Basic Policy

The Tokyo Gas Group, through its business, is closely aligned with the energy needs of local residents. In light of the growing demand to develop communities that exist in harmony with the environment and are more resilient to disasters, we will work hand in hand with those residents to raise awareness of energy, the environment and disaster prevention. Firmly upholding the spirit of serving the community as a good corporate citizen, we will maintain our relationship with local residents and strive to create a prosperous society.
Building Communities and a Way of Life that Is Safe and Secure

Why Is this Materiality?

- To contribute as an energy company to the development of disaster-resilient and more accessible communities toward creating a sustainable society.

FY2017 Performance and Evaluation

Criteria for evaluating KPIs

- Target achieved (100% or above)
- Target not achieved but performance improved from the previous fiscal year
- Target not achieved

Note: Qualitative indicators with no evaluation axis are assessed on the basis of whether progress has been made since the previous fiscal year.

<table>
<thead>
<tr>
<th>Target (CSR KPIs)</th>
<th>FY2017 Results</th>
<th>Evaluation</th>
</tr>
</thead>
</table>
| Strengthening initiatives to enrich society | • Constructed a Smart Energy Network in the northern district near Tamachi Station’s east exit.  
• Promoted smart networks by supplying energy in the Nihonbashi Muromachi areas, including town blocks.                                         | ○          |
| Provision of information on disaster prevention measures | • We shared information on disaster prevention through disaster preparedness events at our branches, branch offices and corporate museums in each region.  
• Organized the “Iza! Kaeru Caravan!” experiential event at the Gas Science Museum. This was a segment of the TOYOSU BO-SAI EXPO2017 for disaster preparedness of Tokyo’s Toyosu area.  
• Our service branches, branch offices and corporate museums in each region communicated information on disaster prevention through demonstrations on local disaster prevention drills and events.  
• We forged closer ties with local communities by enhancing self-help and mutual-help capabilities against disasters and by participating in environmental beautification activities, to contribute to the development of disaster-resilient and more accessible communities.  
• Held the HIIKU Festival 2017 at the Gas Science Museum as part of our interactive HIIKU fire education program aimed at enabling participants to survive a disaster and lead more comfortable lifestyles by learning about the characteristics of fire and the best way to handle it, as well its power and benefits.  
• Produced a new program related to emergency toilets as well as practical and creative tips for surviving a disaster. We also organized disaster preparedness events involving this | ○          |
Key Initiatives for FY2018 and Beyond

We reviewed the Tokyo Gas Group's key CSR activities and materiality in fiscal 2017. Please visit the related link to view the latest information on our materiality and CSR KPIs.

Link
▶ Identifying New Materiality

Building a Society and a Way of Life that Is Good for the Environment

Why Is this Materiality?

- To contribute as an energy company to the development of a sustainable global environment by taking action to address climate change, conserve biodiversity, and raise the environmental awareness and engagement of local residents.

FY2017 Performance and Evaluation

Criteria for evaluating KPIs

- ☐ Target achieved (100% or above)
- △ Target not achieved but results improved from the previous fiscal year
- ✗ Target not achieved

Note: Qualitative indicators with no evaluation axis are assessed on the basis of whether progress has been made since the previous fiscal year.

<table>
<thead>
<tr>
<th>Target (CSR KPIs)</th>
<th>FY2017 Results</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promotion of activities to raise energy and environmental awareness</td>
<td>- We engaged in activities to address climate change, conserve biodiversity, and raise the environmental awareness and engagement of local residents to contribute as an energy company to the development of a sustainable global environment.</td>
<td>○</td>
</tr>
<tr>
<td>Special classes taught by employees</td>
<td>- Examples of activities Participation in and cooperation with environmental events, the interactive Donguri (Acorn) Project, forest preservation activities, management of the Gas Science Museum, activities to support education in schools: 1,263 projects</td>
<td>○</td>
</tr>
<tr>
<td>Training for teachers</td>
<td>- Activities to support school education</td>
<td>○</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>FY2017</th>
<th>Total to date (from FY2002 to FY2017)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of classes</td>
<td>727</td>
<td>36,562</td>
</tr>
<tr>
<td>Number of participants</td>
<td>22,687</td>
<td>1,102,087</td>
</tr>
</tbody>
</table>
Key Initiatives for FY2018 and Beyond

We reviewed the Tokyo Gas Group’s key CSR activities and materiality in fiscal 2017. Please visit the related link to view the latest information on our materiality and CSR KPIs.

