 11 million customers, we are continually developing human resources involved in safety.

It is indispensable to have human resources that are equipped with advanced specialized skills in facility design, construction, and maintenance, as well as decision-making capabilities that enable the reliable execution of gas supply and safety responsibilities even in times of emergency. The trust of customers that has been earned as a result of safety-related expertise developed over the course of our long history, and its continuation, is one of our greatest strengths.

We have also developed a disaster-readiness system, which protects entire local areas by automatically cutting off the supply of gas when it detects an earthquake that poses the possibility of affecting our pipeline network and/or other structures. In order to minimize the impact of supply stoppages, we subdivide our supply areas, enabling us to stop the supply of gas remotely, in block units, depending on the extent of the damage.

- 130 years of accumulated safety know-how
- Supply area monitoring using around 4,000 seismometers (Si sensors)
- Subdivision of units for supply stoppage in the event of an earthquake or other disasters (25 large blocks, further subdivided into 290 smaller blocks)



Facilitating safe use of gas

Periodic Safety inspections We conduct periodic safety inspections of gas-related equipment and facilities for all customers, as frequently as required by law. We visit customers to conduct inspections for gas leaks on customer premises (as a general gas pipeline operator), and to examine gas appliances and supply and exhaust equipment (as a gas retailer).

Safety Command Center When we receive a report of a gas leak from a customer, it is immediately forwarded to our dedicated Safety Command Center. The center asks questions to confirm the details of the situation, provides safety advice to the customer, and requests Gaslight 24 dispatch in response. The center is also able to contact the fire service, police and other emergency services via a hotline.

Gaslight 24 Gaslight 24 are emergency dispatch bases for responding to gas leaks and other incidents in our gas pipeline network and customer gas equipment. When a report is received, Gaslight 24 personnel respond swiftly with an emergency dispatch, even on holidays or at night. Our emergency vehicles are also equipped with mapping systems that can instantly display the necessary sections of our massive pipeline diagrams, enabling them to respond swiftly and effectively to any incident.

- 24-hour emergency dispatch to respond to gas leaks and other incidents
- 49 bases manned by approximately 600 professional gas leak responders



Raw materials procurement

Ensure flexibility and realize cost-competitive LNG procurement by enhancing and expanding alliance with LNG players in Japan and overseas.

- Kansai Electric Power
- Kyushu Electric Power
- Korea Gas Corporation
- CPC Corporation, Taiwan
- Centrica, U.K.

Power Generation

Expand competitive power sources.

- JXTG Energy (Kawasaki Natural Gas Power Station)
- Showa Shell Sekiyua (Ohgishima Power)
- Kobe Steel (KOBELCO) (Moka Power Station)
- Idemitsu Kosan and Kyushu Electric Power (Chiba-Sodegaura Energy)
- Shizen Energy (Development of photovoltaic power generation)

Electricity Sales

Expanding electricity sales to high-voltage and extra-high-voltage customers

- Tohoku Electric Power (Synergia Power)
- NTT Facilities (Ennet)
- Osaka Gas (Ennet)

Expanding electricity sales to low-voltage customers

- Business alliances with 21 companies including gas operators which are our city gas wholesale customers (approx. 630,000 city gas customers)
- Business alliances with 27 LP gas sales companies (approx. 310,000 LP gas customers)
- Making progress with talks regarding the possibility of sales through partnerships with companies in housing, construction, equipment, telecommunications, information services and other industries.

