

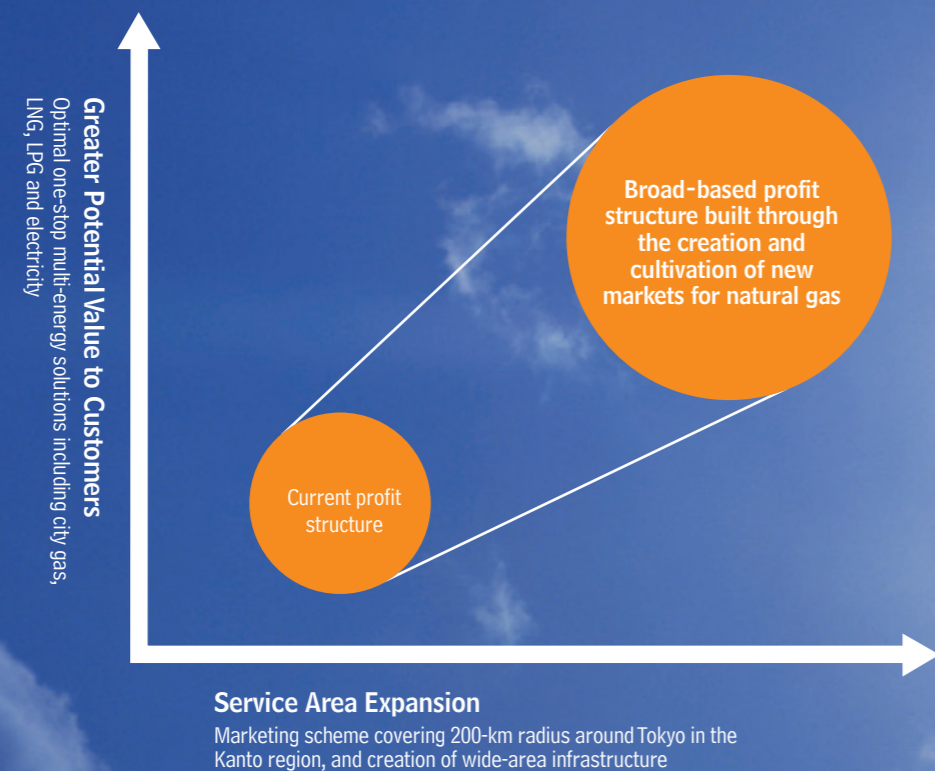
## New Market Development

Our operating conditions have changed significantly with ongoing deregulation of gas and electric power, shifting demand and growing public concern about social and environmental issues. At the same time, customer needs have diversified. To adapt to this environment, in April 2006 the Tokyo Gas group announced a medium-term management plan covering the period to fiscal 2010 and reflecting our vision for the decade beyond. The focus is on being an integrated energy business that optimally supplies utility services including city gas, electric power, LNG and LPG. We will create and develop new markets for natural gas and establish a business structure with a broad profit base in the energy sector. Furthermore, strategically centered on the still-growing Kanto region, we will develop the enormous potential demand for natural gas, and expand our service area substantially.

## Creating New Value at Every Step

Tokyo Gas Group possesses a value chain in the gas business, in other words, we have a value-creating management foundation for the development of a competitive integrated energy business from upstream to downstream (from natural gas field development, transportation, LNG terminals to power plants, pipeline network, marketing and customer sales). By integrating and optimizing these elements, we will utilize the strengths of our value chain to develop multi-energy supply with the provision of one-stop energy solutions such as gas and electric power, and energy services on one hand, and solutions based on our technical and marketing capabilities, on the other, and expand our area of business. In future, we will strive to achieve sustained growth through competitive resource procurement and an expanded profit structure.

### Business Strategy



### Value Chain



Maintenance and improvement of core technologies, development of challenging new technologies and the utilization of information technology form the backbone of today's gas business. We will use these technologies to increase value to our customers by enhancing and expanding our value chain. This includes enhancing our resource procurement, LNG terminal and pipeline networks and our energy marketing.



## Resource Procurement

### Locking In Long-term Stability and Security

Liquefied natural gas (LNG) is produced by transforming natural gas from its natural gaseous state into a liquid by lowering its temperature to around minus 160°C. This precious natural resource is brought to Japan across thousands of kilometers of ocean with specially designed carriers. LNG is environmentally superior to other fossil fuels and enjoys a good reputation among our many customers. Tokyo Gas first imported LNG from Alaska in 1969. In the four decades since then, we have switched our city gas resources to LNG.

