# 20 GAS











## Supporting you Always and bettering every day.



The Tokyo Gas Group aims to be a true power source for people's lives, and for society. Over 130 years, our work kept us in a kind of face-to-face relation with our customers. Based on the accumulated experience and trust derived from that history, we want to help create a bright, safe, and pleasant tomorrow.

We will continue to be very close to our customers and be deliberate in taking action on their behalf. Our efforts will be group-wide as will be our bold, confident approach to the challenges ahead.



#### Forward-Looking Statements

This annual report includes various management goals and other forecasts relating to the "Challenge 2020 Vision" announced in November 2011 and other strategies. This information is based on forecasts, assumptions, and available information when preparing the "Challenge 2020 Vision" and other strategies and does not guarantee the achievement of goals and forecasts or future business results.

Further, this information may change due to changes in business conditions. Therefore, placing undue reliance on this information is not advised. In addition, the target figures for fiscal 2017 are based on the judgment of management and the information available when the figures were published (April 28, 2017). The company will disclose the latest information to the Tokyo Stock Exchange in a timely manner and at the same time publish it in the investor relations section of its website (http://www.tokyo-gas. co.jp/IR/english/index.html).

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# Tokyo Gas continues to grow as "New Energy Frontier"

	1950	1970	2000	2017.3
Number of customers	591 <sub>thousand</sub>	4,004 thousand'1	8,872 thousand"	11,536 thousand
Gas sales volume	0.15 billion m <sup>3 11</sup>	<b>1.</b> 66 billion m <sup>3*1</sup>	9.08 billion m <sup>3+1</sup>	15.72 billion m <sup>3</sup>
Number of	Consolidated _	-	16,307	16,823
employees <sup>*2</sup>	Parent-based 5,837*3	10,258 "	12,339	8,219
LNG suppliers (projects)	0	1	7	12
Length of pipeline network <sup>1</sup>	° 10,756 km	23,194 km	47,908 km	63,062 km
Power stations (Tokyo Gas power generation capacity)	Oĸw	O <sub>kW</sub>	Окw	1.58 million kW
Electric power sales volume	OkWh	OkWh	OkWh	12,654 million kWh

\*1 Parent-based

\*2 Employees include full-time employees and excludes seconded or temporary employees.

\*3 Regular employees







04

# LNG Value Chain for Value Creation

The Tokyo Gas Group contributes to society by advancing its LNG Value Chain.



05





## My commitment to the Second Foundation of Tokyo Gas

My mission is to create corporate value within the Tokyo Gas Group. For over 130 years since 1885, Tokyo Gas has provided a stable and reliable supply of gas to industries and households in the Greater Tokyo Area and has supported its economic development and quality of life of its people. Following the full deregulation of the electric power retail market in 2016, the gas retail market was fully deregulated in April 2017. This thrust us into a new era of competition. While it is not widely known, in 1872 during the civilization and enlightenment period, it was the gas lamp which brightened the streets at night in Japan. A few years later, Tokyo Gas was born. Since then, we were the first in Japan to adopt liquefied natural gas (LNG), gas-fired air cooling, and a large-scale cogeneration system, leading to widespread use of natural gas, clean energy, and exploration at the energy frontier.

opportunity for the Tokyo Gas Group to go beyond the regulatory frameworks of the gas business in the Greater Tokyo Area and to provide electric power retail and various other businesses and services nationwide and overseas. I am thrilled and excited to be at the helm during this momentous time.

I believe Tokyo Gas is in the midst of an era I call the Second Foundation of the company to create new value, since its first foundation during the civilization and enlightenment age. I am fully committed to managing Tokyo Gas at this important juncture.

## Shifting management from the Mt. Fuji type to the Yatsugatake Mountains type

We have been taking up the challenge of the full deregulation of the electric power and gas markets as a management challenge not passively but proactively. The Great East Japan Earthquake of March 2011 prompted us to significantly review our management as an energy company. Within the same

I regard the deregulation of the energy market as a great

# I am committed to the Second Foundation of Tokyo Gas

Taking the deregulation of the energy market in Japan as a great opportunity, I am thrilled and excited.

I believe Tokyo Gas is in the midst of an era I call the Second Foundation of the company, since the first foundation in 1885 during the period when post-feudal Japan was rushing headlong to become "civilized and enlightened." At this special time in the company's history, I am doing my best to enhance corporate value.

year we drew up the Challenge 2020 Vision, a nine-year plan, in which we have targeted business portfolio reform, in anticipation of a full-scale deregulation.

We aim to shift away from management focused on one dominant business in city gas, corresponding to Mt. Fuji, to management of several large businesses, including the electric power business, overseas activity, and various other businesses, corresponding to the Yatsugatake Mountains, an entire mountain range, for achieving sustainable growth. I personally like the Yatsugatake Mountains and often visit there. While each of the eight (yatsu) mountains has distinctive and individualistic features, the range of the mountains collectively looks attractive with a variety of different views, depending on the time and the place from which to view them. I envision the renovation of our business portfolio in a similar way.

## Prioritizing investment that will contribute to raising corporate value

In front of gas lamps of the Tokyo Gas Headquarters

In fiscal 2016, ended March 31, 2017, our operating profit decreased 70% year-on-year to ¥58.3 billion. This was mainly due to the absence of the sliding time lag benefits that occurred in the previous year, an increase in depreciation burden following the start-up of large domestic infrastructure projects, and actuarial gain or loss. The results, however, were better than initially expected, thanks to a reduction in expenditures and to better sales efforts.

For fiscal 2017, ending March 31, 2018, assuming the exchange rate of ¥115 per U.S. dollar and an oil price of \$55/bbl, operating profit is expected to be ¥82 billion (up 41% y-o-y), mainly due to the absence of one-off accounting factors. Despite expecting a significant profit increase from fiscal 2016, I do not think that the current level of profit indicates our true earnings power. Let me emphasize that current substandard profits resulted from our forwardlooking investment and implementation of measures, targeted to raise future corporate value, during the Second Foundation phase of the company, in addition to one-off accounting factors.

## Challenge 2020 Vision, prompted by the Great East Japan Earthquake of 2011, is steadily be implemented to realign the business portfolio

## Robust securing of user contracts in the first year of the deregulated electricity market

The electricity market in the Kanto Region alone is as large as ¥3 trillion. Its deregulation is certainly posing a great opportunity to Tokyo Gas. We are targeting acquisition of about 10% of demand in the Greater Tokyo Area by 2020, by expanding sales to the deregulated residential and smallcommercial customer sectors, in addition to our existing wholesale business.

As the development of power supply (power generation) required for electricity sale is proceeding smoothly, our focus is to acquire customers. As a result of our concerted groupwide efforts, we have acquired 730,000 customers, far exceeding our plan (400,000) for fiscal 2016, the first year in the electric power retail business. We were able to start this new chapter in our industry's history as the No. 1 new entrant. This was supported by our customers' trust extended to Tokyo Gas and efforts by our Group companies, including Tokyo Gas Lifeval, which has a community-based sales network. We are targeting one million customers, cumulative, in fiscal 2017.

Entering the second year since deregulation, we are anticipating consolidation or other moves among the electric power new entrants. Keeping an eye on various possibilities, we are aiming at non-linear expansion. In this year again, we will not hesitate to invest the management resources required in this business.

## Taking an offensive stance toward the full deregulation of gas retail sales

The retail gas market has also been fully deregulated since April 2017. We are taking an offensive, not defensive stance, by considering deregulation as a great opportunity for the Tokyo Gas Group to go beyond the regulatory frameworks of the city gas business.

Following our strategy to be a one-stop provider of gas, electricity, and services, according to customer needs, we will strive to be chosen by customers based on the overall energy cost and added value.

As a general gas operator, we are coordinating smoothly with each gas retailer to ensure transparency, neutrality, and fairness and to enable safe and reliable usage of gas even







after the deregulation. With the objective of ensuring a stable supply and expansion of services, we are strengthening our natural gas infrastructure. Construction of the Koga-Moka Line will be completed around the fall of 2017, ahead of the schedule, and construction of the Ibaraki Line will be launched after the selection of its final route.

Demand for gas, from LNG, a relatively clean energy, has grown through conversion from reliance on other energy and is expected to continue to expand. Maintenance know-how is indispensable for safe use of gas. We are in advantageous position in this regard, as we have strong relationships of trust, accumulated over many years, with customers.

## Making steady progress toward realization of our long-term vision

Fiscal 2017 is a final year of the second "Step" stage of the Challenge 2020 Vision. We are making steady progress in its three main measures: to evolve into the total energy business; to accelerate global business development; and to reconstruct our corporate group. We will continue our progress in fiscal 2017.

To evolve into the total energy business, we have made a good start in the electricity retail business. Development of electricity supply capacity is also proceeding as planned. In the city gas business, we began operation of our Northern Kanto Area infrastructure, including the Hitachi LNG Terminal, our first receiving terminal located outside of the Tokyo Bay area, as well as the Ibaraki-Tochigi Line. In addition, we have decided to build the Ibaraki Line between the Hitachi Terminal and the Kashima Industrial zone. Upon completion of the Ibaraki Line and pipeline loops, we can confidently accommodate future additional gas demand in the Kanto. In the context of accelerating global business development, we have established new business operation sites and increased our workforces. We have established ourselves mainly in North America and Southeast Asia and have specific projects in hand. Specifically, in 2017, we purchased a 30% equity share in Castleton Resources, a company which has 660km<sup>2</sup> of leasehold in eastern Texas in May. While we acquired equity stakes in the U.S. gas development business in the past, this is the first equity investment in an upstream company.

Concerning the realignment of our corporate group, in April, we defined seven business domains: City gas business, Electric power business, Liquid gas business, Living service business, Engineering service, Urban development service, and Overseas business. These are seven businesses, not eight as Yatsugatake (literally eight peaks) may indicate, but retain the potential for us to add other new businesses, as long as they can contribute to raise corporate value. In the area of corporate governance, since April, we have made clearer separation of supervision and execution and have enhanced a monitoring function of the Board of Directors. Meanwhile, the Board is becoming a place to draw up important strategies for the entire Tokyo Gas Group, not merely a place to deal with details of each execution. We have also strengthened our risk management system, foreseeing an increase in business volatility as the onceregulated industry has become deregulated.



## What I want to tell you

Lighting street lamps, it was the begining of Tokyo Gas' history.

We embrace the spirit of our founder, Eiichi Shibusawa, to balance social value and economic value.

Since the Company was founded, we have tackled continuous challenges of competition and need for reform. We will accelerate self-generated change during this Second Foundation.

The gas industry is a growth industry for us. We are based in the highdemand Great Tokyo Area and will expand into the Northern Kanto Area.

We aim at acquiring one million customers for electricity within 2017, with a medium-term target of a 10% share in the Kanto Region.

We are developing overseas activities.

We are shifting away from the Mt. Fuji type management to the Yatsugatake Mountains type management.

We make use of our invisible assets.



## Shaping up the management plan for 3-year "JUMP" stage

From fiscal 2018, we will enter the next 3-year "JUMP" stage, to complete our Challenge 2020 Vision. We will plan specific strategies and launch them by the fall. We intend to draw up management strategies, heeding implications and requirements of the Basic Energy Plan of the Japanese Government and keeping an eye on moves by JERA (a joint venture of Tokyo Electric Power and Chubu Electric Power), our competitor in the energy market. Major issues to focus include how far we shall expand in the electric power business, how much we shall invest overseas, and whether we need to scrap and build businesses. For example, the Challenge 2020 Vision targets expansion of our electric power generation capacity from 1.6 million kW at present to about 3 million kW by 2020. Aiming to increase the capacity to 5 million kW by 2025, we will plan measures of the three years.

Looking ahead, we are likely to need alliances with other companies more than ever for the promotion of the total energy business and for global development. We have already established Synergia Power with Tohoku Electric Power in high-voltage power sales. We will be flexible in considering other options in the context of a wider framework.



#### Continuing to enhance "invisible assets"

Since the company was founded in 1885, we have accumulated "invisible value" which does not appear on financial statements. Our sources of competence include our customers' trust, accumulated knowledge, richly experienced human resources, a track record in stable supply, LNG procurement capacity, a network in the Greater Tokyo Area of Lifeval and other service Companies, and various business partners. In addition, we have infrastructure facilities such as pipelines, which appear on the financial statements but are installed underground and cannot be seen. When we launched retail electricity sales, we recognized anew the brand value of Tokyo Gas as trustworthy by customers. We consider that underground pipes and trust are also invisible assets. We intend to treasure and use such advantages in dealing with the gas retail market after deregulation.

#### Balancing social contribution and creation of corporate value

Eiichi Shibusawa, the first president of Tokyo Gas and a formidable industrialist and financier in the 19th century, wrote in his book "Rongo to Soroban (The Analects and the Abacus)" the importance of balancing social value and

economic value. Not common good OR profit. Rather, common good AND profit, which is needed for sustainable growth. Shibusawa started the company with that prescient concept present in today's CSV or Creating Shared Value. For 130 years, we have kept this concept foremost in our management and have consistently endeavored to contribute to society by safely and stably supplying energy, which is indispensable to people's lives, and have achieved sustainable profit growth of the company. This dedication is shared by all of our employees and is the origin of our corporate social responsibility (CSR) and the ultimate source of corporate value. This underlying principle will remain unchanged when we handle not only gas but also electric power and services to engage in the total energy business and when we do business not only in the Greater Tokyo Area but also across Japan and abroad. Employees are the driver for business promotion. Under the view that business cannot be sustained unless each one of them works enthusiastically, we are establishing various programs and working on raising awareness of various subjects. Establishing an environment where our people are motivated to work is resulting in orienting our corporate culture to respect diversity and human rights. I believe our "corporate value" is the sum of value we offer to customers, shareholders, business partners, communities, and all other stakeholders. Concerning shareholder return, we intend to maintain our basic policy of targeting a total payout ratio of approximately 60% by combining dividends with share repurchase (assuming subsequent cancellation) up to 2020. In fiscal 2016 we recorded a significant decrease in earnings but did not cut dividends. We intend to gradually increase dividends in line with growth in earnings.

#### We will keep growing

Lastly, I will manage the Tokyo Gas Group so as to keep it a growth company. While gas demand in Japan is expected to increase, due to a shift into clean and competitive LNG, Tokyo Gas is aiming at increasing sales in the Northern Kanto Area where we are establishing infrastructure. Moreover, we also have growth opportunities, including electric power business and overseas markets. We will embrace the values incorporated in our corporate message, "Supporting you Always and bettering every day." We will continue dialogues with many stakeholders and raise long-term corporate value through our new system in this new era. The Tokyo Gas Group is taking up challenges for the Second Foundation. I ask for the continued understanding and support of our stakeholders.