Link
▶ Identifying New Materiality

Enriching Our Life and Culture

Why Is this Materiality?

- To fulfill the Tokyo Gas Group’s responsibilities as a provider of services that are closely aligned with local needs by pursuing activities that leverage our strengths to resolve issues affecting everyday life and by supporting para sports and other activities to help make an inclusive society that is more diverse and fulfilling.

Performance in FY2017: Overview and Evaluation

Criteria for evaluating KPIs

- Target achieved (100% or above)
- Target not achieved but performance improved from the previous fiscal year
- Target not achieved

Note: Qualitative indicators with no evaluation axis are assessed on the basis of whether progress has been made since the previous fiscal year.

<table>
<thead>
<tr>
<th>Target (CSR KPIs)</th>
<th>FY2017 Results</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promotion of communication activities with local communities to enrich the quality of life</td>
<td>• Proposed solutions that make smart use of energy to create more fulfilling lifestyles and provided support to para sports and other activities to help make an inclusive society that is more diverse and fulfilling. • Examples of activities Participation in and cooperation with local events and volunteer activities, program of interactive activities (HIIKU fire education, food education, eco-cooking, cooking classes, etc.), support for youth education through sports (para sports, youth soccer and baseball workshops, etc.)</td>
<td>○</td>
</tr>
</tbody>
</table>

Key Initiatives for FY2018 and Beyond

We reviewed the Tokyo Gas Group’s key CSR activities and materiality in fiscal 2017. Please visit the related link to view the latest information on our materiality and CSR KPIs.

Link
▶ Identifying New Materiality
Concept of Social Action Programs

The Tokyo Gas Group works together with local communities to implement activities based on the following guidelines for creating a sustainable society.

Social Contribution Guidelines
1. Basic Policy
At the Tokyo Gas Group, we seek the attainment of a sustainable society where all people can live diverse, comfortable and fulfilling lives. To that end we will work together with local communities to resolve social issues as a company that people will continue to trust and make their first choice, engaging in those activities that Tokyo Gas Group is uniquely positioned to implement.

2. Three Key Fields
(1) Building communities and a way of life that is safe and secure
(2) Building a society and a way of life that is good for the environment
(3) Enriching our life and culture

Building Communities and a Way of Life that Is Safe and Secure

We are working together with local communities to build neighborhoods in which people can live safely and securely.

Promoting Earthquake Countermeasures at Disaster Prevention Events
Our branch offices and the company’s museums provide information on disaster countermeasures at disaster prevention events to enable us to efficiently coordinate with local authorities and communities in the event of a disaster.
For example, during disaster prevention drills organized by municipal governments, we explain how to reset gas meters that have shut off during an earthquake with a seismic intensity of 5 or more. We also provide other useful information to enhance the safety and security of our customers in their daily lives.
Since 2006, we have further developed our own disaster prevention events for families to enhance the disaster prevention capabilities of local communities. These events, called “Iza! Kaeru Caravan!”, are jointly organized with Plus Arts, an NPO, and held at our Gas Science Museum. In fiscal 2017, 5,990 customers visited these events and learned skills and knowledge that may be needed in the event of an earthquake.
Emergency Toilet Program for Preparation against Disasters
As an activity for protecting safety and security in daily life and saving lives, we began in fiscal 2017 to widen the reach of an emergency toilet program developed from our experience of restoring gas in disaster-affected areas. We hope to nurture self-help and mutual-help capabilities for survival of disasters in local communities.

Building a Society and a Way of Life that Is Good for the Environment
To contribute solutions for global environmental issues as an energy company, we work to raise energy and environmental awareness and suggest a variety of ways for people to save energy and protect the environment in their daily lives.

Eco-cooking
Eco-cooking is an environmentally sound activity that begins with the familiar daily activity of cooking.
Energy and resources are consumed throughout the process from production to tidying up. Eco-cooking\(^1\) puts into practice environmental considerations at each stage in which we are directly involved, from shopping and cooking to eating and cleaning up.

* \(^1\) Eco-cooking is a registered trademark of Tokyo Gas Co., Ltd.