*Energy Navigator* started operation in June 2008



#### Reliable, Competitive Access to Resources

Tokyo Gas is continually working to maintain reliable and competitive access to LNG sources by expanding its LNG value chain through the organic linkage of domestic and international business activities. Specifically, we are involved with development, production and liquefaction in gas fields, transport with LNG tankers, regasification at terminals, and supply to customers. We are also implementing diversification of resource procurement destinations.

#### Reliable Procurement

In order to deal with steadily increasing gas demand, Tokyo Gas has smoothly expanded its LNG imports over the past four decades, mainly focusing on politically stable source countries located relatively near Japan. Tokyo Gas is currently procuring more than ten million tons of LNG per annum, mainly from ten projects in six countries in the Asia-Pacific region, including Malaysia, Australia, Brunei and Indonesia, under long-term contracts. In fiscal 2008, supply is scheduled to commence from Sakhalin II in Russia, which will become our seventh source country. We are also planning long-term procurement of 1.75 million tons annually from the Pluto project in Australia from 2010 onwards. We promote diversi-

fication of LNG sources in order to undertake reliable resource procurement. In addition, wherever possible, we are switching our contract format to FOB, which enables us to reduce transportation costs using our LNG tankers and allows us freedom to change destination points or to conclude flexible contracts based on contract volume. We believe these efforts will help ensure adaptable and competitive gas resource procurement in line with customer demand.

#### Participation in Upstream Business

Tokyo Gas is increasing its participation in upstream business by building its own LNG value chain that extends from upstream business through to downstream business. In this way, we can achieve long-term, reliable and competitive gas resource procurement and expand the possibilities of our LNG business. Tokyo Gas holds an upstream interest of 3% in the Darwin project in Australia. In addition, we have obtained an interest of 5% in the Pluto project, which will commence production in 2010. In future, we are considering investment in other new projects in Australia, including Gorgon. Participation in upstream business allows natural hedging of price fluctuation risks; therefore, this approach is also useful for stabilizing profits.

#### Fleet Expansion

We currently operate a fleet of six vessels, including *Energy Navigator*, which went into service in June 2008. We plan to add one new vessel in 2009 and another in 2011, at which time we will be carrying approximately 50% of our total LNG cargos in our own vessels. By increasing the volumes carried, we aim to achieve further reductions in our transportation costs. The use of our fleet for short-term and spot procurement as well as procurement under long-term contracts will provide increased mobility. We also intend to expand the scope of our transportation business by carrying LNG for third parties and chartering out our vessels.

#### Tokyo Gas LNG-term Imports



### Pluto Gas Field Agreements

Tokyo Gas reached a final agreement with Woodside Energy Limited for a five percent interest participation in and purchase of LNG from the Pluto LNG project in Australia. The Pluto project acquired environmental approval from the Australian government in October 2007, and in November 2007, this agreement officially came into effect, marked the start of construction.

Also in October 2007, Tokyo Gas acquired a five percent interest in the Cazadores blocks, adjacent to the Pluto project. The blocks are likely to be tied into Pluto as development continues, assuring additional gas resources. These agreements hold the promise of an expanding profit foundation.



Participating at the signing ceremony: Mr. Mitsunori Torihara, President of Tokyo Gas (far left), former Australian Prime Minister Mr. John Howard (center left), Mr. Shosuke Mori, President of Kansai Electric Power (center right) and Mr. Don Voelte, CEO and Managing Director of Woodside Energy (far right).



## City Gas Production and Supply

### Reaching More Customers for Increasingly Lower Cost

Delivering clean and safe city gas to more than 10 million customers in a stable manner is one of the most important missions for Tokyo Gas. We strive for efficient and safe management, taking advantage of know-how acquired as Japan's biggest gas company.



Negishi LNG terminal, which has operated since 1969.