Representative Director, President 広 涛へ

Tokyo Gas is committed to sustainable growth investment and enhancing shareholder return, while remaining alert to maintaining financial health

Isao Nakajima Senior Executive Officer, CFO

#### We have made investments to enhance earning power

As CFO, I participate in the process of reviewing and deciding on management strategy and am in charge of financial and capital policy. The basic financial and investment policy of Tokyo Gas is to achieve three objectives that are mutually related: (1) to make sustainable investment for growth; (2) to maintain financial health; and (3) to deliver stable and appropriate shareholder return.

Based on a solid financial position as shown by the equity ratio of 49% and debt-to-equity ratio of 0.65 as of March 31, 2017, we are determined to continue active growth investment and maintain our current competitive shareholder return (total payout ratio of 60%) in fiscal 2017. Our ordinary income in fiscal 2016 decreased 70% yearon-year to ¥55.6 billion. This does not necessarily indicate the degree of our earning power. The decline was mainly due to the sliding time lag associated with changes in oil prices and actuarial gain or loss, which wiped out profit by



#### Shareholder Returns



\*1 Non-consolidated basis up to fiscal 1998; consolidated-basis from fiscal 1999 \*2 Gas sales volumes from fiscal 2011 are on a 2020 Vision basis. (Including the portion used in tolling and the LNG sales volume.)

## **Basic Financial Policy**

Steadily implement growth investments, with consideration given to investment efficiency and cost of capital

2 Ensure financial health, to support sustainable growth investment and stable shareholder return

3

Sustain specific shareholder return policy (Total payout ratio of 60%)

roughly ¥120 billion. In addition to these one-off factors, upfront investment for newly-entered retail electricity business and depreciation expenses in projects, such as for start-up of the Hitachi LNG Terminal (to greatly improve city gas supply capacity), depressed profit. However, we strongly believe that these are advance investments for future growth, leading to enhance our medium- to longterm earning power.

## Shifting into a Yatsugatake Mountains type management to facilitate steady execution of various strategies

Our Challenge 2020 Vision can be summarized as constructing a business portfolio that enables us to firmly make money in city gas, our original core business, as well as in other businesses. Our specific target is to earn in the ratio of 2:1:1 in the city gas, overseas, and other businesses including LNG sales and electric power. We are moving away from management focused on one dominant business, city gas, "Mt. Fuji type", to management of several large businesses, "Yatsugatake Mountains type". Initially, when we launched the Challenge 2020 Vision, we did not have a fully articulate image. Subsequently, through carrying out initiatives, we have organized our vision into seven business domains: City gas business, Electric power business, Liquid gas (LPG and industrial gas) business, Living service business (life support, ideas and hints for living, comprehensive facilities, etc.), Engineering service business (energy service, LNG facilities, etc.), Urban development service business (real estate usage and management), and Overseas business.

In the electric power business, we plan to increase the number of customers from about 730,000 in fiscal 2016 to one million in fiscal 2017. Since April 1, 2017, retailing of city gas has become fully deregulated. We will not merely continue our city gas business as it has been. We think it is important to proactively provide customers with valueadded services by combining city gas, electricity, and life-related services.

Overseas, we focus on North America and Southeast Asia, where our initiatives to participate in shale gas or gas-fired power generation businesses in cooperation with local major companies have been making progress. We certainly consider feasibility, risk management, and other factors, and cautiously make investment decisions. At the same time, we want to realize a virtuous cycle, in which each achievement is accumulated and leads us to the next business opportunity.

In the urban development service business, we are collaborating with a major developer for a large-scale project "msb Tamachi" in the East Exit area of JR Tamachi Station in central Tokyo , to be completed by 2020. As such, each business, representing each peak of a mountain range, independently carries out growth strategies, while the group-wide comprehensive management system covering all businesses is being enhanced to realize the Challenge 2020 Vision.

## Alert to the cost of capital in making investment decisions; moving toward achieving 8% ROE

The Challenge 2020 Vision has set the amount of investment and loans at ¥2,060 billion for nine years to fiscal 2020. We have already invested over 50% of this target amount. In fiscal 2017 and after, we plan to enhance maintenance, such as pipeline replacement, and to invest in a high-pressure pipeline network from a longer-term perspective. Particularly in the overseas business. engineering service business, and real estate business, we are mindful of the cost of capital in making investment decisions, in order to improve ROE. Our ROE target in the Challenge 2020 Vision is 8% by fiscal 2020. While ROE in fiscal 2016 fell short at about 5%, partly due to the effect of the sliding time lag, a one-off negative factor, we will steadily maintain and expand earnings of each business, that comprises our "Yatsugatake Mountains", so as to achieve our target.

## Maintaining a total payout ratio of 60% in dividends and share buyback

We are on record as pledged to return approximately 60% of consolidated net profit in dividends and stock repurchases to shareholders through fiscal 2020. This means we will raise dividends step by step, while returning earnings, or the outcome of business, on a timely basis to shareholders. Our target of 60% reflects balanced consideration given to shareholder return, future growth investment, and financial health, as diligent use of the generated cash flow. We are making our policy on distribution of the surplus as clear as possible, as a part of efforts to ask for continued understanding and support of shareholders.

## **Deregulation of the Electric Power and Gas Markets**

Meaning and Objectives of Electricity and Gas System Reforms and Schedule Milestones



#### **Gas System Reforms**

Since April 2017, regional monopolies and regulation on prices for small-scale gas retail have been abolished. In the past, general gas business operators provided a one-stop service from production to supply and sales. The gas system reform has separated the gas industry into three types: gas pipeline business (general and dedicated); gas retail business; and gas production business. Retail operators (new entrants) are now able to use the pipelines of the pipeline business operator, upon payment of usage rates, and to sell gas to residential and small-scale business customers.

#### **Tokyo Gas Group's Actions**

In fiscal 2016, we made a good start by entering the electricity retail business and getting prepared for the full deregulation of the retail gas business of April 2017, as a priority issue.

#### Small-lot segment

mail-lot segme	ent		Tokyo das New entrants
~2017.3	Production	Supply	Sales
2017.4~	Production	Supply	Sales

#### Business Operators' Major Roles, Major Changes from the Gas System Reform, and Tokyo Gas Group's Strengths

Type of business	LNG terminal business (gas production business) [Notification system]	General gas pipeline business [License system]	Gas retail business [Registration system]
Major roles of each business operator	Production of gas, based on request from own- company's retail division and contracts with other companies	<ul> <li>Transportation service for delivery to specified service points via pipelines that the service provider maintains and operates<sup>1</sup></li> <li>Fair management as a pipeline operator available to all retail operators</li> <li>Last resort service obligation</li> </ul>	Securing and supplying the supply capacity needed to deliver to own customers
		Safety: emergency safety, inner-pipe leakage testing	Safety: gas appliance inspection; safety awareness promotion
Major institutional measures triggered	Provisions on the use of LNG terminal by third parties within the extent of excess capacity	2	<ul> <li>Retail gas business shift from a license system to a registration system</li> <li>Abolition of regional monopoly</li> <li>Enabling all customers, large and small, select a retail operator out of those with various services and rate schemes</li> </ul>
from the gas system reform	Provisions to promote entry of various retail operators	The pipeline is commonly used by all retail operators.	Establishment of a fair retail competitive environment and an appropriate gas pipeline network
		3	<ul> <li>■ From rates based on the full cost principle to free price setting by retail operators<sup>2</sup></li> <li>→Realizing competition-driven decline in rates</li> </ul>
Tokyo Gas Group's Strengths	Stable and efficient terminal operation	<ul> <li>Stable and reliable management of gas pipeline network</li> <li>Expansion of optimal new infrastructure to improve supply capacity</li> <li>Emergency safety measures</li> </ul>	Community-based sales structure Capacity to propose energy solutions LNG procurement capability of 14 million tons per year

After the phased and subsequent full deregulation of the electric power retail market in April 2016 and of the retail gas market in April 2017, Japan's energy market has become fully deregulated.



\*1 "Transportation service" means to receive gas from the gas supply operator (who requests transportation service) in the pipeline of the gas operator and to supply the same amount at a different spot through the same pipeline to the gas supply operator. The transportation rate is the pipeline usage rate that the gas retail operator uses in gas supply and is approved by the government.

\*2 As a transitional measure so that the amendment would not result in increased gas retail prices due to insufficient competition with other gas retail operators, LP gas, all-electric operators and other players, the designated former general gas operator is required to provide retail price menus reviewed and approved by the Ministry of Economy, Trade and Industry (\*METI").

# **Toward Achieving the Challenge 2020 Vision**

In November 2011, we released "The Tokyo Gas Group's Vision for Energy and the Future: Challenge 2020 Vision" as a guideline to lead us to what we aim to be up to 2020. It was based on extensive internal discussions about the role of an energy company in society that can enable it to realize a prosperous, fulfilling way of life for people, contribute to the competitiveness of domestic industries, and be friendly toward the environment.

## Gist of Challenge 2020 Vision

We will develop and expand our business structure and base, in order to enhance the value of our LNG value chain, return profits to customers and shareholders, and contribute to society.

## Five action plans to advance the LNG value chain



# Toward becoming the "total energy corporate group" and the "global corporate group"

Tokyo Gas will make further progress in its core city gas business and develop the electric power, engineering, wide-area gas supply, and other businesses into new sources of strength whereby to make being the "total energy corporate group" a reality. At the same time, we will maintain our business base in the Greater Tokyo Area and develop business across Japan and overseas, aiming to become a "global corporate group" with about a quarter of earnings to be generated from overseas businesses in fiscal 2020.



stage

Fiscal 2015-2017 Main initiatives •Evolve into the total energy business •Accelerate global business

development

 Reconstruct the corporate group

## MILESTONE

The Challenge 2020 Vision comprises the following three periods or what we call "stages" with different themes and initiatives to implement for each stage. **JUMP**stage Fiscal 2018-2020

Our target Advanced LNG value chain

Fiscal	2020	
Consolidated operating cash flow	ROE	ROA
¥250 billion	8%	4%
D/E ratio Approx. 0.8	Total pay	
(each fiscal year)		

#### Where we are at present P19 >

In fiscal 2017, the final year of the "STEP" stage, we will increase added-value by making total-energy proposals that combine services to the city gas, electric power, and liquid gas businesses, and enhance initiatives to make the Tokyo Gas Group to be chosen as a supplier of gas, electricity, and services. Further, we are accelerating expansion of the overseas business under a new structure, including 11 overseas bases. We have defined seven business domains each of which will have a specific growth plan and arrangements to generate synergies among them.

# HOPstage

Main initiatives •Diversification and expansion of LNG procurement and overseas business •Safe and stable energy supply •Energy solutions that meet customer needs

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STEP stage Final fiscal year **Fiscal** 2017

## What we will do

Regarding the specific business strategies for the seven business domains we have identified, we will adjust conditions in our corporate groups to facilitate growth and expansion, and generate synergies. This means we will seek to deliver more added-value to customers. We will also strive to strengthen our foundations to support business growth.

## Business domains' specific business strategies

City gas business	Electric power business	Liquid gas business	Overseas business
Enhancing alliances in LNG procurement and for terminals; increasing use of gas and securing its stable supply under the newly deregulated conditions	Expanding power sources Stable low-cost supply One million low-voltage retail customers	LPG sales via enhanced alliances	Business expansion in North America and Asia,
Living service business	Engineering service business	Urban development service business	with opening of new bases and increasing manpower
Creating added-value for customers	Expansion of business area and domain Enhancing engineering solutions	Effective use and management of real estate Growth strategy planning	Enhancing risk governance

Evolving into the total energy business

## Accelerating global business development

## **Strengthening of foundations**

Digitalization strategy	Environmental (low-carbon) strategy	Workflow and workstyle reform
Promotion of digitalization; enhancing IT infrastructure	Research and development and strategy planning, assuming progress toward a low-carbon society	Drastic innovations in work, business structure, and workstyle



Expanding business area and domain in engineering services that match the needs of customers



Liquid gas business

LPG business: Raising logistics efficiency and enhancing safety level and customer service via alliances with various players

Industrial gas business: Enhancing one-stop solutions, by combining LNG, engineering services, and other services

# HALLENGE 20 VISION



#### City gas business

Aiming at enhancing alliances in material procurement, LNG terminals, and power stations and at achieving both stable supply of energy and competitive resource prices

Securing transparency, neutrality, and fairness as a new gas pipeline operator, and striving for safety, stable supply, and promotion of use



#### **Electric power business**

Realizing stable low-cost electric power procurement and sales expansion through the procurement and sales optimization, in order to be able to service about a million customers



Living service business

In addition to the energy business in the residential market, expanding new values and services that help make customers' life more comfortable



## City gas, Electric power, Living service

Group-wide efforts to deliver proposals for a more comfortable life to residential customers, offering comprehensive choices in gas, electric power, and services

Alliances with gas wholesale operators in providing gas, electric power, and services. Expanding electric power sales via business alliances in low-voltage power with gas wholesale operators and others; establishing arrangements for alliances in gas, electric power, and services



## City gas, Electric power, Engineering service

Providing gas, electric power, and services to commercial and industrial customers. Promoting energy solution proposals that meet customers' needs, not limited to the gas supply area of Tokyo Gas, for raising convenience and amenity of customers' business operations



Urban development service (real estate) business

Contributing to communitybased energy plans and disaster-resilient urban planning through effective use and management of real estate, and cooperating with strong players in the real estate industry, with an aim of profit growth



Overseas business

Participating in new projects, mainly in North America and Southeast Asia, and studying business expansion in new areas by leveraging the existing overseas bases and staff and aiming for higher and more stable profit

Enhancing risk management by using past experiences and raising added-value of business, as risk will be diversified and increased, in line with acceleration of expansion in area served and lines of business Initiatives toward strengthening business foundations

Digitalization strategy; Environmental (low-carbon) strategy; Workflow and workstyle reform

# GAS BUSINESS

Outline	cooking, heating, and hot wa generation, and other usage. Tokyo and its adjacent three	Tokyo Gas Group spans a wide r ter, commercial air conditioning, The Tokyo Gas Group has also e prefectures (Kanagawa, Chiba, a hening its pipeline network so as	industrial use, power extended coverage from and Saitama) to North Kanto
	Number of customers	Gas sales volume	Net sales
	<b>11,536</b> thousand	15.7billion m <sup>3</sup>	¥1,040 billion
	FY2016	Equivalent to approximately 45% of gas sales volume in Japan in FY2016	FY2016
Strengths	Delivery of safety and relia	as a base and the relationship bility to customers for many ye robust production/consumptio	ars
	0	P) is now in the service area	nactivities (representing
	Safety-related know-how	and energy solution technology	,
Risks	<ul> <li>Potential difficulty in mate import sources</li> </ul>	rial procurement caused by the	impact of country risks at
	Supply issues due to dama disaster	age to production facilities sten	nming from a large-scale

Intensified competition driven by market deregulation; decline in demand caused by changing lifestyle

## Sales Volume and Operating Profit



## Crude Oil Price and Foreign Exchange Rate





## Diversify resource suppliers

Tokyo Gas is beginning to receive LNG from the Cove Point LNG Project, our first from the gas-rich shale source in North America. This resulted in increasing the number of LNG suppliers to 13 projects in 6 countries, and making Tokyo Gas one of the foremost purchasers with diversified contracts in Japan. To enhance procurement stability we are considering widening LNG procurement areas from Southeast Asia, Australia, and North America to include Africa.