Contributing to the Next Generation with Activities that Support School Education
Children are our future, which is why we are committed to teaching them about the importance of energy and the environment and helping to cultivate a “zest for life” as the goal of school education.
We organize training workshops for teachers that incorporate facility tours and group work to provide them with information about energy in general, including city gas, and environmental issues that they can use in their own instructional plans. We held 49 such workshops in fiscal 2017, with 610 teachers in attendance. Moreover, we have been dispatching Tokyo Gas employees to teach classes in schools since 2002. As of the end of March 2018, 36,563 classes had been held with a total of 1,102,087 children attending. Two of our visiting lecture programs, “How city gas is delivered to homes” and “Nurturing eco-eating (eco-cooking),” have been approved by the Tokyo Organizing Committee of the Olympic and Paralympic Games as part of the “Yoi Don! (Get set, Go!)” Tokyo 2020 educational programs, to support children in experiencing a better future. We also provide a variety of other educational resources, such as our “Odoroki! Naru! Gas World” (“The Amazing and Interesting World of Gas”) educational website that makes learning about energy and the environment fun for both children and grown-ups alike while motivating children to learn on their own. The Gas Science Museum makes learning about energy and the environment fun. It is used as a venue for out-of-school learning, and provides educational support by hosting school social studies trips and organizing workshops. In fiscal 2017, the museum received 266,448 visitors.

Diverse Partnerships

We are actively developing partnerships with government agencies, other firms, and outside organizations involved in environmental issues to raise environmental awareness in society as a whole.
Enriching Our Life and Culture

In light of the challenges posed by the aging population and its declining birthrate, we organize community-based activities for maintaining fulfilling lifestyles through a smart use of energy.

Cooking Classes to Promote the Benefits of Cooking with Gas

As a company that supplies the energy needed to cook day in and day out, we encourage people to fully benefit from the use of gas flame in everyday life. Launched over a century ago in 1913, our cooking class offers a variety of subjects tailored to different participants and needs, such as “Kids in the Kitchen,”*3 which teaches children how to cook for themselves in an environmentally friendly manner using all their five senses, and “La Cucina Espressa,”*3 which shows how gas is uniquely suited for quickly cooking multiple dishes at one time. All of our cooking classes incorporate an environmentally conscious approach to eating habits that we call “eco-cooking.”*3 These classes draw 80,000 participants each year. We also train instructors to teach eco-cooking, with a current total of about 3,700 instructors nationwide. Going forward, we will continue to enhance customer lifestyles and eating habits.

*3 Kids in the Kitchen, La Cucina Espressa, and eco-cooking are registered trademarks of Tokyo Gas Co., Ltd.

HIIKU Fire Education about the Power and Benefits of Fire

As part of our next-generation youth education initiative, we have been working since 2012 to expand our participatory HIIKU fire education program for children of elementary school age and older. The program is intended to give youngsters an opportunity to learn about fire and develop their ability to survive disasters and enrich their own lives by experiencing the various benefits of fire and the correct way to handle it. The program attracted 3,750 participants in fiscal 2017.

Creating an Inclusive Society by Supporting Sports

Supporting Para Sports to Build an Inclusive Society

Tokyo Gas became an official partner of the Japan Para-Sports Association (JPSA) in 2013 and began offering its support to para sports. Group employees have volunteered to organize sports competitions and held viewings and supporting events. We have also partnered with local governments to provide opportunities for experiencing para sports. We believe that these activities will cultivate a better understanding of people with disabilities.
and serve as an opportunity to develop a barrier-free mindset. Through the activities, Tokyo Gas aspires to realize an inclusive society in which people respect and support each other and lead vigorous lives in safety and comfort.

Donating Paccho Points to the Japanese Para-Sports Association

In March 2018, for the second consecutive year, Tokyo Gas donated an amount equivalent to the Paccho points collected by customers to the JPSA. Paccho points are awarded to customers according to the level of their gas or electricity payments and can be exchanged for a donation to the JPSA. An amount equivalent to the points provided by customers and matched by Tokyo Gas is donated to a social contribution project jointly selected by the Tokyo Gas Group, in its desire to create an inclusive society, and its customers.

In fiscal 2017, 173 customers provided 95,900 points, enabling the general manager of the Corporate Communications Department of Tokyo Gas to present a total of 191,800 yen to Managing Director Yamada of the JPSA at a ceremony.