#### Aiming for Efficient and Safe Operation of LNG Terminals

Tokyo Gas imports liquefied natural gas (LNG) from various parts of the world at its Negishi, Sodegaura and Ohgishima LNG Terminals in the Tokyo Bay area. The LNG is transported to the three terminals by LNG vessels, from which it is transferred to storage tanks, taking approximately half a day. To maximize shipping efficiency, the gas is cryogenically liquefied at the point of production to reduce its volume about 600 times. In the LNG receiving facilities, the LNG is regasified using vaporizers, and then LPG is added to adjust the caloric value. Finally, the so-called city gas mixture is odorized, so that customers will be aware of the presence of gas. It is then sent out through pipelines.

Two of our three LNG terminals, Negishi and Sodegaura, are jointly operated with Tokyo Electric Power Company. The benefits of this arrangement include lower capital investment and operating costs as well as higher operating rates, and load leveling based on the differences between peak demand patterns for electric power and gas. Because of these factors, both companies can efficiently conduct terminal management.

The LNG terminals of Tokyo Gas are among the largest in the world. Despite the scale, all processes—from the unloading of LNG to the delivery of the city gas through pipelines—are automatically controlled by computers. As a result,

our day-to-day operations require only 5–10 workers. Safety is of paramount importance. Our world's-largest underground tank can store enough LNG to meet the needs of around 280,000 households for one year. Tokyo Gas adopted buried underground LNG tanks to minimize the risk of above-ground LNG leaks—even in the event of tank damage. Through these efforts, we have realized both the maintenance of advanced safety levels and low running costs.

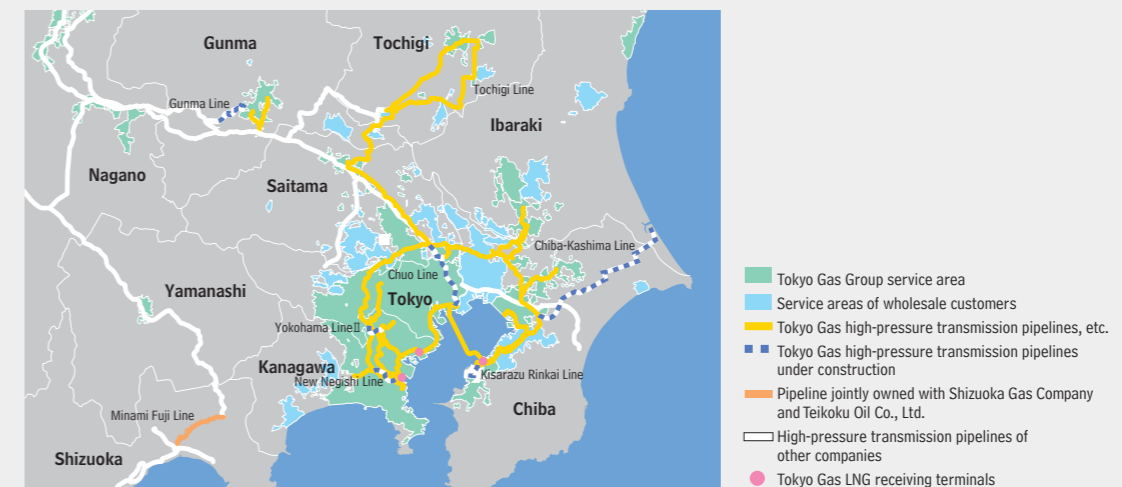
#### A Strong Pipeline Network

Tokyo Gas has constructed the largest city gas supply network in Japan. It is supported by reliable safety systems and based on the engineering and maintenance technologies we have accumulated over many years. The high-pressure trunk pipelines circling the Tokyo metropolitan area and the three LNG terminals complement each other to realize a more reliable supply system.

We have also constructed pipelines that not only enhance supply reliability, but also meet the enormous potential demand that exists in the Kanto region. We completed the Tochigi Line in 2005 to develop natural gas demand across the northern part of the Kanto region, specifically Tochigi Prefecture, and further improve supply reliability. Continuing, we plan to complete the Gunma Line, designed to meet the strong demand in the Gunma area, in March 2010, and to invest approximately ¥26.0 billion to complete the 73-km Chiba-Kashima Line designed to develop the latent industrial demand in the Kashima industrial area in Ibaraki Prefecture, by December of the same year.

Furthermore, in order to meet the long-term increase in demand for natural gas, we plan to complete the Chuo Trunk Line I in 2009 to further enhance the supply capacity and reliability of the high-pressure trunk lines circling Tokyo. (The Chuo Trunk Line II will commence operation in 2010.)