## Specific examples

## Procurement from the Cove Point shale gas project, achieving three ways of diversification

In fiscal 2017, Tokyo Gas is beginning to receive LNG from the Cove Point LNG Project, our first from the gas-rich shale source in North America. In addition to diversification of our suppliers and total contract terms and conditions through the procurement from Cove Point, we signed a memorandum of understanding on a strategic alliance with Centrica, the UK's leading energy and services company in November 2016, which contributes to diversification of the LNG network.







## Diversify contract terms and conditions

By adding contracts linked to the U.S. natural gas prices and other benchmarks, in addition to conventional crude oil price-linked contracts, we aim to have a better balanced portfolio of contracts and thereby to stabilize procurement costs. We also intend to increase the number of contracts which allow us freedom to determine shipment destinations and other matters to enhance our flexibility.



## Anticipatory diversification to achieve stable and affordable LNG procurement

Japan heavily relies on imports for natural gas procurements. Prices for imported LNG generally set under a mechanism linked to the price of crude oil. Aiming for stable and affordable LNG procurement with these given conditions in the background, the Tokyo Gas Group has been using an LNG procurement strategy that calls for diversified procurement sources, flexibility in setting contract terms and conditions, and developing its LNG supply network.





## Diversify our LNG network

By establishing an LNG network that connects the markets in Europe, Asia, and North America, we aim to reduce cost differentials among regions and to position ourselves to flexibly adjust demand and supply.



	Procurement from Cove Point	
Diversify resource suppliers	Being supplied from the LNG project originated from the shale gas source in the U.S.A.	
Diversify contract terms and conditions	Linked to the U.S. natural gas prices, no restrictions on destinations	
<b>3</b> Diversify our LNG network	LNG that Tokyo Gas procures from the U.S. project will be exchanged with LNG Centrica procures in the Asia Pacific region on a cargo unit basis, toward realizing cost reduction by increasing the efficiency of LNG transport	
	Signed a memorandum of understanding on a strategic alliance with Centrica (UK)	



## Advantages of natural gas

#### Benefits of fuel conversion

Eco-friendly; no need for storage; improved operability (no clean-up); labor saving; stable supply

#### CO2 emission reduction by fuel conversion

Comparison of CO<sub>2</sub> Emissions (Coal=100)

Natural gas	Oil	Coal
60	80	100

## CO<sub>2</sub> emission reduction by use of advanced (high efficiency) facilities

Gas processing facilities designed for high efficiency require less energy for industrial heat sources and emit less CO<sub>2</sub>



## Expansion of Natural Gas Usage through Infrastructure Development

## Investment of ¥730 billion in nine years in domestic infrastructure

Under the Challenge 2020 Vision, Tokyo Gas plans to invest around ¥730 billion, equivalent to 35% of its total investment budget, in domestic infrastructure upgrades over the nineyear period from fiscal 2012 to fiscal 2020.

We are expanding and improving the pipeline network to secure stable and reliable supply of our gas to users and to increase use of natural gas. In keeping with our plan to make a high-pressure line network in the form of a loop for enhancement of supply stability and increase in transport capacity, we are preparing to start constructing of the Ibaraki Line, connecting the Ibaraki-Tochigi Line and the Hitachi LNG Terminal with the Chiba-Kashima Line.

## Northern Kanto, a region of significant potential demand

Tokyo Gas puts particular strategic emphasis on Northern Kanto which has strong potential demand growth for natural gas owing to the region's large-scale industrial zones. We aim to expand gas sales volume from 15.0 billion m<sup>3</sup> in fiscal 2011 to 22.0 billion m<sup>3</sup> by advancing on two fronts: 1) further enhancing the stability of supply through expanded supply capacity for the development of potential demand and the completion of the pipeline loop; and 2) promoting fuel conversion from heavy oil and kerosene as fuel to natural gas and advanced utilization of natural gas.

## Promoting the widespread use and expansion of distributed energy systems

**Cogeneration systems** supply electricity and heat by using city gas as fuel. In addition to the installation of facilities at the point of demand, cogeneration systems help enhance energy efficiency, reduce the amount of CO<sub>2</sub> emissions, and improve economic efficiency through the conservation of energy by effectively utilizing both electricity and waste heat. Having identified cogeneration system as a strategic product, Tokyo Gas is promoting adoption of **the residential fuel cell system ENE-FARM** and, for commercial and industrial customers, optimal cogeneration systems matching their demand. Since the first unit was launched in 2009, we have added smaller, lower-priced models of this system. As of March 2017, our ENE-FARM installed base had risen to approximately 80,000 units.

In the commercial and industrial area, against the backdrop of increased demand for energy security and business continuity

## GAS BUSINESS

## Gas sales volume in the Kashima area surged to equal 10% of total

As a first step toward capturing potential demand through the development of infrastructure, we completed the Chiba-Kashima Line in March 2012. Gas sales volume increased dramatically in the Kashima Waterfront Industrial Zone to about 10% of our consolidated gas sales volume.

## Tap Northern Kanto's potential market for gas by another fuel conversion initiative

The Saito Line (Soka City, Saitama Prefecture-Koga City, Ibaraki Prefecture) started service in October 2015, followed by the start of service of the Hitachi LNG Terminal and the Ibaraki-Tochigi Line (Hitachi City, Ibaraki Prefecture-Moka City, Tochigi Prefecture) in March 2016. By linking with our existing three terminals in Tokyo Bay and our high-pressure trunk line network, our supply infrastructure has been made more stable. Capitalizing on our infrastructure building in Northern Kanto, Kobelco Power Moka (an affiliate of Kobe Steel) has decided to construct a gas-fueled thermal power plant in Moka City, Tochigi Prefecture near our facility. In addition to the projection of an increased gas sales volume by supplying gas to this power plant, we anticipate that it will enable us to increase our business. In order to complete our infrastructure base in Northern Kanto, we have decided to construct an Ibaraki Line between Hitachi City and Kamisu City. This will enable us to develop further demand in the Kashima area and increase use of natural gas in the Kanto Region.

#### Wider Energy Supply Business in Northern Kanto

## Area-wide Energy supply to Kiyohara Industrial Park

We began construction of an energy center, mainly consisting of a 30MW-class cogeneration system, to supply electricity and heat to multiple offices (three companies and seven offices) in the Kiyohara Industrial Park in Utsunomiya City, Tochigi Prefecture in October 2016. The Tokyo Gas Group, to achieve maximum efficiency in serving these customers, will monitor the fluctuating load of each office and engage in optimally balanced operation to supply energy. This will be one of the largest area-wide energy supply undertakings in an inland industrial park in Japan. We are thus promoting widespread use and expansion of distributed energy systems and tapping industrial demand in Northern Kanto.



## Provide energy solutions centered on natural gas to promote diversified use of natural gas and to advance the LNG value chain.

plans, we have been promoting sales of commercial and industrial cogeneration systems, and the scale of our cumulative installed base of these systems has reached 2,020 MW. Aiming at widespread adoption, we are increasing the product line-up by offering an easy-to-install package type and a model with reduced low maintenance costs.



\*Energy efficiency stated above is calculated based on certain assumptions made by Tokyo Gas

#### Installation Plans for ENE-FARM (Residential) and Cogeneration System (Commercial, Industrial)

ENE-FARM (Residential) Installation Plan (LH) Cogeneration System (Commercial, Industrial) Installation Plan (RH) (MM)(Thousands units) 500 5,000 4,000 4,000 400 **300** 3,000 300 2 0 2 0 2,000 200 1.620 1,780 1.790 1.850 1,500 100 79.5 1,000 614 43.4 29.4 17.2 9.6 0 0 2012.3 2013.3 2014.3 2015.3 2016.3 2017.3 2021.3 (Plan)

# ELECTRIC POWER BU

Outline Since 2000 when the Tokyo Gas Group started to generate and supply the electric power, it has engaged in a comprehensive range of business activities that extend from fuel procurement to power generation and sales. Among the new entrants to the sector following the start of its deregulation program, we own the largest-scale power station in the Greater Tokyo Area and sell generated power to wholesale and large-lot customers. With the completion of deregulation of the retail electric power sector in April 2016, we started electricity sales to residential and commercial customers.

By our responding to customers' needs for more affordable, reliable, and safe energy, we aim to significantly expand our electric power business and to raise corporate value.

Net sales	Number of Customers	Electricity Sales Volume
¥145.7 billion	728,000	12.7 billion kWh
FY2016	FY2016	FY2016

Net Sales and Operating Profit



Strengths

Risks

- The largest-scale, highly-efficient power sources among the new power suppliers in the Greater Tokyo Area
- Community-based sales network (operated by Tokyo Gas Lifeval, Enesta, etc.) and over 11 million customers as a base
- Infrastructure and operating know-how and system
- Decline in price competitiveness of LNG thermal power generation, associated with changes in prices of raw materials and fuels
- Potential damage to power generation facilities and supply issues of raw materials and fuels, stemming from a large-scale disaster





## Toward realizing our Challenge 2020 Vision

Deregulation of the retail market, that completed the government's program for electric power and gas system reform, is being used to provide impetus for the Tokyo Gas Group to greatly advance toward expanding as a "total energy" concern. Following the electricity retail deregulation program in 2016, the gas retail deregulation was completed in 2017. While competition is likely to become intensified, we are expecting to gain more earnings opportunities by entering the much bigger electricity retail market.

In the Challenge 2020 Vision, we aim to evolve our total energy business including the electricity retail business, and expand the ratio of "electric power, LNG sales, and other business" from 20% of consolidated net earnings when the plan was adopted to 25% by fiscal 2020.

## Full Deregulated Market of the Electricity and Gas



\* Former general electric power operators, former general gas operators





# TOKYO GAS ANNUAL REPORT 2017

# SINESS





## What we achieved in the first year of the complete deregulation of the electric power retail market

We have marketed the "Zuttomo Plan", a package that includes gas, electric power, and various other services, to support our expansion in the electric power retail market. As of March 31, 2017, we signed plan contracts with 728,000 customers, acquiring the No. 1 position among new entrants in the low-voltage market.

Entering the second year, we are working on retaining the No. 1 position in the number of contracts among new entrants and introducing new service menus, in order to achieve the year's target of having one million customers. At the same time, we are aiming at becoming the "Best Power Supplier" in terms of customer satisfaction so that those who have switched to Tokyo Gas will be content with their decision.

# Objective: Selling about 10% of electricity demand in the Greater Tokyo Area

Using the advent in 2016 of completion of electricity retail deregulation, the Tokyo Gas Group expanded sales to residential and commercial customers in addition to the wholesale segment, selling electricity volume of around 12.7 billion kWh in fiscal 2016. We plan to sell about 30 billion kWh, equivalent to about 10% of demand in the Greater Tokyo Area, by 2020.

## Number of Low-Voltage Customer Contracts



\* Aiming to become the best power supplier, meaning No. 1 power supplier in customer satisfaction



## What we will do in and after the second year since the complete deregulation of the electricity retail sector

In light of the objectives of the electric power system reforms and of the needs of customers, Tokyo Gas is working at establishing a demand and supply structure that contributes to greater stability of supply, supplies affordable energy, and helps diversify services offered to customers. To do this we established the Power Business Division and are undertaking a variety of measures to expand its electric power business.



## Expand power sources

Prompted by completion in 2016 of deregulation of electricity retailing, we are aiming at delivering electricity to low-voltage residential and commercial customers, in addition to serving the wholesale market, and we plan to expand generation capacity from the current level of approximately 1,600 MW (own equity base) to around 3,000 MW by 2020. In addition to the Tokyo Gas Group's power stations, it has been agreed that electric power generated at Moka Power Station, which is under construction by Kobe Steel, one of the largest Independent Power Producers (IPP), will be supplied to Tokyo Gas. Adding to our competitive gas-fired thermal power sources and base load supply sources, we will also promote initiatives aimed at expanding renewable power sources in order to address the issue of preventing climate change.





#### The Group's Natural Gas-Fired Thermal Power Plants

	Recent Initiatives
Sep. 2014	Concluded an agreement with Kobe Steel, Ltd. for the supply of electricity from the Moka Power Station (1,200 MW; operations scheduled to commence from fiscal 2019)
Jan. 2016	Submitted the "Environmental Impact Statement" for the construction plan of the coal-fired thermal power plant (power generation scale up to a maximum of 2,000 MW by mid-2020s) of Chiba-Sodegaura Energy Co., Ltd. (investment by Idemitsu Kosan, 33%; Kyushu Electric Power, 33%; Tokyo Gas, 33%)
Feb. 2016	Ohgishima Power (investment by Showa Shell Sekiyu, 25%; Tokyo Gas, 75%) started operation of the No. 3 of Ohgishima Power Station, expanding the Tokyo Gas Group's Power source to approximately 1,600 MW
Mar. 2016	Received the subsidy of Fukushima Prefecture's wind power generation optimal location selection business and began a study of wind conditions.
Feb. 2017	Formed a business alliance with Shizen Energy Inc., with the objective of acquiring around 60MW of solar power generation sources

Shizen Energy Inc. specializes in solar power generation and other renewable energy businesses and provides total services, from development to operation and maintenance



## ELECTRIC POWER BUSINESS

## Expand electricity sales to low-voltage customers

We sell electricity through the Tokyo Gas Group companies, such as Tokyo Gas Lifeval, Enesta, and Enefit, as well as through partnerships with companies in various industries, including nearby city gas and LPG suppliers and businesses in a range of other industries, including housing, construction, equipment, and telecommunications services.



## Infrastructure and management know-how and system

In addition to the owned city gas business assets such as LNG terminals, pipelines, and LNG procurement capacity, the Tokyo Gas Group is capable of using distributed-type power generations, including cogeneration systems and fuel cells, know-how for management of electricity generation by use of LNG, and experience in systematic business techniques from utility rate calculation to billing and collection. We will make use of these assets and experiences.