Interview with a Tokyo Gas Athlete

I have devoted myself to training as an athlete at Tokyo Gas to achieve my dream of winning a Paralympic gold medal.

In fiscal 2017, a number of events took place to mark the three-year countdown and 1,000 Days to Go to the Tokyo 2020 Paralympic Games, and I felt the growing public excitement for the Tokyo 2020 Paralympic Games.

Tokyo Gas sponsored events in Toyosu and Shinjuku, and I was able to convey the appealing, interesting aspects of Paralympic sports to lots of children.

We are now two years away from the 2020 Games. The Paralympic Games in Tokyo will present a golden opportunity to see first-hand the para-athletes take on the challenge of demonstrating their potential. I hope you will come out to watch these games. Also, keep in mind that watching as many para-sports as possible and learning the game rules and backgrounds of each athlete beforehand will make watching the games even more exciting.
I hope that watching the many para-sports events in 2018 will greatly increase overall awareness of the events. As an athlete, I will compete while giving it all I’ve got to earn your support.

Tokyo Gas is an official partner of the Japanese Paralympic Committee in the Gas & Gas Utility Services category.

Profile
Born in Shiga Prefecture in September 1990, Keiichi lost his sight at the age of two due to illness. He began swimming in fourth grade and developed into a major swimming talent after moving to Tokyo and joining the swimming club at the University of Tsukuba’s School for the Blind (the current Special Needs School for the Visually Impaired).

Career highlights to date (S11/SB11/SM visual impairment classes)

<table>
<thead>
<tr>
<th>Year</th>
<th>Highlights</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>Competed at the Beijing 2008 Paralympic Games.</td>
</tr>
<tr>
<td>2012</td>
<td>Won silver in the 100-meter breaststroke and bronze in the 100-meter butterfly at the London 2012 Paralympic Games. Set a world record for the 200-meter butterfly at the German Open. (Chosen as flag bearer for the Japanese team at the London 2012 Paralympic Games.)</td>
</tr>
<tr>
<td>2015</td>
<td>Won gold in the 100-meter breaststroke and 100-meter butterfly, silver in the 50-meter freestyle, and bronze in the 200-meter individual medley at the IPC Swimming World Championships.</td>
</tr>
<tr>
<td>2016</td>
<td>Won silver in the 50-meter freestyle, bronze in the 100-meter breaststroke, silver in the 100-meter butterfly, and bronze in the 100-meter freestyle, and placed fourth in the 200-meter individual medley at the Rio 2016 Paralympic Games.</td>
</tr>
</tbody>
</table>

Supporting the Tokyo 2020 Games to Create an Inclusive Society

Events Marking 1,000 Days before the Games
Last year Tokyo Gas held a multi-day Universal Festa on October 28 and 29 in Toyosu, and then on November 17 and 18 in Shinjuku to mark the 1,000 days before the start of Olympic and Paralympic Games Tokyo 2020. The event offered a wealth of opportunities to deepen understanding of the concept by recreating the sights, sounds and feelings of the upcoming sports competitions from panel discussions with athletes and experts on universal society and community development to activities allowing participants to directly experience para sports and using wheelchairs. The two sites attracted 4,000 visitors during the event’s four days.

Since February 2017, we have been organizing field trips for schools to learn about para sports. Students were able to try on sports prosthetics at the Shin-toyosu Brillia Running Stadium to gain an understanding of competing with disabilities and developed a greater interest and understanding in para sports.
Support for the Tokyo 2020 Games and Beyond

Tokyo Gas is an Official Partner of the Olympic and Paralympic Games Tokyo 2020 scheduled to take place in 2020 in the Gas & Gas Utility Services category. As a company that has supplied the Tokyo metropolitan area with energy and sustained daily life for over 130 years, we view the Tokyo 2020 Games as an opportunity for contributing to the success of the event and realizing our goal of creating an inclusive society. In particular, we will engage in activities in the areas of supporting para sports, providing services to improve the quality of life and to support communities, engaging in social issues, ensuring stable and secure energy supplies, and implementing advanced energy initiatives in the Athletes’ Village and the venues in the hope of contributing to the success of the games. Moreover, we intend to continue our activities beyond the Tokyo 2020 Games by making use of the knowledge we acquire in our business. We believe that this will allow us to better meet the needs of an aging population and globalized society toward realizing greater prosperity and comfort in our daily lives and communities, leading to the creation of an inclusive society and contributing to regional development.