Invisible assets



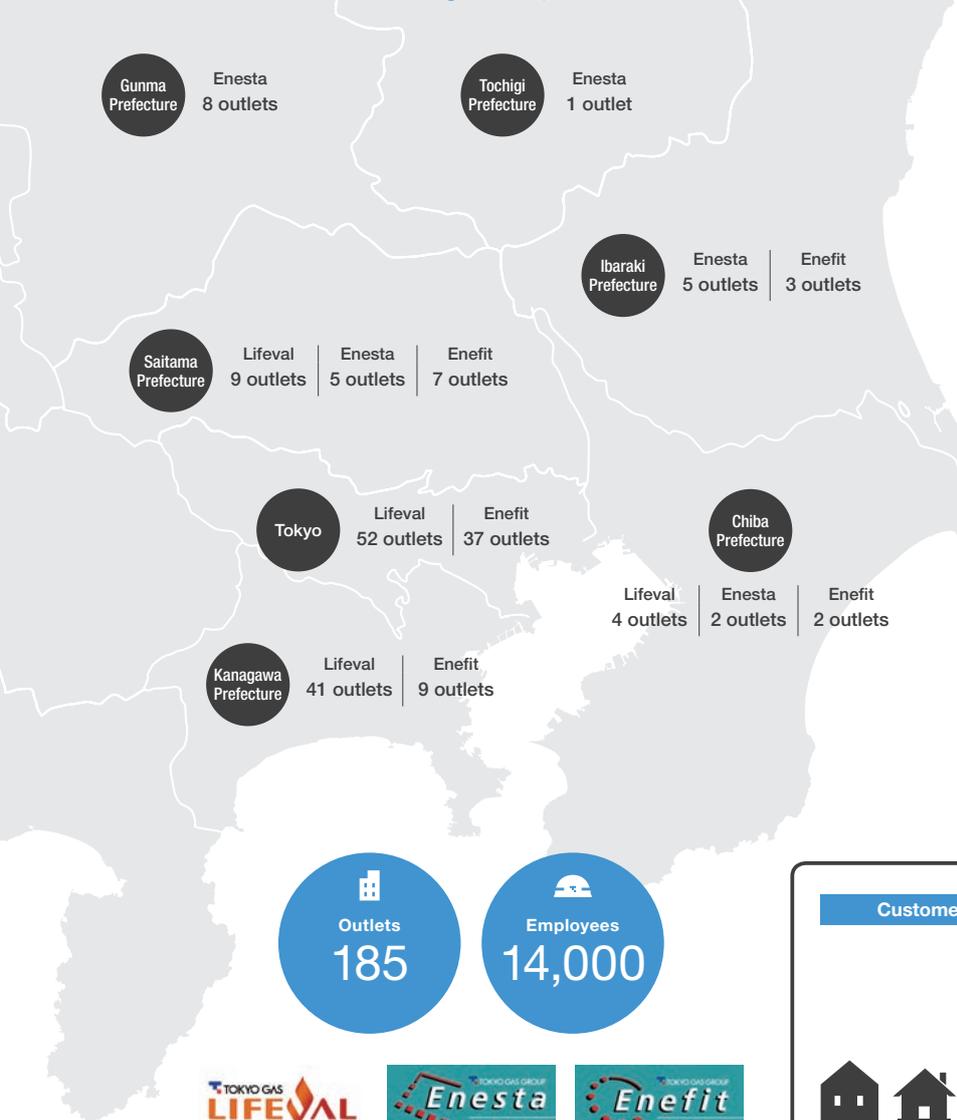
Relationship of trust with 11 million customers

Our bonds and relationships of trust with our 11 million customers, developed over the course of the past 130 years, are our greatest strength. Tokyo Gas Lifeval, Enesta, and Enefit have 185 outlets and over 10,000 employees who act as “the face of Tokyo Gas” in each local region, providing one-stop services and support to ensure comfortable daily lifestyles for customers in local communities.

Contributing to the achievement of Sustainable Development Goals (SDGs)



The face of Tokyo Gas, across the entire Kanto area



Outlets
185

Employees
14,000



We believe strong relationships of trust with customers based on this community-based sales organization is the driving force that has enabled us to maintain our position as No. 1 new electric power market entrant in 2017, the second year after entry. In the retail gas business, too, which marks its second year since full deregulation, we are determined to augment and strengthen our relationships of trust with customers.



Interface with the community

Customers

↔

Lifeval / Enesta / Enefit

- Help in gas and electricity planning
- Gas tap opening and shutoff at the time of moving
- Meter reading
- Safety inspection and repair of gas appliances and equipment
- Sales and installation of gas appliances and housing appliances
- Gas plumbing
- Design and installation of plumbing equipment and air conditioners
- Home improvement etc.