## Community-based sales network and over 11 million customer base

The Tokyo Gas Group has established a community-based sales network with about 200 outlets in the Kanto region enabling us to tailor services to individual customers' needs. The 10,000 employees of Lifeval, through whom there is direct interaction with those customers on behalf of the Tokyo Gas Group, have built strong relationships of trust with over 11 million customers. They are engaged every day in meticulous services that encompass sales calls and maintenance of gas appliances to the opening and closing of gas fixtures when a household moves, gas appliance safety checking, and gas meter reading.

In the retail sales of electricity, in addition to the push-type marketing, involving contacts with these customers at their homes and places of work, we will use our updated website for applications and steadily accumulate more contracts to enhance our customer base.



## Expand electricity sales to high-voltage and extra-high-voltage customers

By establishing Ennet in 2000, jointly with NTT Facilities and Osaka Gas, we have made another change to expand electricity sales. In October 2015, we established Synergia Power Co., Ltd., jointly with Tohoku Electric Power Co., Ltd.



Corporate name	ENNET Corporation
Established	July 7, 2000
Main business	Electricity trading and electricity generation
Shareholders	NTT Facilities 40%; Tokyo Gas 30%, Osaka Gas 30%

From April 2016, Synergia began electricity sales to highvoltage and extra-high-voltage customers in the Kanto Region, mainly in its northern area.



Corporate name	Synergia Power Co., Ltd.
Established	October 1, 2015
Main business	Electricity retail supply to high-voltage and extra- high-voltage customers in the Kanto region, mainly in its northern area
Shareholders	Tohoku Electric Power 50%; Tokyo Gas 50%

# OVERSEAS BUSINESS

Outline We have expanded and increased overseas bases and staff, and have participated in the LNG or natural gas related business projects in Australia, North America, and Southeast Asia, all in order to make overseas business another major earnings source of the Tokyo Gas Group, as indicated in the Challenge 2020 Vision. Looking ahead, the newly-established Global Business Division in April 2017 is spearheading efforts for further business development, constructing of a new portfolio having stronger resistance to undesirable effects of changes in energy prices, and for promotion of adding more value in the existing businesses.

Net sales	Number of participating projects
¥31.9 billion	16
FY2016	Segment assets ¥270.7 billion (as of March 31, 2017)

- Strengths Know-how in the midstream and downstream businesses accumulated in Japan
  - Global network established through activities such as material procurement
     and business participation
  - Business operation can be stalled or expense burden may rise, in response to
    laws and regulations, or business practices, inherent to each country
  - Fluctuation in crude oil/gas prices and foreign exchange rates in the upstream business

#### Net Sales and Number of Projects



Oil Price and Exchange Rate



## Forming an LNG value chain

## North America

Australia

Risks

We are focusing on entry opportunities in the upstream, gas-fired thermal power generation, and gas and electricity supply areas in North America. We envision forming a North America LNG value chain, in which synergies can be generated among businesses, such as by stably supplying gas from one of our upstream projects to our operations in gas-fired thermal power generation and gas supply.

**Upstream Business** Monitoring commodity price trends and carefully estimating the productivity and reserves of gas fields will enable us to form appropriate alliances with experienced operators and invest in prime assets. Along these lines, in May 2017 we acquired rights in a gas development operating company in Texas.

Project Name	Start of Participation	Tokyo Gas Interests
U.S.A. Barnett shale gas development	Mar. 2013	25%
U.S.A. Eagle Ford shale gas development	Jun. 2016	25%
U.S.A. East Texas gas development business	May 2017	30%

Midstream- and Downstream Business When planning gas-fired power generation we will continue to use well-defined criteria to select projects in which to participate, giving due consideration to demand and supply of electricity, competition with other power sources, regulations and business environment by each regional government. We have so far participated in two gas power generation business in the East Coast, where the scale of demand is huge. In gas supply business, we seek to participate in business, in which we can leverage our Group's strength, such as demand development.

Proje	ect Name	Start of Participation	Tokyo Gas Interests
U.S.A.	Natural gas-fired power plant business in New York State (Empire Power Plant)	Oct. 2016	25%
U.S.A.	Natural gas-fired power plant business in Pennsylvania (Birdsboro Power Plant)	Apr. 2017	33.33%

## Focus on operation and management of existing projects

We have invested in five projects in Australia, which has grown as a major LNG supply base to the Far East. Four of these LNG projects are in operation today. Including the Ichthys Project, we will continue to focus on operation and management of those projects, with creation of maximal value in mind.

Upstream Business Four LNG projects that have already begun operation in Australia, are proceeding smoothly. We will continue to focus on operation and management of the five projects, including the lchthys Project still in preparation, to maximize their value.



## Accelerating global development

In the last 12 months, the Tokyo Gas Group decided to participate in six projects in North America, where various entry opportunities are available, and Southeast Asia, where use of natural gas is expanding. Going forward, in addition to new projects mainly in North America and Southeast Asia, we will promote risk management, partly by using past experiences, and add more business values to raise and stabilize earnings.



Upstream Business O Midstream- and Downstream Business

	North America	Southeast Asia	Australia
Upstream Business	Operation and management of existing projects; exploration of new projects	-	Operation and management of existing projects
Midstream- and Downstream Business	Gas-fired thermal power generation; gas and electricity supply	LNG terminal; gas-fired thermal power generation; gas supply; energy service	-

Southeast Asia In Southeast Asia where a greater use of natural gas has been driven by a national policy and high growth of the energy market is projected, we seek to participate in LNG terminal, gas-fired thermal power generation, gas supply, and energy service businesses. In addition to opening offices in Indonesia, Thailand, and Vietnam in 2015, we established a representative office in the Philippines in April 2017. Our ultimate target is to form a Southeast Asia LNG value chain.

Midstream- and Downstream Business By building a relationship with local governments and through alliances with local companies, we intend to increase our participation in midstream- and downstream businesses, while closely monitoring changes in business environment, including relevant policies and regulations. In October 2016, we participated in a natural gas-fired power generation business in Thailand.



Project Name		Start of Participation	Tokyo Gas Interests
Thailand	Bang Bo Power Plant	Oct. 2016	28%

Project Name	LNG Production Capacity (Million tons / year)	Start of Participation	Tokyo Gas Interest (Equity Stake)	Start of Production (Operation)
Darwin	3.0	2003	3.07%	Jan. 2006
Pluto	4.7	2008	5.00%	Apr. 2012
Gorgon	15.6	2009	1.00%	Mar. 2016
Queensland Curtis	8.5	2011	1.25% (Gas Field) / 2.50% (No. 2 Liquefaction Plant)	Dec. 2014
Ichthys	8.9	2012	1.575%	By March 2018 (Plan)

# OTHER BUSINESS



We have identified seven business domains that comprises the formation of our Group: City gas business, Electric power business, Liquid gas business, Living service, Engineering service, Urban development service, and Overseas business. This section contains profiles of the Engineering service, the Urban development service, and the Liquid gas business, three of the domains.

SEE 3

## **Engineering Service Business**

# Providing customer-oriented engineering solutions and expanding areas and business domains

In April 2015 Tokyo Gas Engineering Solutions Corporation (TGES) was established by integrating capabilities in engineering and energy solutions, which used to be separately available within the Group. TGES is providing one-stop solutions that better satisfy the needs of our customers in Japan and abroad in a wide range of domains, stemming from receipt of transported or conveyed resources and production of gas to gas supply, power generation, and energy solutions in the LNG value chain.

In April 2017, we opened new offices in Nagano and Fukuoka. We will partner with the energy suppliers of each region and provide engineering solutions to customers. In addition to expanding business in the Japanese market, we intend to expand business overseas.

By bundling various engineering solutions available at TGES, we are emphasizing our ability to provide one-stop, diversified solutions.





#### **Diagram of Engineering Solution Supply**



## Unique engineering solutions, leveraging accumulated know-how

## Japan



## Area-wide use of distributed energy to significantly conserve energy and reduce CO<sub>2</sub> emissions

The cogeneration system (CGS) recovers and uses otherwise wasted thermal energy to generate electricity for heating. Higher CGS capacity results in higher efficiency.

One office can install only a small CGS for an optimal balance of electricity and heat. However, by combining multiple customers with various needs, a larger CGS can be installed and realize a higher-level of energy saving than a single-type CGS can achieve.

As an example, Nissan Motor's Yokohama Plant wanted to cut back grid power usage during peak hours by using in-house power generation and to secure power sources in case of emergency. We therefore installed a large gas cogeneration system and supplied electric power to the plant. Then in 2016 we began to supply steam generated by the gas cogeneration system to J-Oil Mills' Yokohama Plant, which is located across the street from Nissan's plant and had a high thermal energy demand. As a result, approximately 3% energy saving and 6% reduction in  $CO_2$  emissions were achieved in aggregate.

At the Kiyohara Industrial Park in Utsunomiya City, we are constructing a Smart Energy center to provide energy services to three companies and seven offices in the park. This will be Japan's first "integrated energy-saving business serving multiple plants" to supply electricity and heat to multiple businesses of different sectors in an inland-type industrial park. Due to adoption of a large-scale CGS and an energy management system, approximately 20% in energy saving and reduction in  $CO_2$  emissions are projected. Without being hindered by the conventional methods, we are thus providing valuable services and contributing to energy saving and reduction in  $CO_2$  emissions.



#### Energy service business

TGES' overseas subsidiary will provide energy services to the Toray Group's plants in Malaysia and the U.S.A. The energy services comprise construction of an energy plant that has gas cogeneration systems, boilers, and equipment such as for air-conditioning and water treatment, and efficient supply of a wide range of services involving generated electricity, steam, water, and other resources. Based on its proven achievement, TGES' plant design and maintenance will enable to realize energy savings from its optimal systems and long-running cost reductions. In return, TGES will receive energy service fees, based on its long-term customer contract.



#### **Engineering business**

TGES was awarded an order for assignment as a project management contractor (PMC) of the capacity expansion construction project of PPT LNG Map Ta Phut Receiving Terminals, Thailand. This is the first PMC order of its kind received by a Japanese company outside Japan. This is also the first LNG terminal in Thailand in anticipation of substantial growth in energy demand in keeping with the nation's economic development.

The Tokyo Gas Group intends to further promote overseas business development, leveraging by its frontrunner experience and strengths in construction, operation, maintenance, and management of LNG terminals.





#### **Urban Development Service (Real Estate) Business**

## Generating stable earnings by effective use of high-potential sites owned by Tokyo Gas

The Tokyo Gas Group owns high-potential, large-scale properties in locations such as Tamachi and Toyosu in Tokyo. We are developing those properties, while limiting associated risks, in order to improve asset value by their effective use. In April 2017, we established Tokyo Gas Real Estate Holdings Co., Ltd. as a general management company. As the Group's

## Tamachi Large-scale development with direct connections to JR Tamachi Station

Tamachi Station and its surrounding area are expected to play the role of a gateway to Tokyo, as it is close to the Linear Chuo Shinkansen Line route and has easy access to Haneda Airport which has a plan for further development. Office and hotel buildings and commercial facilities are under construction on this 2.8ha site, and will be directly connected to Tamachi Station.

Started construction of the Tamachi Station Tower S, the Hotel Tower, and the Smart Energy Center October 2015 Summer 2017 Started construction of the Tamachi Station Tower N 2018 Complete construction of the Smart Energy Center (plan) April Complete construction of the Tamachi Station Tower S and the Hotel 2018 May Tower (plan) Fall 2018 Start hotel operation (plan) Spring 2020 Complete construction of the Tamachi Station Tower N (plan) JR Tamachi Station Hotel Minato Park Shibaura Statio Aiiku Urban Planning Park **Redevelopment area** msb Tamachi ab Tamaa

urban development service business, we aim for expanding profits to contribute to community-based energy proposals and community development through effective use and management of properties and cooperation with strong players in the real estate industry.

## Toyosu Complex town planning project in the intended locations of the Tokyo 2020 Olympics

The redevelopment area in Toyosu is a prime location, about 4km away from Tokyo Station. The Tokyo Bay area, including Toyosu, is getting increased attention as it will be a major location of the Tokyo 2020 Olympics and Paralympics events. The Tokyo Gas Group is involved in construction of a combination of residential, office, and commercial facilities in this widespread development area of approximately 20ha.



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#### **Liquid Gas Business**

In April 2016 we established Tokyo Gas Liquid Holdings Co., Ltd. to integrate and enhance strategy planning and promotion of the liquid gas business, to sell LPG and manufacture and sell industrial gas, using LNG cold energy, and the cold storage warehouse business.

In the LPG sales business, we aim to grow it as one of profit pillars of the Tokyo Gas Group, by strengthening sales capacity, mergers and acquisitions, and through alliances. Specifically, as a new measure to help construct a highlyefficient logistics network and improve maintenance levels and

#### Alliances

October 2016	Concluded the Basic Agreement for a Comprehensive Alliance with Astomos Energy
February 2017	Concluded the Basic Agreement for a Comprehensive Alliance with Saisan

LPG Business: Target in Number of Customers

(thousand)



customer services, we are seeking alliances with LPG players who have different strengths. Our target is to have one million or more customers by 2020, including 300,000 direct sales customers from the Tokyo Gas Group.

As for industrial gas, we make effective use of LNG cold energy, and manufacture and sell high-grade affordable industrial gas. We also plan to enhance sales capability by offering one-stop solutions to large-account customers by combining LNG, engineering, and other services of Tokyo Gas.

#### Structure of Tokyo Gas Liquid Holdings

Т	okyo Gas Liquid Holding	js
Tokyo Gas Energy	Tokyo Gas Chemical	Japan Super Freeze
Sales of LPG	Manufacturing and sales of industrial gas, using LNG cold energy	Cold storage warehousing, using LNG cold energy

A cold storage warehouse of Japan Super Freeze

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## **Corporate Governance**

Tokyo Gas works to ensure continued development while consistently earning the trust of customers, shareholders, and society. Based on this philosophy, we aim to achieve a continuous increase in our corporate value through enhancing corporate governance systems. We are endeavoring to develop systems with a commitment to management legality, soundness, and transparency. Tokyo Gas continues to emphasize the importance of accurate and prompt decision making, efficient business operations, strengthening of auditing and monitoring functions, and clarification of management and executive responsibilities.

## **Board of Directors**

In principle, the Board of Directors meets once a month to discuss and decide important matters regarding business operations. Directors must submit reports to the Board of Directors regarding the status of execution of their duties periodically and when deemed necessary, allowing the Board to monitor the performance of directors.

The Board of Directors comprises 11 directors, 3 of whom are outside directors. In addition, the term of directors is set at one year with the goal of further clarifying managerial responsibility.