Interview with the General Manager of the Tokyo 2020 Olympic and Paralympic Department

Reaching for a Future that Lies beyond the Excitement

In the United States, where I spent time as a student, people with disabilities were taken very good care of, even in the smallest towns that lagged behind in barrier-free infrastructure. In Japan, where progress has been made ahead of the Tokyo 2020 Games in terms of physical access, such as barrier-free facilities, there is still room for improvement in terms of awareness or public understanding toward people with disabilities.

Tokyo Gas will work toward the success of the Tokyo 2020 Games and support them as an Official Partner. In addition to providing infrastructure, we will strive to instill a barrier-free mindset for everyone.

Supporting the Paralympic Games and para sports is the first step for Japan in becoming a highly mature
society that embraces diversity. The Tokyo 2020 Games represents a great opportunity for Japan to transform itself. In anticipation of 2020 and beyond, Tokyo Gas will make its best effort to contribute the creation of an inclusive society.

Corporate Emblem
We added “sustainability” to the other six messages we wish to convey through our official partnership with the Tokyo 2020 Games as seven flames. The emblem will be used in our activities related to the Tokyo 2020 Olympic and Paralympic Games up to 2020 as well as in all of our initiatives for creating a cohesive society. We hope to carry this baton of flames to shine a light on the future.

Yellow: Caring about our customers
Orange: Remaining close by
Light blue: Valuing diversity
Light green: Serving society actively
Green: Valuing sustainability
Red: Rising to the challenge
Blue: Delivering safety and reliability

Support for Employee Volunteer Activities
The Tokyo Gas Group provides employees with opportunities to engage in volunteer activities working alongside local communities in tackling social issues.

Disaster Recovery Efforts: Earthquake Relief Volunteers
Since launching our volunteer work program in June 2011, 1,980 employees and their families have, at 43 times, taken part in support activities tailored to the needs of the areas affected by the Great East Japan Earthquake.
In fiscal 2017, volunteers took part in volunteer activities to support the restoration of farmland in Higashi-Matsushima City, Miyagi, and the Fukushima Organic Cotton Project in Iwaki City, Fukushima.
The purpose of the project is to reclaim the large swaths of farmland abandoned in the wake of the 2011 earthquake to grow salt-tolerant cotton, which is harvested, processed into products, and sold.
In April 2017, 280 new employees at Tokyo Gas visited Iwaki to help reclaim farmland for the project as part of their training.

Growing organic cotton
Harvested cotton

Volunteer Work for Organizing Para Sports Events
As part of our support for para sports, we have been providing volunteers to organize para sports competitions since 2015, help set up and clear venues, staff receptions, and serve as interpreters. To date, 101 Group employees have participated in 9 events.

Volunteering to Collect Spoiled Postcards and Used Stamps

The Tokyo Gas Group began collecting spoiled postcards since fiscal 2003 and used stamps and cards since fiscal 2017. Used stamps and cards are delivered to the Minato Council of Social Welfare in Tokyo to promote welfare and volunteer activities in local communities. The spoiled postcards are donated to the Darunee Scholarship Fund, administered by EDF-Japan (MINSAI Center), we are contributing to the education of children overseas. Specifically, the proceeds are used to fund an international foster parent program, which enables underprivileged children in Vietnam, Thailand, Myanmar, Laos and Cambodia to continue their education. As of autumn 2016, we are supporting three junior high school girls in Laos.
The Tokyo Gas Southeast Asia Japanese Language Education Support program is operated through activities of language programs organized by the Japan Foundation Overseas. Tokyo Gas seeks to expand its midstream and downstream operations in Southeast Asia in the years ahead. Also, by nurturing the younger generation with an interest in Japan, we intend to contribute to the development of sustainable societies, strengthen our ties with local communities, and develop our profile as a business group that can be trusted and counted upon.

### Vietnam

In Vietnam, we have been supporting Japanese language education since April 2017 at the Ba Ria-Vung Tau University in Vung Tau City, Ba Ria-Vung Tau Province. In the Faculty of Oriental Studies, School of Languages-Cultures-International Relations, we operate a program for students who are majoring in Japanese language. We also conduct classes for second- and third-year students, offering guidance for participants in speech contests and providing assistance on graduation theses. And we support Japanese language education for students in science and engineering courses.