Digitalization and technology development (innovation) capabilities

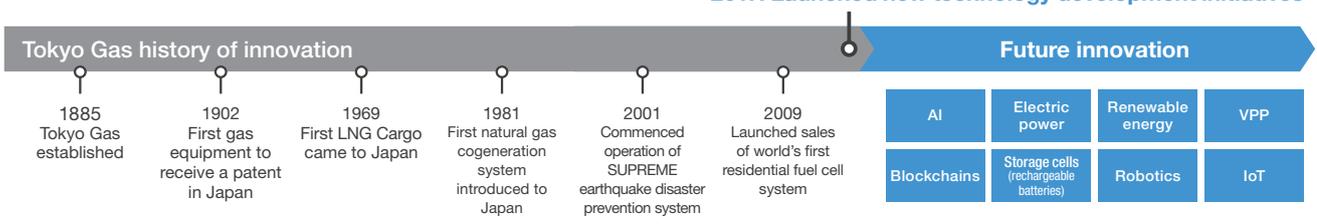
Contributing to the achievement of Sustainable Development Goals (SDGs)



Moving forward, we will shift from our previous R&D focused on gas energy to an open innovation style of R&D focused on a broad range of innovative energy technologies.

In order to improve efficiency and save labor in our existing business operations, develop new products and services, and create new business, we will gather information on a broad range of innovative energy technologies while also collaborating with progressive universities and venture companies both in Japan and overseas, to absorb new technologies and create innovation.

The history and future of our innovation



Digital innovation

Digital innovation domain **1**
Open innovation



Technological development

| Low-carbon society |
| Hydrogen-oriented society | Smart society |
| Earthquake disaster prevention and stable supply |
| Comfortable, convenient and secure living |

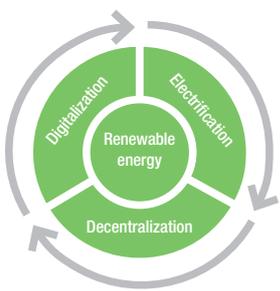
Digitalization initiatives

We are effectively introducing digital technologies such as IoT, AI, mobile devices, and technologies utilizing big data, while at the same time drawing on advantages such as our technical capabilities and sales network that is closely linked to local communities.

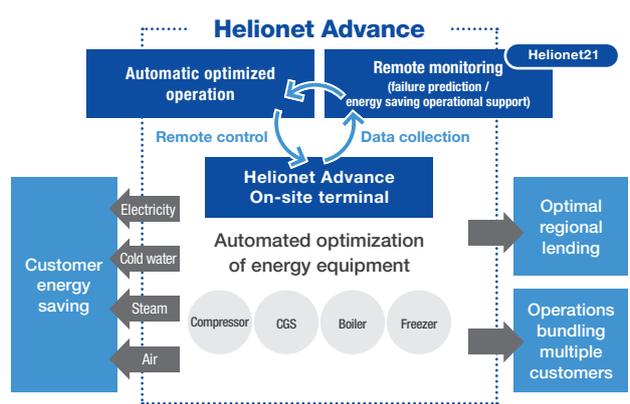
- | Production, Generation & Distribution | Sales & Services |
|--|--|
| <ul style="list-style-type: none"> Predict and detect failures at LNG terminals and power generation plants, and increase efficiency of operation and maintenance work Stop and restart gas supply to zone pressure regulators, etc., by remote operation using an earthquake disaster prevention system Optimize efficiency of distribution utilizing LP gas usage data gathered using frequent remote metering technology | <ul style="list-style-type: none"> Provide optimal services for our customers based on the results of digital marketing Increase the sophistication of our energy management system (to achieve automatic optimized operation of energy equipment by remote control) Improve quality of service and achieve labor-saving benefits for operators by the introduction of voice-recognition systems, etc., in our call centers |

Creating innovation through our Silicon Valley location **1**

In December 2017, we established Acario Ventures in Silicon Valley, and launched a program of activities to assimilate innovative technologies and business models from around the world.