#### **Outside Directors**

In accordance with their individual experience and knowledge, the outside directors strive to secure the soundness and appropriateness of deliberations and decisions regarding business execution. From an independent viewpoint, the outside directors monitor the performance of duties by the directors and exercise their authority at meetings of the Board of Directors. In this way, the outside directors contribute to the improvement of the rationality and objectivity of the company's business execution and of the deliberations and decisions of the Board of Directors.

In making judgments about matters related to the independence of outside officers, such as capital, transactions, and relationships, we comprehensively verify that they are unlikely to have conflicts of interest with general shareholders and they are in a position that enables them to be objective and neutral, and on that basis we make a judgment on their independence. (The company discloses the Independence Standards for Outside Directors on its website: http://www.tokyo-gas.co.jp/IR/english/gvnnc/pdf/ independence.pdf) The Advisory Committee has confirmed that none of the outside officers has a material conflict of interest with the company-in regard to capital, transactions, or relationships-and has confirmed their independence in accordance with the above standards. The committee's decision has been reported to the Board of Directors, which has designated them as independent officers and reported that designation to the stock exchanges on which the company is listed.

## Realizing Accurate and Rapid Decision Making, and Efficient Business Execution

The Corporate Executive Committee, which meets weekly as a general rule, deliberates on provisions stemming from Board of Directors' resolutions and important managementrelated issues. The company has introduced an executive officer system for business execution in accordance with decisions of the Board of Directors. Substantial authority has been delegated to executive officers in their designated areas of responsibility, while directors, as appropriate, receive reports on the status of execution from executive officers and monitor the executive officers. In addition, executive officers report to the Board of Directors as needed. (To clarify management responsibility and executive responsibility, the terms of office of directors and executive officers have been fixed at one year.)

## Analysis and Evaluation of Effectiveness of the Board of Directors

To maintain and enhance effectiveness of the Board of Directors, the Board analyzed and evaluated its effectiveness in fiscal 2016 as last year. Specifically, the Board took into account of self-evaluation of each director in the form of a questionnaire, and discussed its outcome and the Board's effectiveness. According to the results of the questionnaire, no item scored less than 4 on average in the five-point scale, and no item showed a decline of 0.5 or more on the average score. It has therefore been confirmed that no major improvement is needed. Concerning the items related to the Board's function as a place to discuss medium- to long-term policies and strategies, the scores were lower than those of other items again, as in fiscal 2015. We will further enhance the effectiveness of the Board of Directors in this area, by taking into account their numerous discussions in fiscal 2016.




### **Corporate Governance System**

1 Board of Directors: 11 directors (3 outside directors and 8 internal directors), 5 Audit & Supervisory Board members (3 outside auditors and 2 internal auditors) 2 Advisory Committee: 3 representatives from outside directors and outside Audit & Supervisory Board members, Chairman (1), and President (1)

3 Audit & Supervisory Board: 5 Audit & Supervisory Board members (3 outside auditors and 2 internal auditors)

4 Corporate Executive Committee: President, 2 Executive Vice Presidents, and 11 Senior Executive Officers (3 of the representative directors also serve as President and Executive Vice Presidents)

Overview of Corporate Governance System (As of June 29, 2017)					
Number of directors	11	Participation of outside directors in determination of director candidates	Yes		
Average age of directors	62.0	Number of meetings of Board of Directors*	12		
Number of outside directors	3	Attendance rate of outside directors at meetings of Board of Directors*	100%		
Number of Audit & Supervisory Board members	5	Term of office of directors	One year		
Number of outside Audit & Supervisory Board members	3	Performance-linked remuneration	Yes		
Number of independent officers	6	Share purchase system to reflect the perspective of shareholders in management	Yes		
Participation of outside directors / outside Audit & Supervisory Board members in determination of remuneration	Yes	* Total for the period from April 2016	to March 2017		

### Working to Promote Transparent Management and Create a Flexible and Open Corporate Culture

In fiscal 2002, the company established the Management Ethics Committee, chaired by the President. We also formed in-house committees to address issues that are important from a management perspective, such as compliance,

safety, customer satisfaction, and risk management. This structure facilitates the sharing of information within the group as well as deliberations and adjustments regarding the group's overall direction.

### Audit & Supervisory Board Members

The Audit & Supervisory Board members meet once a month as a general rule and otherwise as needed. The 5 members of the board, which include 3 outside Audit & Supervisory Board members, conduct deliberations and make reports. In line with the Corporate Auditor's Audit Standards, each Audit & Supervisory Board member conducts effective audits through the following principal initiatives.

The Audit & Supervisory Board members attend meetings of the Board of Directors, the Corporate Executive Committee, and other important meetings. They state their opinions relating to legality and other perspectives when necessary.

The Audit & Supervisory Board members conduct research into the state of operations at the head office, business offices, and subsidiaries and hold discussions with directors to exchange opinions, both on a regular basis and otherwise as needed.

In regard to the internal control system for financial reporting, the Audit & Supervisory Board members receive evaluations of internal control and reports on the status of audits from the Board of Directors, etc., and KPMG AZSA LLC.

### **Outside Audit & Supervisory Board Members**

The outside Audit & Supervisory Board members conduct audits monitoring from an independent viewpoint and contribute to improving the rationality and objectivity of the company's business execution and of the deliberations of the Board of Directors through their statements at meetings of the Board of Directors. In addition, through their statements and the exercise of their majority voting rights at meetings of the Audit & Supervisory Board, the outside Audit & Supervisory Board members contribute to assuring and improving the legality, appropriateness, rationality, and objectivity of the audits by the Audit & Supervisory Board members. In addition, with the objective of assuring the effectiveness of audits by the Audit & Supervisory Board members, the company invites outside Audit & Supervisory Board members who have a substantial degree of knowledge about finance and accounting.

In making judgments about matters related to the independence of outside officers, such as capital, transactions, and relationships, we comprehensively verify that they are unlikely to have conflicts of interest with general shareholders and they are in a position that enables them to be objective and neutral, and on that basis we make a judgment on their independence. The Advisory Committee has confirmed that none of the outside officers has a material interest with the company—in regard to capital, transactions, or relationships—and has confirmed their independence in accordance with the above standards. The committee's decision has been reported to the Board of Directors, which has designated them as independent officers and reported that designation to the stock exchanges on which the company is listed.



### **Officer Remuneration**

In 2005, the company formulated the basic policy on officer remuneration, which outlines the method of remuneration for directors, etc. At a meeting of the Board of Directors in February 2012, the policy was revised as follows.

#### **1** Role of Officers and Remuneration

The role demanded of officers is to seek to enhance short-, medium-, and long-term corporate value, and officer remuneration shall serve as an effective incentive for them to perform that role.

#### 2 Level of Remuneration

The level of officer remuneration shall be suitable for the role, responsibility, and performance of the officer.

### 3 Composition and Other Details of Remuneration Paid to Directors

 Remuneration of directors shall be paid within the scope of the remuneration limit approved at the General Shareholders' Meeting.

(2) Remuneration of inside directors shall comprise monthly remuneration and bonus. Monthly remuneration shall comprise fixed remuneration paid in accordance with the post of each individual and performance-linked remuneration. A portion of fixed remuneration shall be allocated to the purchase of shares based on a share-purchase guideline and from the standpoints of reflecting the perspectives of shareholders on management and improving shareholder value over the long term. The amount of performance-linked remuneration shall be determined after evaluating companywide performance and performance of operating units from the standpoints of motivating inside directors to execute management strategies and reflecting their performance clearly in their remuneration. The amount of bonus to be paid shall be determined in accordance with the post of each inside director after performance evaluation.

(3) Remuneration of outside directors shall comprise monthly remuneration and bonus. Monthly remuneration shall comprise only fixed remuneration, while bonus shall be the same as that of inside directors.

### 4 Composition and Other Details of Remuneration Paid to Audit & Supervisory Board Members

(1) Remuneration of Audit & Supervisory Board members shall be paid within the scope of the remuneration limit approved at the General Shareholders' Meeting and determined through discussions among Audit & Supervisory Board members.

(2) Remuneration of Audit & Supervisory Board members shall comprise only fixed monthly remuneration.

### 5 Assurance of Objectivity and Transparency of the Remuneration System

The company shall assure the objectivity and transparency of the system of officer remuneration by establishing and operating the Advisory Committee comprising a number of outside directors, outside Audit & Supervisory Board members, and inside directors to govern the system of personnel affairs and remuneration of officers.

### Composition of Remuneration for Directors

**Fixed remuneration** 

\* Monthly remuneration of outside directors are fixed remuneration only

Performance-linked

remuneration

Total Remuneration for Directors and Audit & Supervisory Board Members (Fiscal 2016)						
	Number of officers*1	Total value of remuneration	Base	Bonuses		
Remuneration for directors (excluding outside directors)	10	¥467 million	¥405 million	¥62 million		
Remuneration for Audit & Supervisory Board members (excluding outside Audit & Supervisory Board members)	2	¥74 million	¥74 million	-		
Remuneration for outside officers (outside directors and outside Audit & Supervisory Board members)	7	¥64 million	¥58 million	¥6 million		

\*1 The number of officers included in the total value of remuneration for directors, Audit & Supervisory Board members, and outside officers includes three directors (of which one was outside officer) who retired upon the conclusion of the 216th Annual Shareholders' Meeting.

### **Advisory Committee**

In February 2005, we established the Advisory Committee to assure objectiveness and transparency in management. It has been defined that this committee will have no more than 6 members consisting of no more than 3 representatives from outside of the company and no more than 3 internal representatives, and that one of the outside representatives will serve as the committee's chairman.

Today, the Advisory Committee has 5 members: 3 representatives from the outside directors and outside Audit & Supervisory Board members as well as the Chairman and the President. In accordance with inquiries from the Board of Directors, the Advisory Committee deliberates on officer candidates and officer remuneration in a fair and appropriate manner and makes reports to the Board of Directors. The committee also deliberates on the independence of outside officer candidates.

### **Internal Control System**

To secure management legality, soundness, and transparency and to realize its management philosophy, the company has formulated the "Basic Policy on Development of Corporate Structures and Systems for Internal Control System" and the company is applying this policy in an appropriate manner. Specifically, the company has established systems to ensure that directors and their assistants perform their duties in a manner that is compliant to relevant laws and regulations, the articles of incorporation, and other rules. In addition, crisis management provisions have been formulated to limit losses from risks related to investments and natural disasters. The company also defines guidelines for ensuring the independence of Audit & Supervisory Board members and guaranteeing the effectiveness of the Audit & Supervisory Board.

### **Independent Auditors**

The company has concluded an auditing contract with KPMG AZSA LLC for auditing services based on the Companies Act and auditing services based on the Financial Instruments and Exchange Act, as well as internal control audits based on the Financial Instruments and Exchange Act, and the company is being audited on that basis. The company's audits are handled by 3 certified public accountants: Teruhiko Tanaka, Yoshihide Takehisa, and Yoshihiro Uehara. For each of these auditors, the number of consecutive years of auditing service is seven years or less (as of June 29 2017).

### Compensation for Independent Auditors (Fiscal 2016)

Total	¥278 million
Compensation for non-auditing services	¥21 million
Compensation for auditing services	¥257 million

### Compliance

### **Compliance Structure**

The company has identified the following three points as its basic policy and is promoting compliance on that basis.

Fostering of a compliance oriented mentality Compliance efforts through coordination among divisions based on the fundamental policy Promotion of the compliance PDCA cycle

We have established the Management Ethics Committee, chaired by the President. This committee discusses at the executive level basic compliance policies and all aspects of compliance initiatives by the company, monitors the implementation of compliance-related measures, and confirms activity programs from the following year and thereafter. The Compliance Department operates counseling service counters, distributes information within and beyond the Tokyo Gas Group companies, and promotes a thorough awareness of ongoing activities related to our Code of Conduct, which represents a compliance standard of the Tokyo Gas Group and was revised in April 2017, so as to further meet the expectations of society. The Compliance Department also supports a wide range of compliance-related activities for each department. These include development of compliance promotion systems, encouragement awareness and educational campaigns about the Code of Conduct, and compliance risk reduction measures.

### **Compliance Risk Management**

Through the effective operation of internal and external advisory systems, we are endeavoring to ensure that compliance-related problems are discovered and resolved quickly so that our corporate self-regulatory processes will continue to function effectively. We monitor the effectiveness of Group compliance promotion activities by conducting regular compliance awareness surveys of all employees. The results of these surveys are reflected in initiatives for the following years. The Compliance Audit Sect. of the Internal Audit Dept. conducts audits of the company and its subsidiaries focusing on the probability that risks will materialize and their degree of importance from the viewpoint of strict compliance with laws, corporate ethics, and social norms. When concerns are identified, the group conducts follow-up audits in the following year to verify progress in tackling those concerns.

### **Risk Management System**

#### Enterprise Risk Management System

In fiscal 2003, the company established an enterprise risk management (ERM) system and drew up risk management regulations, which include documented rules concerning major risks faced by the group.

The Risk Management Committee was established in fiscal 2008 with the aim of tracking progress regarding the establishment and the operational status of the ERM system as well as improving the level of ERM. The committee periodically undertakes risk assessments and checks on the status of the ERM system. It also reports to the Corporate Executive Committee and obtains the necessary approvals. Moreover, in fiscal 2011, the risk management function was made the responsibility of the Corporate Planning Department, and there has been a framework in place for implementing unified ERM in conjunction with operational management.

Under the framework, around 120 Risk Management Promotion Officers are deployed in the business departments of Tokyo Gas and its subsidiaries in order to promote ERM. Each year, we assess risks and the implementation and improvement status of countermeasures. This system facilitates the steady implementation of the ERM-PDCA (Plan-Do-Check-Act) cycle.

### Crisis Management System

Because the company provides public services that comprise a lifeline, for many years it has also had a crisis management system that serves as a response system in case an accident or other risk-related event actually occurs. Specifically, we have formulated Emergency Response Organization Regulations. In case of crises, including major natural disasters, such as earthquakes, or production or supply disruptions arising from major accidents at pipelines or terminals, as well as influenza, terrorism, failures in missioncritical IT systems, and compliance problems, the Emergency Response Organization responds to the situation immediately in accordance with the Emergency Response Organization Regulations. Periodic training is conducted in relation to major risk response measures. Moreover, the company has also formulated a business continuity plan (BCP), outlining its responses in the event of a major earthquake of the magnitude assumed by Japan's Cabinet Office, a major accident disrupting gas supply, a widespread blackout, an outbreak of influenza, etc. This plan is in place to reinforce the company's risk management system.



#### **Emergency Response Organization**



The organizational unit in charge of the executive office is determined in advance in accordance with the type of the emergency.