#### Service Area Facility Map



#### Shield Tunnel Technology

Shield tunneling involves rotating the drill at the tip of a tunnel-boring machine, known as a shield machine, to excavate the tunnel. It can produce longer tunnels at greater speed, and much of the process is now automated. Tokyo Gas has employed this technology in the construction of high-pressure pipelines traveling under urban areas, in particular, in the first phase of construction of the Chuo Trunk Line I, scheduled for completion in 2009. It will connect the densely populated area that lies between Edogawa Ward in Tokyo and Soka City in Saitama Prefecture via a 23.1-km shield tunnel. This approach improves the speed and reliability of the overall project because the shield machine will excavate a tunnel 40 to 50 meters below the surface, where the ground is geologically stable, and we will need to access the tunnel underground at only two points. The Japan Society of Civil Engineers gave Tokyo Gas a technical award in May 2008, commending the Company's construction project management for being well adapted to an era in which speed is required.



Shield Machine



# Staying at the Forefront with Advanced Energy Solutions

The outlook for Japan's economy is increasingly uncertain due to the instability of stock and foreign exchange markets originating in the so-called sub-prime loan problem, and the rise in international crude oil prices, among other factors. However, there has also been an accelerating switch to the use of natural gas as a fuel in the industrial sector due to its price advantage relative to increasingly expensive crude oil and also because of its being environmentally friendly. In the commercial sector, which is seeing escalating competition in the energy market, Tokyo Gas is building its competitiveness by offering outstanding solutions that meet the needs of a wide range of customers. We will continue to create new value along with our customers as a business partner that is trusted regarding all aspects of energy.

Kawasaki Natural Gas-fired Power Plant commenced first unit operation in April 2008 (first and second unit total: 847.4 MW)



### Aiming for Establishment of an Integrated Energy Business

There is escalating competition among different types of energy and among suppliers of the same type of energy. Tokyo Gas is responding to the changing and increasingly sophisticated energy needs of industrial and commercial customers by aiming to establish itself as an integrated energy business. This offers diverse solutions and value to customers. The concept includes being a multi-energy supplier that provides one-stop access to gas, heat and electric power, and offering energy services that make optimal use of the strengths of each energy system. Furthermore, companies are establishing an increasing number of factories and large-scale commercial facilities on the outskirts of the Tokyo metropolitan area, which enables us to develop as an integrated energy business over a wider area. Our strategies for the development of potential demand in the Kanto region surrounding Tokyo include the building of wide-area pipeline networks and construction of LNG satellite terminals in areas where gas pipelines have not been installed. We believe that we can achieve further demand growth within a 200-km radius surrounding Tokyo by strengthening our alliances with local energy suppliers to supply multiple forms of energy, including gas, LNG, heat and electric power, and by offering one-stop energy services.

### Working to Provide Sophisticated Energy Solutions

In order to be a multi-energy supplier that provides one-stop solutions to all of the energy needs of our customers, Tokyo Gas is developing its power generation business while seeking to maximize synergies with its gas business. We supply electric power competitively by combining a range of strategies, including the construction of power plants close to demand areas, the use of existing infrastructure already available at our LNG terminals and other facilities, as well as the introduction of the latest Gas Combined Cycle technology, which is highly efficient and promotes energy conservation. Tokyo Gas Bay Power and Tokyo Gas Yokosuka Power are already fully operational. In April 2008, Kawasaki Natural Gas Power Generation Co., Ltd. (Tokyo Gas: 49%, Nippon Oil Corporation: 51%) commenced operations, and construction of Ohgishima Power Station (Tokyo Gas: 75%, Showa Shell Sekiyu: 25%) is proceeding smoothly.

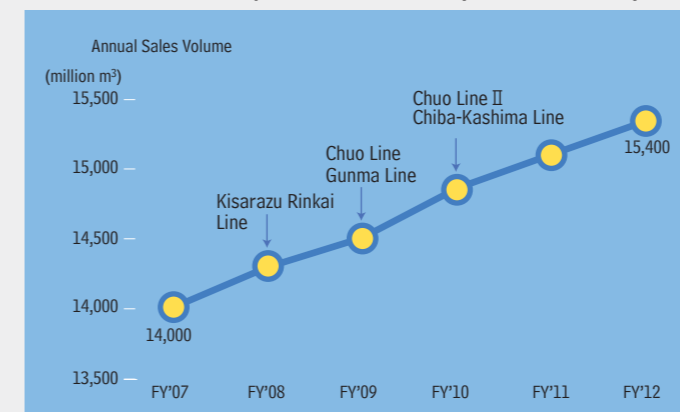
### Integrated Utility Services for Diversified Needs

We are expanding our collaboration with ENERGY ADVANCE Co., Ltd. (ENAC), which separated from Tokyo Gas as an independent company in 2002. This relationship is crucial to the full-scale development of an energy services business which provides the optimal mix of energy systems.