Digitalization for energy management **2**



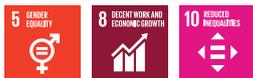
Invisible assets



Human resources

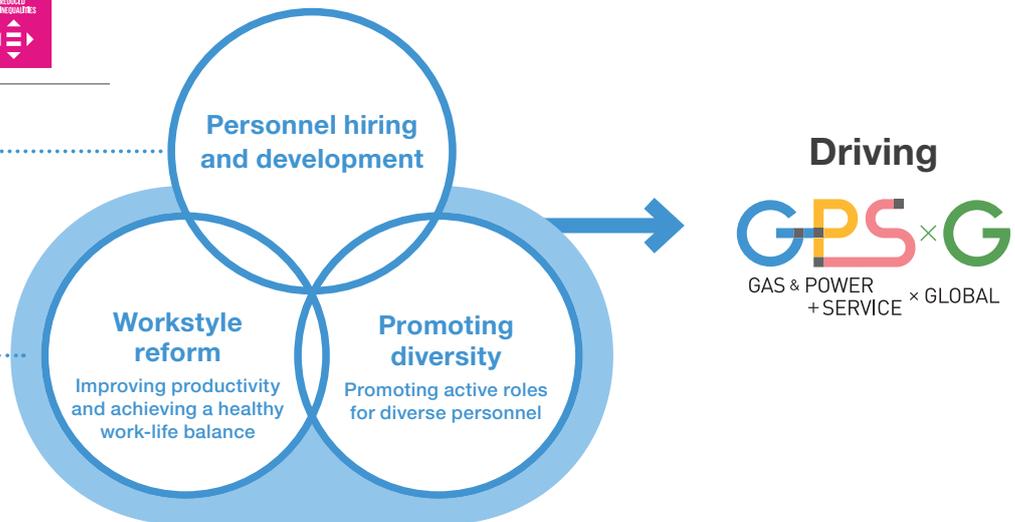
Because we see human resources as the underlying source of creation of corporate value, the Tokyo Gas Group is striving to develop employees who have high-level expertise and integrity, and respond flexibly to changes in society and the business environment. In line with this policy, we are working to implement workstyle reforms and promote diversity, to ensure maximum effective utilization of the knowledge, skills and experience of personnel working in the Tokyo Gas Group.

Contributing to the achievement of Sustainable Development Goals (SDGs)



Strengthening personnel to support growth

Creating an environment conducive to maximizing the effective use of knowledge, skills and experience



Personnel hiring and development

We are engaged in the hiring and development of human resources with a strong sense of duty and responsibility, who can take the initiative to think and act for themselves, and who can grow while cooperating with their fellow colleagues; who can become core personnel and act as a strong driving force for business operations in a diverse range of fields.

Hiring personnel with high levels of expertise	Strategic shift to growth domains	Developing business leaders
In addition to hiring new graduates for specific job types (in humanities, sciences and the professional domain), we also engage in flexible hiring of experienced and highly-specialized mid-career personnel.	In addition to our gas business, we also prioritize assignment of personnel to strategically-important fields such as our electric power and overseas business operations (we have increased numbers of personnel assigned to these businesses by approximately 50% in comparison with FY2015.) In this way, we are promoting growth and expansion in a diverse range of fields.	We train business leaders who will lead the Tokyo Gas Group in the future, with a training program that focuses primarily on development through a wide range of on-the-job training (OJT) experiences gained by means of transfers and rotations, combined with additional off-the-job education and training (OFF-JT).

Hiring, fostering and placing of personnel who support promotion of "GPS x G"



Workstyle reform (Improving productivity and achieving a healthy work-life balance)

In order to enable each and every one of our employees to work energetically and make maximum effective use of their abilities, we are working proactively to rectify and reduce long working hours, and to implement workstyle reforms with awareness of "the value of time," which we regard as important issues for management involvement.