(Group-wide coordination)

### Board of Directors (As of June 29, 2017)



Apri



- 1997 Deputy Chief Executive of Northern Regional April Business Div. Apri
- 1998 General Manager of Documents Dept. June 1999 Assistant to Director in charge of General Administration Dept. June

1970 Joined the Company

- 2002 Executive Officer and General Manager of Corporate Planning Dept. of Strategic Planning Div. June
- 2004 Senior Executive Officer and Chief Executive of Strategic Planning Div. April June
- 2004 Director, Senior Executive Officer and Chief Executive of Strategic Planning Div. April
- 2006 Director, Senior Executive Officer, Chief Executive of Corporate Communication Div. and in charge of Compliance Dept. and Internal Audit Dept. 2007 Representative Director, Executive Vice President and in charge of Personnel Dept., Secretary Dept., Apri
- General Administration Dept., Compliance Dept and Internal Audit Dept. 2009 Representative Director, Executive Vice President April
- and in charge of Personnel Dept., Secretary Dept., General Administration Dept. and Compliance Dept April 2010 Representative Director, President
- 2014 Director and Chairman of the Board April
- 2016 Outside Director of JAPAN POST BANK Co., Ltd June

- 2004 Executive Officer and Assistant to Chief Executive of Corporate Communication Div. 2006 Executive Officer and General Manager of Corporate Planning Dept. of Strategic Planning Div Senior Executive Officer and in charge of Corporate Planning Dept., Infrastructure Project
- Dept., Finance Dept., Accounting Dept. and Affiliated Companies Dept. 2008 Senior Executive Officer and in charge of April Corporate Planning Dept., Investor Relations Dept., Finance Dept., Accounting Dept., Affiliated
- Companies Dept. and Gas Industry Privatization Research Project Dept. April 2009 Senior Executive Officer and in charge of Corporate
- Planning Dept. and Affiliated Companies Dept 2009 Director, Senior Executive Officer and in June
- charge of Corporate Planning Dept., Corporate Communications Dept. and Affiliated Companies Dept.
- January 2010 Director, Senior Executive Officer and in charge of Corporate Planning Dept., Project Management Dept., Corporate Communications Dept. and Affiliated Companies Dept.
- April 2012 Representative Director, Executive Vice President and Chief Executive of Living Energy Div. 2013 Representative Director, Executive Vice President and
- April Chief Executive of Residential Sales and Service Div. 2014 Representative Director, President April



- 1979 Joined the Company April 2006 General Manager of Pipeline Planning Dept. of June Pipeline Network Div April
- 2009 General Manager of Corporate Planning Dept. 2010 Executive Officer and General Manager of Corporate Planning Dept. April 2012 Senior Executive Officer and in charge of Personnel Dept., Secretary Dept., Compliance Dept. and Internal Audit Dept. April
- 2013 Senior Executive Officer and Chief Executive of Energy Resources Div. April
- 2015 Director, Senior Executive Officer and Chief Executive of Energy Resources Div. June
- 2016 Representative Director, Executive Vice President and Chief Executive of Residential Sales and Service Div.
- 2017 Representative Director, Executive Vice President April and Chief Executive of Residential Service Div.

### Kunio Nohata Director





Akihiko Ide Outside Director



- April 1984 Joined the Company
- November 2006 General Manager of Infrastructure Project Dept. April 2008 Acting General Manager of Energy Sales & Service
- Planning Dept. of Energy Solution Div. 2009 General Manager of Total Energy Business Dept. of April Energy Solution Div.
- General Manager of Gas Resources Dept. of 2011 April Energy Resources Business Div. 2013 Executive Officer and General Manager of Gas
- April Resources Dept. of Energy Resources Business Div. 2015 Senior Executive Officer, April
- President, Representative Director of Tokvo Gas Engineering Solutions Corporation
- Senior Executive Officer of the Company, Chief April 2017 Executive of Power Business Div., In charge of Environmental Affairs Dept.
- Director, Senior Executive Officer of the Company, Chief Executive of Power Business Div., In charge of Environmental Affairs Dept. June 2017

- 1985 Joined the Company April
- January 2010 General Manager of Project Management Dept. 2012 General Manager of Residential Fuel Cell Business April
- Development Dept. of Living Energy Div. 2015 Executive Officer and General Manager of Sales April Innovation Planning Dept.
- 2016 Senior Executive Officer, Chief Executive of Energy April Resources & Global Business Division. Senior Executive Officer, Chief Executive of Global
- 2017 April Business Div.
- Director, Senior Executive Officer, Chief Executive June 2017 of Global Business Div
- 1965 Joined Mitsubishi Metal Mining Company Ltd. (Current Mitsubishi Materials Corporation) April
- General Manager of General Affairs & Administration Dept. at Mitsubishi Materials 1994 June Corporation
- June 1997 Director of Mitsubishi Materials Corporation June 2000 Managing Director of Mitsubishi Materials
- Corporation 2002 Executive Vice President of Mitsubishi Materials Corporation June
- 2004 President of Mitsubishi Materials Corporation luno
- June 2010 Chairman of Mitsubishi Materials Corporation Director of Sakai Chemical Industry Co., Ltd. 2015 Senior Advisor of Mitsubishi Materials Corporation
- April 2015 Advisor of Mitsubishi Materials Corporation June
- Outside Director of the Company June 2017 Retired as Advisor of Mitsubishi Materials Corporation

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April

June

Corporate governance

### Satoru Yasuoka Representative Director



#### 1979 Joined the Company April

- 2006 General Manager of Industrial Gas Sales Dept. of April Energy Sales and Service Div.
- General Manager of Gas Resources Dept. of Apri Energy Resources Div. Executive Officer and General Manager of Gas Apr
- Resources Dept. of Energy Resources Div. Executive Officer and General Manager of Sales Marketing 1 Dept. of Living Corporate Sales and 2011 Apri Services Div.
- 2012 Senior Executive Officer and Chief Executive of April Regional Development Marketing Div. 2015 Senior Executive Officer and Chief Executive of IT
- April Div. and in charge of Environmental Affairs Dept. and Fundamental Technology Dept.
   2015 Director, Senior Executive Officer and Chief
- June Executive of IT Div. and in charge of Environmental Affairs Dept. and Fundamental Technology Dept. Apri 2016
- Director, Senior Executive Officer and Chief Executive of Energy Solution Div., General Manager of Volume Sales Dept. of Energy Solution Div. Representative Director, Executive Vice President 2017 Apr
- and Chief Executive of Energy Solution Div.



April 1979 Joined the Company April 2009 General Manager of Residential Sales Planning

- Dept. of Living Energy Div. Executive Officer and General Manager of Residential April 2010
- Sales Planning Dept. of Living Energy Div. Senior Executive Officer and Head of Sales 2013 April
- Marketing of Energy Solution Div. Senior Executive Officer and Head of Sales Marketing of Energy Solution Div. and General October 2014
- Manager of Energy Sales & Service Planning Dept. Senior Executive Officer and Chief Executive of 2015 April
- Energy Solution Div. and General Manager of Volume Sales Dept. of Energy Solution Div. April 2016 Senior Executive Officer of the Compan
- President, Representative Director of TOKYO GAS LIQUID HOLDINGS CO., LTD. June
- 2016 Director, Senior Executive Officer of the Company President, Representative Director of TOKYO GAS LIQUID HOLDINGS CO., LTD.





April 1980 Joined the Company

April

Apri

Apri

Apri

Apri

- 2005 General Manager of Home Service Planning Dept April of Home Service Div.
  - General Manager of Business Partnership Support Dept. of Home Service Div.
  - General Manager of LIFVAL Project Management Dept. of Living Energy Div. Executive Officer and General Manager of LIFVAL Project Management Dept. of Living Energy Div. 2011
  - Executive Officer and General Manager of Corporate 2012
  - Planning Dept. Senior Executive Officer and in charge of Corporate Planning Dept. and Affiliated Companies 2014
- Dept. 2015 Senior Executive Officer and in charge of April
  - Corporate Planning Dept., Personnel Dept., Chiba-Ibaraki Project Dept., Group Management Project Dept., and Group Personnel System Project Dept. 2016
- Senior Executive Officer and in charge of Personnel Dept., Secretary Dept., General Administration Dept., Compliance Dept., and Internal Audit Dept. April
- Director, Senior Executive Officer and in charge 2016 June of Personnel Dept., Secretary Dept., General Administration Dept., Compliance Dept., and nternal Audit Dept
- Director, Senior Executive Officer and in charge of Purchasing Dept., Secretary Dept., General Administration Dept., Compliance Dept., and April 2017 Internal Audit Dept.

### Yoshinori Katori Outside Director



Chika Igarashi



- 1973 Joined Ministry of Foreign Affairs April
- August 2004 Director-General of Consular Affairs Bureau August 2005 Press Secretary/Director-General for Press and
- Public Diplomacy of Minister's Secretariat August 2006 Ambassador Extraordinary and Plenipotentiary to the State of Israel
- October 2008 Ambassador for ASEAN, and Science and
- Technology Cooperation, Ministry of Foreign Affairs 2010 Director-General of Foreign Service Training Institute, Ministry of Foreign Affairs April
- 2011 Ambassador Extraordinary and Plenipotentiary to March the State of Indonesia
- October 2014 Retired from Ministry of Foreign Affairs
- 2015 Outside Director of the Company June

- April 1997 Registered as an attorney at law April 1997 Joined a law firm in Tokyo Metropolitan area
- 2006 Joined Asahi Law Office (Currently Nishimura & July Asahi Law Office)
- 2007 Registered as an attorney at law in New York State, June USA
- 2016 Outside Director of the Company June

### **Reasons for selecting Outside Directors**

#### Akihiko Ide

The company's management will benefit from Akihiko Ide's cosmopolitan outlook he has acquired in overseas businesses in the general materials industry, particularly in Asia, as well as the strong management capabilities and deep insight he has acquired through a wide range of business development in resource business and others.

#### Yoshinori Katori

The company's management will benefit from Yoshinori Katori's cosmopolitan and broad outlook as well as the deep insight he has acquired over his many years as a diplomat.

#### Chika Igarashi

The company's management will benefit from Chika Igarashi's advanced legal expertise, broad perspective, and deep insight she has acquired over her many years in corporate legal affairs.

### Audit & Supervisory Board Members (As of June 29, 2017)



- 1978 Joined the Company April 2003 General Manager of Marketing Dept., Living July Planning Div.
- 2004 General Manager of Home Service Planning Dept., April Home Service Div.
- 2005 General Manager of Kanagawa Branch, Corporate Communication Div. April
- 2007 General Manager of Corporate Communications April Dept.
- 2009 Executive Officer and General Manager of Corporate Communications Dept. April
- Communications Dept. 2012 Senior Executive Officer and in charge of Purchasing Dept., Real Estate Management Dept., and Major Site Development Dept. 2013 Senior Executive Officer and in charge of Purchasing Device Device the Device of Purchasing April
- April Dept., Real Estate Management Dept., Personnel Dept., and Internal Audit Dept.
- March 2015 Retired as Senior Executive Officer
- 2015 Audit & Supervisory Board Member of the Company June

- 1979 Joined the Company April
- 2007 General Manager of Pipeline Network Div. April
- 2010 Executive Officer, General Manager of Pipeline Dept., Pipeline Network Div. April
- 2013 Senior Executive Officer, Chief Executive of Pipeline Network Div. April
- April
- 2015 Senior Executive Officer, Chief Executive of Regional Development Marketing Div. April
- 2016 Senior Executive Officer, Chief Executive of Region Div. March 2017 Retired as Senior Executive Officer
- 2017 Audit & Supervisory Board Member of the Company June



April	1969	Joined Export-Import Bank of Japan
October	r 1999	Full-time Auditor of Japan Bank for International Cooperation
October	r2000	Director of Japan Bank for International Cooperation
October	r2004	Vice Governor of Japan Bank for International Cooperation
October	r2008	Representative Director and Senior Managing Executive Officer of Japan Finance Corporation Deputy CEO of Japan Bank for International Cooperation
June	2011	Retired as Deputy CEO of Japan Bank for International Cooperation
December	2011	Advisor of Sumitomo Mitsui Banking Corporation
June	2012	President (Chief Executive Officer) of Japan Institute for Overseas Investment Outside Audit & Supervisory Board Member of the Company
June	2013	Outside Director of Kawasaki Heavy Industries, Ltd. Retired as Advisor of Sumitomo Mitsui Banking Corporation
December	2014	Retired as President (Chief Executive Officer) of Japan Institute for Overseas Investment

### **Executive Officers**

President	Michiaki Hirose	
Executive	Takashi Uchida	Chief Executive of Residential Sales and Service Div.
Vice Presidents	Satoru Yasuoka	Chief Executive of Energy Solution Div.
Senior Executive Officers	Fumio Murazeki	President, Representative Director of TOKYO GAS LIQUID HOLDINGS
Onicers	Masaru Takamatsu	In charge of Purchasing Dept., Secretary Dept., General Administration Dept., Compliance Dept., and Internal Audit Dept.
	Kunio Nohata	Chief Executive of Power Business Div., in charge of Environmental Affairs Dept.
	Takashi Anamizu	Chief Executive of Global Business Div.
	Shin Yamagami	Chief Executive of Information Technology Div. and Technology Research & Innovation Div.
	Isao Nakajima	CFO, in charge of Finance Dept., Accounting Dept. and Personnel Dept.
	Satoru Sawada	In charge of Corporate Planning Dept., Corporate Communications Dept., and Tokyo 2020 Olympic and Paralympic
	Tadashi Komiyama	Chief Executive of Pipeline Network Div.
	Koki Hayakawa	Chief Executive of Region Div.
	Kentaro Kimoto	Chief Executive of Gas Resources & Energy Production Div.
	Hiroshi Kishino	President, Representative Director of Tokyo Gas Living Holdings, and General Manager of Residential Sales & Service Innovation Project Dept. of Residential Sales & Service Div.
Executive Officers	Shinichi Sasayama A	yasu Ishii Nobuhisa Kobayashi Yohei Nitta Tomoyuki Yoshioka yumi Shigitani Minoru Sanari Yoshiharu Kikuyama ashi Higo Isao Hosoya
Executive Specialist	Masami Takayanagi	



Wako Tojima Outside Audit & Supervisory Board Member



April	1985	Joined The Yomiuri Shimbun
March	1991	Retired from The Yomiuri Shimbun Freelance journalist
April	2007	Part-time lecturer at School of Social and International Studies of University of Tsukuba
June	2014	Outside Audit & Supervisory Board Member of Company





 
 April
 1981
 Joined Mitsubishi Corporation

 September 2002
 Head of the secretariat of Government Exhibition Projects for EXPO 2005 Aichi, Japan, Producer Associates Co. Ltd.