![Japanese language majors in Ba Ria-Vung Tau University's Faculty of Oriental Studies attending class](image)

### Thailand

In Thailand, we conducted lectures for three hours on March 24, 2017 for about 40 students taking Japanese language courses at Kohn Kaen University in the northeast region. The program was attended by graduate students in science and technology courses and undergraduates in the engineering and environmental science departments. The lectures introduced the overseas business of Tokyo Gas while also explaining the application of basic technology and future outlook for a hydrogen-based society and other developments.

![Lecture at Kohn Kaen University](image)
Tokyo Gas Group Community Development

Expanding Smart Energy Networks

The Tokyo Gas Group focuses on smart energy networks (SENs) that capitalize on the advantages of combined heat and power (CHP) systems* to optimize local generation and consumption of energy by linking heat, electricity and information networks toward making communities more energy efficient, environmentally friendly and resilient to disasters. With CHP systems at the core, SENs raise energy efficiency by making maximum use of renewable and underused energy sources, which are integrated with information and communications technology (ICT) to construct an optimal energy system for accurately managing supply and demand. This also improves disaster resilience and so meets BCP (business continuity planning) needs while enhancing the value that cities offer. SENs are now being developed in redevelopment zones and other areas in the Greater Tokyo Area. One is the Tamachi SEN, which was awarded the Minister of Economy, Trade and Industry Award for joint projects in the Successful Case of Energy Conservation category at the Energy Conservation Grand Prize Awards in fiscal 2016.

*CHP systems generate electricity and recover waste heat generated as a by-product.

Developing a SEN in the Northern District Adjacent to the East Exit of Tamachi Station

The Tokyo Gas Group has been collaborating with Minato Ward in Tokyo to develop a low-carbon, disaster-resilient community in the northern district adjacent to the east exit of Tamachi Station. The project is intended to optimize energy demand, save energy and enhance disaster resilience by
building a SEN. In 2014, construction of the Block I Smart Energy Center was completed and began supplying heat and electricity to the Minato Park Shibaura, a public facility, a hospital and child welfare facility in the Life Zone. Then, in May 2018, the Block II Smart Energy Center began operations within the New Urban Zone and started supplying energy to office buildings and a hotel. This public-private project is also intended to optimize energy management across the entire area by having the two SENs supply heat to each other, thereby reducing CO₂ emissions by 30% below 2005 levels.

The newly completed smart energy center will be equipped with one of the world’s most efficient CHP systems.

SEN Development in the Toyosu Wharf District

The Tokyo Gas Group is pursuing urban development with the potential to extend deep into the 22nd century in a redevelopment area located around land the Group holds in the Toyosu wharf district of Tokyo’s Koto Ward. Under this project, “Tokyo Smart City TOYOSU 22,” we are undertaking futuristic urban development guided by the three concepts—“smart energy,” “smart green,” and “smart community”—from a long-term perspective looking beyond the Tokyo 2020 Olympics and Paralympics, as a high-quality development to raise the value and appeal of the area.

TOYOSU 22 Urban Development Concept

In May 2016, we completed construction of a smart energy center in Zone 4 (see figure below), owned by Tokyo Gas Site Development Co., Ltd., in preparation for development of a SEN in the Toyosu wharf district. This is the second SEN to be developed by Tokyo Gas in an urban redevelopment district, the first being in the northern district adjacent to Tamachi Station’s east exit. The newly completed smart energy center will be equipped with one of the world’s most efficient CHP systems.
CHP systems, which will supply electric power to the Toyosu wholesale market while waste heat is used to power equipment at the center. Environmental friendliness will be enhanced by adopting gas pressure differential power generation*1 using gas supply pressure. By applying CHP systems with blackout start specifications*2 to construct the systems, laying independent power lines*3 and employing disaster-resistant medium-pressure gas pipelines, we will create a system capable of an uninterrupted supply of heat and electricity, even during power outages or other emergencies, thus enhancing the district’s resilience to disaster. The network will also have a “SENEMS”*4 for centrally managing and controlling energy throughout the district using ICT. SENEMS will instantly analyze and process real-time information on supply and demand, weather conditions and specific characteristics associated with each day of the week in order to automatically optimize energy demand and supply for the area. We plan to progressively expand the heat and power network as development of Zones 4 and 2 progresses.