Specific initiatives

- Promoting workstyles with awareness of the value of time**
 Prohibiting overtime work after 20:00 (as a general rule) and encouraging employees to declare in advance what time they will be leaving work, etc.
- Promoting workstyle reform project "Work with Enthusiasm"**
 - Eliminating restrictions on working location with "Work Anywhere" (including at home, or on the move, etc.)
 - Working to create workplaces that enable innovation to occur
 - "Work in a Free-form Animated Manner" (Online video conferencing, office reforms, etc.)
 - Promoting automation / mechanization using ICT, and more sophisticated use of data (utilizing RPA, etc.) with "Work to Be Entrusted"

Multi-purpose space in the new office of Tokyo Gas Engineering Solutions





Promoting diversity (Promoting active roles for diverse personnel)

Top Management Commitment

The Tokyo Gas Group is working to promote diversity (promoting active roles for diverse human resources), with a view to future growth and advancement. Even in the midst of this great competitive age of energy, the Group aims to grow and advance as a global total energy corporation by coming to terms with every one of its customers, having them choose Tokyo Gas products and services, and contributing to creation of a better society and secure and comfortable lifestyles.

One important issue for the entire Group to tackle in order to achieve this, is the promotion of diversity. In order to satisfy the continually diversifying needs of each and every customer, it is essential for us to create an environment in which every Group employee can take an active role and work as part of a team, making maximum effective use of his or her knowledge, skills and experience.

Moving forward, we will continue working proactively to develop and enhance more schemes for supporting this ideal, to foster greater employee awareness and create a better corporate culture within our organization, and aim to create a corporate group in which all employees can take an active role, regardless of their gender, age, presence or absence of disabilities, employment type, nationality, sexuality, gender identity, or any other such attributes.

Specific Initiatives

Promoting empowerment of women in workplace	<ul style="list-style-type: none"> ■ 2016: First female executive officer appointed ■ 2018: First female senior executive officer appointed ■ Almost 100% return-to-work rate for female employees returning from childcare leave ■ Almost no difference in gender in terms of average years in service of the company
Employment of people with disabilities	<ul style="list-style-type: none"> ■ Employment rate of 2.35%, exceeding the mandatory rate (as of June 2018) ■ Established a liaison committee to promote employment of disabled people as a group ■ Working to create safe and comfortable working environments
Career development support for employees in their 50s and over	<ul style="list-style-type: none"> ■ Established the “Grand Career System” to support career development for employees in their 50s and over, through training sessions and interviews with career consultants, etc.

Occupational safety and health

Health and safety is the essential basis for the existence of any company, in protecting the lives and health of their employees. The Tokyo Gas Group is working to reduce risks with a view to eliminating work-related accidents, and to maintain and improve the health of its employees through mental health initiatives and measures to prevent lifestyle-related illnesses. In terms of health management, we work to ensure that 100% of our employees take regular health checkups, and make effective use of early-stage detection of disease outbreaks and external healthcare institutions.

External Evaluation	<p>Selected as a Nadeshiko Brand</p> <p>Tokyo Gas was selected as a corporate brand that is appealing in terms of its proactive efforts to encourage and empower women.</p> 	<p>Granted Kurumin certification</p> <p>Tokyo Gas was certified by the ministry of health, Labour and Welfare (MHLW) as a company that has formulated an action plan, achieved targets and met certain criteria in accordance with the Act on Advancement of Measures to Support Raising the Next Generation of Children.</p> 	<p>Selected as a Health & Productivity Stock</p> <p>Tokyo Gas was selected as a Health & Productivity Stock, as a company that considers and strategically approaches employee health management from a corporate management perspective.</p> 
---------------------	--	--	--

Basic Policy Regarding Promotion of Diversity

- 1 Realize diversity in working styles, and productivity enhancement**
 We aim to achieve the realization of an organization (with diverse working styles and increased productivity) in which every person accepts each other's working style while enhancing productivity.
- 2 Promoting empowerment of women in workplace**
 We regard promoting the success of women as the beginning of the promotion of diversity, and will continue to undertake this proactively.
- 3 Diversity Promotion Team**
 We will establish a “Group Diversity Promotion Team” and promote diversity throughout the entire group, in an integrated manner together with management.