 April
 2004
 General Manager of Planning & Event Office of Government Exhibition Projects Dept., Japan Association for the 2005 World Exposition

 April
 2007
 Joined City of Yokohama

 Director General Of City Growth Strategy Promotion Department, Economic Affairs Bureau, City of Yokohama
 April

 April
 2009
 General Manager of Climate Change Policy

- Project, City of Yokohama May 2011 General Manager of Climate Change Policy Headouarters. City of Yokohama
- April 2012 Executive Director of Future City Promotion, Climate Change Policy Headquarters, City of
- April 2016 Consultant of Future City Promotion, Climate Chose Policy Headquisters, City of Valabama
- Change Policy Headquarters, City of Yokohama June 2017 Outside Audit & Supervisory Board Member of the Company

### Reasons for Selecting Outside Audit & Supervisory Board Members

#### Yoshihiko Morita

The company's auditing will benefit from Yoshihiko Morita's expansive international way of thinking and deep insight nurtured through work in the fields of international finance and overseas economic cooperation.

> Major concurrent positions Outside Director of Kawasaki Heavy Industries, Ltd.

#### Wako Tojima

The company's auditing will benefit from Wako Tojima's wealth of expertise and deep insight as a science journalist.

#### Masato Nobutoki

The company's auditing will benefit from Masato Nobutoki's abundant experience acquired in corporate and local government as well as his deep insight.

Message from an Outside Audit & Supervisory Board Member

### Masato Nobutoki



### Using my experience in the industry, government, and academics, I intend to contribute to Tokyo Gas's value creation.

### Appointed as Outside Audit & Supervisory Board Member in June 2017

After working in a major trading company, I served as administrative head of the main office of Government Exhibition Projects for EXPO 2005 Aichi, and have since been involved in various other capacities, such as in the area of community alliance business at a university. In 2007 I joined City of Yokohama and became engaged in city management and various climate change policies in positions such as Director General of the City Growth Strategy Promotion Department and General Manager of Climate Change Policy Headquarters. I have had business relations with Tokvo Gas through a smart grid experiment that City of Yokohama was designated to conduct by the national government in 2010. My impression of Tokyo Gas since that time is that its employees go about their work from a citizen's point of view and are not as arrogant as oftentimes seen with many people in big companies. I think it has much to do with the fact that Tokyo Gas provides special services based on a sales network focused on a vast number of individual households. In the context

of accelerating movement toward local production and local consumption of energy in Japan (and elsewhere), I strongly believe that the communitycentered network of Tokyo Gas is a big advantage.

## Using my experience in interdisciplinary projects, in relation to energy policies

Anticipating diversification of energy supply (such as increases in solar and biomass energy) and a more networked environment, integration of city management, energy policy, and environmental policy will undoubtedly become even more of a major social challenge. Tokyo Gas, as an energy supplier, will be heavily involved with local governments, companies, and citizens. As I have experience in projects to cutting across sections of a major company or a local government that suffered from sectionalism, I would like to use this experience and support information exchange and coordination of different departments or with outside organizations.

Diffusion of renewable energy, electric cars, and other products may change the prevailing concept of energy in addition to changing people's lives. Tokyo Gas may evolve from an energy supplier to a total life service provider. Without staying in a framework of Outside Audit & Supervisory Board Member, I intend to endeavor to help Tokyo Gas become an even more valuable company for the society of the next-generation.

# Tokyo Gas Group's Invisible Assets

Enhance "invisible assets" and achieve sustainable growth in our Second Foundation phase



energy solutions that suit customer needs, in order to increase the convenience and

Using its know-how and experience, the Tokyo Gas Group is contributing to other

Japanese companies in Japan and overseas with energy solutions, and to local

pleasantness of business conducted by our customers.

energy infrastructure-building.

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Evolving into a total energy business

3

Accelerating global expansion



### Procurement

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 became the first in Japan to import LNG from Alaska. That was in 1969. Today, by procuring LNG mainly from Southeast Asia and Australia, our low dependence on the Middle East is one of our features. We also participate in the upstream gas field projects, which enable us to procure stable, price-competitive LNG.

Supply

We import LNG by tankers and store it in tanks at the LNG terminals. LNG is then reconverted into gas and adjusted in calorific value to be distributed as city gas to customers through our pipeline network of over 60,000 km. Main facilities such as plants and pipelines have adopted latest knowledge and technologies to withstand even a major earthquake (7.0 on the Japanese scale of an earthquake) as intense as the Great Hanshin-Awaji Earthquake of 1995. Unlike other energy sources, as city gas is made by conversion from LNG to gas at an LNG terminal and is distributed via pipeline, there is no energy conversion loss or transport loss to a point of consumption.

Maintenance knowhow to support stable supply and measures to prevent earthquake disaster In order to deliver natural gas safely and steadily to over 11 million customers 24 hours a day and 365 days a year, we are continually developing human resources involved in safety. To support the stable supply of city gas, 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 at times of emergencies. The trust of customers that has been earned as a result of expertise and efforts related to safety operations that we have accumulated during the group's history of 130 years has also become a strength of the Tokyo Gas Group.



# Relationships of trust with over 11 million customers

Our relationships of trust with over 11 million customers, accumulated over the past 130 years, are our biggest strength. Tokyo Gas Lifeval (over one-third owned by Tokyo Gas), Enesta, and Enefit have 194 outlets and over 10,000 employees, providing services with the background of strong local community relationships and providing one-stop support for the daily life of customers in local communities. Their service menu includes gas tap opening and shutoff; safety inspection of gas taps and gas facilities; sales, installation and repair of gas appliances and other home appliances; renovation mainly of bathrooms and kitchens; and handling inquiries and applications for electricity services. We believe strong relationships of trust with customers, based on these community-based sales organization is a driver behind our becoming the No. 1 new electric power entrant. In operations of the retail gas business, which was fully deregulated this year, we are determined to augment and strengthen our relationships of trust with customers.



etc.





### **Research and Development**

We are developing energy application technology that supports customers in their daily life and business, and technology to support safety and reliability of the city gas infrastructure. Moreover, in order to enhance competitiveness and expand our business domains, we are taking up the challenges of developing new technology in light of changes in the social environment, such as for low-carbon and digitalization.



Technology	Development Themes of Tokyo Gas
Low-carbon society	Development of technology for realizing a low-carbon society. Raising efficiency of gas appliances and systems, such as fuel cells and gas cogeneration system, and use of renewable energy are included.
Hydrogen-oriented society	Development of technology for establishing a supply base of hydrogen, a form of clean energy with high potential, and for advanced use of hydrogen
Smart Society	Development of technology that responds to various needs of customers for energy saving, cost reduction, and reduction in environment burden. Smart energy network and smart meter system of gas are included.
Earthquake disaster prevention and stable supply	R&D for supporting the city gas infrastructure, including LNG terminals and pipelines; development of system to withstand a major earthquake
Comfortable, convenient and	R&D for creating more values for customers. Research on lifestyle and development of services, using IoT, AI,

and other digital technology are included.

### **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-) PT Miura Indonesia

(Signing of a Memorandum of Understanding on Mutual Cooperation in Indonesia) **Petronas LNG Ltd.** (Signing of a Memorandum of Collaboration)

(organing of a memorandum of obliaboration

### Gas resource 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**

secure living

Expand competitive power sources

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

### **Electricity Sales**

Expand sales to high-voltage and extra-high-voltage customers

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

Expand sales to low-voltage customers

Business alliances with 21 companies including gas operators which are our city gas wholesale customers (approx. 620,000 city gas customers)

Business alliances with 27 LP gas sales companies (approx. 310,000 LP gas customers)

Making progress with talks about sales through partnerships with companies in housing, construction, equipment, telecommunication, information service, and other industries.

### 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 flexibly respond to changes in society and business environment. Moreover, we are promoting creation of workplaces, where diverse employees can excel, as well as workstyle innovation.

eorientation of the Tokvo Gas Group type management structure Evolution of the total energy business

Acceleration of global

development

Achieving sustainable growth

Promotion of diversity

Shift into a Yatsugatake Mountains

Work innovation and workstyle innovation by use of ICT

### Promotion of Empowerment for Human Resources

### **1** Promotion of diversity

### **Top Management Commitment**

### The Tokyo Gas Group will promote diversity to ensure sustainable growth and development into the future

With competition between companies in the energy market continuing to intensify, the Tokyo Gas Group aims to maintain its position as the customer's choice and achieve sustainable growth and development in the future by realizing its Challenge 2020 Vision. One important priority for the Group as a whole is the promotion of diversity. For us to continue to meet diversifying

### customer needs, it is vital that every single person employed by the Group should have the chance to excel and make maximum use of his or her knowledge, ability, and experience. We are committed as a corporate group to developing and expanding systems to achieve this goal and foster employee awareness of it while continuing to proactively create an organizational culture in which everyone can excel, regardless of gender, age, disability, nationality, or whether they were hired straight out of university or mid-career.



### **Specific Examples of Promoting Diversity**

#### Promotion and empowerment of women

· Increase in women in management positions (the first female corporate officer was appointed in April 2016)

- Active promotion of initiatives, targeting 10% in the ratio of women in management positions by 2020 · Almost no difference in gender in terms of the
- average years of service

Employment of people with disabilities · Employment rate of 2.19%, exceeding the

mandatory rate (as of June 2017)

 Established a Liaison Committee to Promote Employment of Disabled People. Expand the locations and scope of work opportunities in the company for people with disabilities, and support initiatives by Group companies.

Promote safe and comfortable working environment.

Support careers of employees over 50s and over

·A "Grand Career System" was established in April 2016 to support career development of people in their 50s, through training sessions and interviews with career consultants in the Personnel Department.

## Development and optimal placement

Recognizing that people grow through their work, we are developing capabilities and skills of employees mainly through on-the-job training and by effectively combining it with off-the-job training and learning, self-development, and job transfer and rotations.

With the objective of developing next-generation executives, we Development of conduct a program for those candidates, for them to discuss executives management with executive officers and others of various divisions. Development and assignment of human resources, with We promote growth of the strategically-important electric power and consideration given to the overseas businesses by assigning more employees. In addition, we hire Yatsugatake Mountains type mid-career personnel with relevant experience and expertise. management structure Tokyo Gas Group mindset training sessions are conducted for new employees of the Group to nurture a sense of cohesion and unity. We Management philosophy to be known promote our management philosophy for those employees to achieve by all Group employees our own sustainable growth while contributing to our business and overall social endeavors

### 2 Occupational safety and health

Safety and health, or protection of the life and health of employees, are basic to the very existence of a company. With the aim of helping employees maintain and enhance health, we have a mental health initiative and an initiative to prevent adult lifestyle-related diseases. We also encourage a 100% participation in regular medical examinations to detect disease at an early stage and make effective use of outside medical institutions.

In order to prevent a health problem caused by long working hours, overtime work after 10 pm is banned in principle. By maintaining a sharp distinction between work and off-time, we aim at streamlining performance and raising productivity.

### **External Evaluation**

Selected as a Nadeshiko Brand (being outstanding in terms of encouraging the empowerment of women)



"Work anywhere"

Overcoming restrictions on

where to work

Granted Kurumin certification by the Minister of Health, Labour and Welfare as a company that provides superior childcare support



Selected as a Health & Productivity Stock 2017 by the Ministry of Economy, Trade and Industry and the Tokyo Stock Exchange



### Work Innovation Project "Work with Enthusiasm"

Aiming at taking up challenges to changes in the external environment, deregulations, we have promoted a work innovation project Work with Enthusiasm, using ICT. Employees working with enthusiasm are expected to result in the creation of value and the improvement in productivity.

### Workstyle Innovation

"Work in a free-form animated manner"

Enhancing knowledge sharing and communication

Ex. Work at home, reforms of offices, etc.

### Work Process Innovation

### "Work to be entrusted"

Automation, use of machines, advancement of work

Ex. Study use of AI technology in work, etc.

We will continue to verify the effects, use the PDCA cycle, and implement and settle tools and rules for promoting changes in mindsets.



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

### 11-Year Consolidated Financial Highlights As of March 31, 2017

	2007.3	2008.3	2009.3	2010.3	
Net Sales (¥ million)	1,376,958	1,487,496	1,660,162	1,415,718	
Operating Profit (¥ million)	162,315	70,048	65,204	85,229	
Operating Profit Margin (%)	11.79	4.71	3.93	6.02	
Ordinary Profit (¥ million)	156,039	66,832	58,337	83,519	
Profit attributable to owners of parent	t (¥ million) 100,699	42,487	41,708	53,781	
Equity (¥ million)	795,101	769,072	772,365	813,886	
Total Assets (¥ million)	1,692,635	1,703,651	1,764,185	1,840,972	
Interest-bearing Debt (¥ million)	525,467	558,716	593,230	555,919	
Operating Cash Flow (¥ million)	233,841	184,908	182,791	199,898	
Free Cash Flow (¥ million)	109,285	46,902	36,862	51,712	
EBITDA (¥ million)	295,457	212,469	206,287	231,346	
Capital Expenditure (¥ million)	124,556	138,006	145,929	148,186	
Depreciation (¥ million)	133,142	142,421	141,083	146,117	
EPS (Earnings per Share, fully diluted EPS) (	∉) 35.69	15.50	15.37	19.86	
BPS (Book Value per Share) (¥)	293.11	289.49	284.72	301.58	
Issued Number of Shares (Common Stock) (th	nousands of shares) 2,810,171	2,741,571	2,717,571	2,703,761	
Dividend per Share (¥)	8	8	8	9	
DOE (Dividends on Equity) (%)	2.83	2.72	2.78	3.07	
Payout Ratio (%)	21.33	50.19	51.18	45.32	
Total Payout Ratio (%)	60.14	73.56	63.35	60.11	
Current Ratio (%)	112.60	106.76	118.99	120.93	
D/E (Debt-Equity) Ratio (times)	0.66	0.73	0.77	0.68	
Equity Ratio (%)	46.97	45.14	43.78	44.21	
ROE (Return on Equity) (%)	13.22	5.43	5.41	6.78	
ROA (Return on Assets) (%)	5.95	2.50	2.41	2.98	
Total Asset Turnover (times)	0.81	0.88	0.96	0.79	
TEP (¥100 million)	538	17	-48	186	
WACC (%)	3.8	3.6	3.4	3.2	
Number of Customers (thousands)	10,207	10,380	10,513	10,637	
Gas Sales Volume (million m <sup>3</sup> )	13,315	14,215	13,942	13,666	
2020 \	vision basis* —	_	_	_	

\* 2020vision basis...These numbers are the numerical results calculated by the same method when we planned our vision. Namely, it is the amount that added self-consuming volume and LNG sales volume (excluded volume for Nijio) to a Consolidated gas sales volume.
 \* Depreciation includes amortization of long-term prepaid expenses.
 \* Although unaudited, financial information in this annual report is based on certified financial statements.