*1 Power generation based on the use of gas supply pressure.
*2 Process of independently restarting the generator during a power outage.
*3 Power lines laid independently by an operator. They can be used at a customer’s discretion when grid power has been interrupted.
*4 Smart Energy Network Energy Management System.

Toyosu Wharf District Development Area

In October 2016, Tokyo Gas and Tokyo Gas Engineering Solutions began constructing the Kiyohara Smart Energy Center. This is based on a 30 MW-class cogeneration system that will supply electricity and heat in the form of steam and hot water to seven plants operated by three companies in the Kiyohara Industrial Complex on the outskirts of Utsunomiya City in Tochigi Prefecture. The project will supply a combination of electricity and heat to multiple plants in different industries as Japan’s first integrated energy-saving project serving multiple plants*1 in an inland industrial park. Also, the project will incorporate an energy management system*2 to concentrate data on electricity and heat (steam and hot water) usage for multiple plants in different industries with distinct demand depending on the time and season. By efficiently meeting those needs, we expect a reduction of approximately 20% in energy consumption*3 and CO₂ emissions,*4 respectively. In addition to the effects of reducing environmental impact, blackout start specifications*5 will be adopted to supply electricity and heat (steam and hot water) to each plant in the event of a prolonged power outage or a disaster, thereby enhancing security.

The center’s construction is compatible with Tochigi Prefecture’s energy strategy and Utsunomiya City’s action plan on addressing climate change, formulated by referencing the government’s reduction targets for greenhouse gas emissions and other goals. It is therefore expected to serve as a model for other regions in Japan. In fiscal 2016, the project was selected to receive a subsidy from the Ministry of Economy, Trade and Industry for supporting energy conservation at plants and other worksites.

Kiyohara Smart Energy Center

In October 2016, Tokyo Gas and Tokyo Gas Engineering Solutions began constructing the Kiyohara Smart Energy Center. This is based on a 30 MW-class cogeneration system that will supply electricity and heat in the form of steam and hot water to seven plants operated by three companies in the Kiyohara Industrial Complex on the outskirts of Utsunomiya City in Tochigi Prefecture. The project will supply a combination of electricity and heat to multiple plants in different industries as Japan’s first integrated energy-saving project serving multiple plants*1 in an inland industrial park. Also, the project will incorporate an energy management system*2 to concentrate data on electricity and heat (steam and hot water) usage for multiple plants in different industries with distinct demand depending on the time and season. By efficiently meeting those needs, we expect a reduction of approximately 20% in energy consumption*3 and CO₂ emissions,*4 respectively. In addition to the effects of reducing environmental impact, blackout start specifications*5 will be adopted to supply electricity and heat (steam and hot water) to each plant in the event of a prolonged power outage or a disaster, thereby enhancing security.

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Overview of Electricity and Heat (Steam and Hot Water) Supply

Kiyohara Smart Energy Center

Japan's First SEN to Serve Neighboring Facilities in Nihonbashi Muromachi

A large high-efficiency CHP system has been installed in the redevelopment zone in Nihonbashi Muromachi 3-chome to serve as an independent distributed power source. The system will supply electricity and heat to office buildings and commercial facilities in the surrounding area as well as within the redevelopment zone, making it the first such project in Japan. New projects of this kind will encourage the area-wide adoption of smart energy technologies and contribute to the development of cities that are much more resilient to disasters. The project is being run by Mitsui Fudosan TG Smart Energy, Inc. (a joint venture formed by Mitsui Fudosan and Tokyo Gas) and is expected to be completed in March 2019.
Participation in Yokohama’s Tsunashima-Higashi Smart Town Project

The Tokyo Gas Group is pursuing a number of projects, including development of an energy center, in Tsunashima Sustainable Smart Town, a next-generation urban smart city that will be developed on the former site of a Panasonic factory in the Tsunashima-Higashi district of Kohoku Ward in Yokohama, Kanagawa Prefecture. The first energy services came on stream in December 2016, and they are now being gradually expanded. The plan is to develop energy supply systems based on an advanced model for sharing heat and power supplies to diverse facilities over a more compact area than in the past. We will improve supply continuity by installing a CHP system in the town energy center and using multiple power sources and disaster-resistant medium-pressure gas lines. The use of more efficient equipment and area-wide energy utilization will also improve environmental friendliness. The delivery of energy services will ensure the financial viability of these improvements in supply stability and environmental friendliness.