2017.3	2016.3	2015.3	2014.3	2013.3	2012.3	2011.3
1,587,085	1,884,656	2,292,548	2,112,117	1,915,639	1,754,257	1,535,242
58,365	192,008	171,753	166,044	145,633	77,075	122,451
3.7	10.19	7.49	7.86	7.60	4.39	7.98
55,688	188,809	168,169	159,613	147,453	75,620	121,548
53,134	111,936	95,828	108,451	101,678	46,060	95,467
1,101,498	1,100,271	1,069,515	1,011,787	927,634	839,166	858,920
2,230,269	2,251,518	2,257,662	2,176,816	1,992,403	1,863,885	1,829,661
713,596	715,769	730,739	713,823	642,550	625,830	584,169
217,439	257,122	237,680	248,831	240,448	194,565	244,803
14,081	25,089	13,084	827	56,651	48,152	94,600
222,670	337,194	313,605	306,424	284,403	225,580	271,788
203,358	232,033	224,596	248,004	183,797	146,413	150,202
164,305	145,187	141,852	140,380	138,770	148,505	149,336
23.02	46.68	39.15	43.10	39.52	17.70	35.63
479.74	460.35	438.28	402.91	360.70	324.67	320.70
2,302,856	2,396,778	2,446,778	2,517,551	2,577,919	2,590,715	2,684,193
11	11	10	10	10	9	9
2.29	2.58	2.34	2.59	2.91	2.74	2.88
47.79	23.57	25.55	23.20	25.30	50.85	25.26
60.71	60.10	60.80	60.00	60.70	61.36	60.87
142.69	155.48	150.63	156.67	162.16	156.89	142.26
0.65	0.65	0.68	0.71	0.69	0.75	0.68
49.39	48.87	47.37	46.48	46.56	45.02	46.94
4.83	10.32	9.21	11.18	11.51	5.42	11.41
2.37	4.96	4.32	5.20	5.27	2.49	5.20
0.71	0.84	1.03	1.01	0.99	0.95	0.84
-62	676	434	507	598	91	640
3.0	3.4	3.6	3.2	3.2	3.1	3.3
11,536	11,398	11,263	11,111	10,978	10,855	10,739
15,720	15,436	15,541	14,735	15,390	15,190	14,745
19,053	18,587	18,360	17,225	16,741	15,833	

#### Computations

Operating Cash Flow = Profit attributable to owners of parent + Amortization of Long-term Prepaid Expenses + Depreciation Free Cash Flow = Profit attributable to owners of parent + Amortization of Long-term Prepaid Expenses + Depreciation – Capital Expenditure Current Ratio = Current Assets (year-end) / Current Liabilities (year-end) x 100 Debt-Equity Ratio = Interest-bearing Debt (year-end) / Equity (year-end) Equity Ratio = Equity (year-end) / Total Assets (year-end) x 100 Total Asset Turnover = Net Sales / Total Assets (year-end) x 100 TeP (Tokyo Gas Economic Profit) = Profit after taxes and before interest payments – Cost of capital (invested capital x WACC)

WACC calculation data (fiscal 2016 actual) • Interest-bearing debt cost: Real interest rate of 1.11% (after tax) • Cost of shareholders' equity • Risk-free rate: 10-year JGB yield of 0.11% • Risk premium: 5.5%, Beta coefficient of 0.75

TOKYO GAS ANNUAL REPORT 2017

### **Consolidated Balance Sheet**

			(Millions of ye
		2016.3.31	2017.3.31
Assets	Non-current assets		
	Property, plant and equipment		
	Production facilities	241,842	235,152
	Distribution facilities	550,713	539,840
	Service and maintenance facilities	59,560	53,623
	Other facilities	351,950	416,142
	Inactive facilities	316	316
	Construction in progress	107,685	147,074
	Total property, plant and equipment	1,312,068	1,392,149
	Intangible assets		
	Goodwill	841	1,600
	Other intangible assets	136,348	77,615
	Total intangible assets	137,189	79,215
	Investments and other assets		
	Investment securities	179,410	182,443
	Long-term loans receivable	24,013	28,128
	Net defined benefit asset	229	24
	Deferred tax assets	40,447	40,127
	Other investments and other assets		39,100
		34,741	
	Allowance for doubtful accounts	(394)	(367)
	Total investments and other assets	278,447	289,456
	Total non-current assets	1,727,705	1,760,821
	Current assets		
	Cash and deposits	170,262	132,626
	Notes and accounts receivable - trade	201,344	194,240
	Lease receivables and investment assets	24,054	24,097
	Merchandise and finished goods	3,501	2,317
	-		
	Work in process	10,784	12,466
	Raw materials and supplies	46,525	40,763
	Deferred tax assets	8,004	9,050
	Other current assets	59,808	54,259
	Allowance for doubtful accounts	(472)	(374)
	Total current assets	523,812	469,447
	Total assets	2,251,518	2,230,269
Liabilities	Non-current liabilities		
	Bonds payable	284,997	314,997
	Long-term loans payable	363,393	326,752
	Deferred tax liabilities	11,321	
			11,299
	Net defined benefit liability	89,405	73,524
	Provision for gas holder repairs	3,455	3,262
	Provision for safety measures	466	4,711
	Provision for appliance warranties	9,538	10,298
	Provision for loss on guarantees	1,678	-
	Asset retirement obligations	10,695	11,975
	Other non current liabilities	24,490	31,650
	Total non-current liabilities	799,443	788,474
	Current liabilities		
		47.044	56,395
	Current portion of non-current liabilities	47,044	
	Notes and accounts payable - trade	82,352	96,413
	Short-term loans payable	16,512	10,333
	Income taxes payable	28,914	20,000
	Deferred tax liabilities	1	-
	Asset retirement obligations	53	-
	Other current liabilities	162,023	145,843
	Total current liabilities	336,903	328,987
	Total liabilities	1,136,346	1,117,461
Vet assets	Shareholders' equity	.,100,0-т0	1,111,401
101 400010		111 011	141 044
	Capital stock	141,844	141,844
	Capital surplus	1,878	1,883
	Retained earnings	910,353	893,436
	Treasury shares	(4,441)	(3,087)
	Total shareholders' equity	1,049,634	1,034,076
	Accumulated other comprehensive income		
	Valuation difference on available-for-sale securities	26,298	27,166
	Deferred gains or losses on hedges	(2,573)	(990)
	Foreign currency translation adjustment	44,945	36,399
	Remeasurements of defined benefit plans	(18,033)	4,845
	Total accumulated other comprehensive income	50,636	67,422
	Non-controlling interests	14,900	11,309
	Total net assets	1,115,172	1,112,807
		1,110,172	1,112,001

### **Consolidated Statement of Income**

		(Millions of yer
	2015.4.1 - 2016.3.31	2016.4.1 - 2017.3.31
Net sales	1,884,656	1,587,085
Cost of sales	1,239,020	1,051,885
Gross profit	645,636	535,200
Selling, general and administrative expenses		
Supply and sales expenses	385,572	410,125
General and administrative expenses	68,054	66,708
Total selling, general and administrative expenses	453,627	476,834
Operating profit	192,008	58,365
Non-operating income		
Interest income	615	901
Dividend income	1,878	2,178
Rent income	2,177	1,740
Share of profit of entities accounted for using equity method	2,122	3,583
Miscellaneous income	8,776	5,889
Total non-operating income	15,570	14,293
Non-operating expenses		
Interest expenses	12,158	11,514
Balance on commissioned construction	2,189	2,564
Miscellaneous expenses	4,421	2,893
Total non-operating expenses	18,769	16,971
Ordinary profit	188,809	55,688
Extraordinary income		
Gain on sales of non-current assets	-	6,610
Gain on sales of investment securities	-	9,120
Total extraordinary income	-	15,730
Extraordinary losses		
Impairment loss	28,293	2,408
Loss on valuation of investment securities	4,747	-
Total extraordinary losses	33,040	2,408
Profit before income taxes	155,768	69,010
Income taxes - current	43,782	25,271
Income taxes - deferred	(991)	(10,305)
Total income taxes	42,791	14,966
Profit	112,977	54,044
Profit attributable to non-controlling interests	1,040	910
Profit attributable to owners of parent	111,936	53,134

### **Consolidated Statements of Comprehensive Income**

		(Millions of yen)
	2015.4.1 - 2016.3.31	2016.4.1 - 2017.3.31
Profit	112,977	54,044
Other comprehensive income		
Valuation difference on available-for-sale securities	(8,363)	870
Deferred gains or losses on hedges	(1,062)	1,360
Foreign currency translation adjustment	3,614	(6,470)
Remeasurements of defined benefit plans, net of tax	(15,904)	22,875
Share of other comprehensive income of entities accounted for using equity	(1.007)	(1.0.4.4)
method	(1,387)	(1,844)
Total other comprehensive income	(23,102)	16,791
Comprehensive income	89,874	70,835
Comprehensive income attributable to		
Comprehensive income attributable to owners of parent	89,029	69,919
Comprehensive income attributable to non-controlling interests	844	915

### **Consolidated Statements of Cash Flows**

		(1.1)
	2015 4 1 2016 2 21	(Millions of yen) 2016.4.1 - 2017.3.31
Cash flows from operating activities	2015.4.1 - 2016.3.31	2010.4.1 - 2017.3.31
Profit before income taxes	155,768	69,010
Depreciation	141,930	160,871
Impairment loss	28,293	2,408
Amortization of goodwill	344	1,059
Amortization of long-term prepaid expenses	3,256	3,433
Loss on retirement of property, plant and	3.050	2,047
equipment	.,	
Loss (gain) on sale of non-current assets	(268)	(6,555)
Loss (gain) on sales of investment securities	(1,156)	(9,120)
Increase (decrease) in net defined benefit liability	(1,110)	(3,374)
Decrease (increase) in net defined benefit asset	(1,384)	22,058
Increase (decrease) in provision for loss on		
guarantees	115	(1,678)
Increase (decrease) in provision for safety measures	(4,242)	4,245
Interest and dividend income	(2,494)	(3,080)
Interest expenses	12,158	11,514
Share of (profit) loss of entities accounted for using equity method	(2,122)	(3,583)
Decrease (increase) in notes and accounts receivable - trade	47,350	4,286
Decrease (increase) in inventories	28,117	3,700
Increase (decrease) in notes and accounts payable - trade	(22,993)	17,567
Increase (decrease) in accrued consumption taxes	(2,436)	(4,326)
Decrease (increase) in prepaid expenses	(31)	(1,411)
Decrease (increase) in accounts receivable -	12,864	1,997
other	,	
Other, net	14,410	(1,809)
Subtotal	409,422	269,261
Interest and dividend income received	11,954	14,593
Interest expenses paid Income taxes paid	(12,547) (54,170)	(11,509)
Net cash provided by (used in) operating		(33,610)
activities	354,658	238,734
Cash flows from investing activities		
Purchase of investment securities	(1,850)	(9,922)
Proceeds from sales and redemption of investment securities	3,616	9,489
Purchase of property, plant and equipment	(195,060)	(165,918)
Purchase of intangible assets	(26,131)	(29,542)
Purchase of long-term prepaid expenses	(10,683)	(8,322)
Proceeds from sale of non-current assets	858	7,124
Payments of long-term loans receivable	(9,776)	(6,073)
Collection of long-term loans receivable	1,726	1,675
Other, net	894	(3,383)
Net cash provided by (used in) investing activities	(236,406)	(204,873)
Cash flows from financing activities		
Net increase (decrease) in short-term loans payable	(2,011)	(6,260)
Repayments of lease obligations	(1,243)	(1,399)
Proceeds from long-term loans payable	51,701	22,670
Repayments of long-term loans payable	(18,012)	(19,982)
Proceeds from bonds	-	30,000
Redemption of bonds	(43,800)	(27,700)
Purchase of treasury shares	(33,939)	(41,065)
Cash dividends paid	(24,173)	(26,969)
Other, net Net cash provided by (used in) financing	(3,938)	(192)
activities Effect of exchange rate change on cash and cash	(1,065)	(498)
equivalents Net increase (decrease) in cash and cash	41,769	(37,536)
equivalents		
Cash and cash equivalents at beginning of period	128,333	170,102
Cash and cash equivalents at end of period	170,102	132,566

### Factors Affecting Revenues and Expenses

### Gas Rate Adjustment System's Medium- to Long-Term Neutralizing Effect on Crude Oil Price and Exchange Rate Fluctuations

Gas prices are determined using the gas rate adjustment system. Through this system, average raw material prices over a three-month period according to trade statistics are compared with the raw material cost that is used as the standard (standard average raw material cost), and the gas rates are adjusted using a defined calculation method based on the differences. A time lag of four months on average (called a sliding time lag) exists between the payment of raw material costs and the reflection of such changes in gas rates. Consequently, fluctuations in crude oil prices and exchange rates may result in the under-recovery or over-recovery of raw material costs if this lag cuts across a fiscal year, thereby affecting income. Looking at the medium- to long-term, however, the gas rate adjustment system has a neutralizing effect on the income impacts of fluctuations in raw material costs.

### Timing of the Standard Average Raw Material Cost Calculation and Reflection in Gas Rates

Timing of standard average raw material cost calculation



The average raw material price over the past three months is calculated every month and then reflected in the gas rate three months later.

### How the Sliding Time Lag in Rates Works

···· All Japan LNG price

- Average raw material price reflected in gas rate







Supporting you Always and bettering every day.



Financial and Industry Data (EXCEL Spreadsheet Data Available) Investors' Guide http://www.tokyo-gas.co.jp/IR/english/library/invguid\_e.html

Quarterly Financial Results Earnings Announcements http://www.tokyo-gas.co.jp/IR/english/event/earn\_e.html

### **Consolidated Financial Results Bulletin**

http://www.tokyo-gas.co.jp/IR/english/library/earn\_e.html

Details of Challenge 2020 Vision The Tokyo Gas Group's Vision for Energy and the Future ~Challenge 2020 Vision~ (Released in November 2011) http://www.tokyo-gas.co.jp/IR/english/manage/vision\_e.html

Details of Corporate Governance Corporate Governance Report http://www.tokyo-gas.co.jp/IR/english/gvnnc/index\_e.html

### CSR Activities Tokyo Gas Group CSR Report

http://www.tokyo-gas.co.jp/csr/index\_e.html

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Stock Code 9531 IR Contact E-mail:tgir@tokyo-gas.co.jp

### 1-5-20 Kaigan, Minato-ku, Tokyo 105-8527, Japan http://www.tokyo-gas.co.jp/index\_e.html

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