The knowledge and technical expertise accumulated through construction and operation of these facilities are the foundation for a wide range of energy services. ENAC's professional engineers select, design and install systems that precisely match customer needs, providing benefits that include energy conservation and reduced CO<sub>2</sub> emissions and costs. ENAC is the industry leader and is currently providing these services to 208 customers (as of the end of March 2008).

The services provided by ENAC are not limited to energy. The company has been able to evolve into an integrated utility service company offering one-stop solutions for a wide range of customer needs by expanding its business to include utility services, such as the supply of pure water and compressed air, and contracting services in areas such as biomass utilization and facility operation and management.

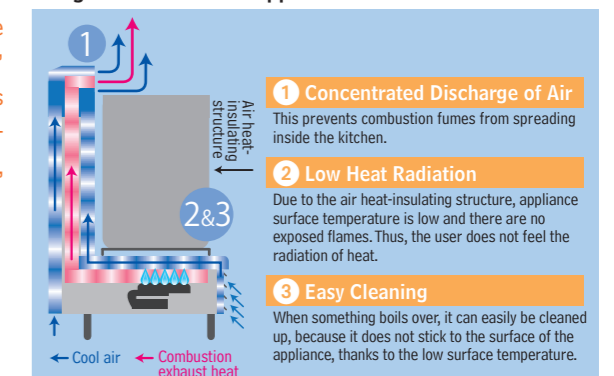
### Demand Outlook and Capital Investment Plan (non-consolidated)



### Initiatives on the Front Line of Sales: Commercial Kitchens

Gas is ideal for cooking delicious food. In terms of economics too, gas kitchen appliances have a huge advantage over electric units. In recent years, however, the competitive environment on the sales front has been severe due to consumers' perception that kitchens become too hot when gas is used. Now Tokyo Gas offers our customers an optimized "cool kitchen." By providing the four elements necessary for a kitchen plan "economy," "ecology," "deliciousness" and "cleanliness", this kitchen achieves an ideal mix of energy to meet each customer's needs.

#### Design of Cool Kitchen Appliances





## Residential Customers

### LIFEVAL Realizes More Pleasant and Satisfying Lifestyles for Customers

The mission of Tokyo Gas is to help residential customers experience the lifestyle enhancements made possible by city gas, including the enjoyment of delicious food cooked over a real flame and the convenience of being able to produce just the required amount of hot water whenever it is needed. We actively propose new value for living by developing products and services that reflect customer needs, including environmental and health needs. We are also determined to enhance our ability to communicate with each customer by developing a marketing structure based on even stronger links with regional communities.



#### Maximizing the Value of Customer Contacts

In recent years, it has become increasingly difficult to prevent declines in gas sales per residential customer because of Japan's falling birthrate and an increase in the number of houses with effective draft-proofing and thermal insulation. There is also escalating competition from all-electric houses, a concept that is being promoted primarily by electric power companies.

Our market strategy in the residential sector is to maintain and expand gas sales volumes per customer through in-depth marketing. All Tokyo Gas companies have numerous opportunities for customer contacts, and we are determined to maximize these opportunities. We also work to expand our gas sales volumes through dynamic marketing activities targeted toward expansion of our customer base.

To address customer needs and services, we have created regionally focused marketing approaches coordinated by branch offices and are working to expand gas sales volume. With a view to further strengthening our marketing organization, we are moving ahead with the establishment of Tokyo Gas LIFEVAL, a new regional energy company that restructures and integrates sales and service functions, including appliance sales, repair services and safety inspections. This

new company is aiming to increase our contacts with customers and create a structure to provide one-stop access to products and services with the potential to add value to customer lifestyles. In April 2008, the new company commenced operations in 12 districts (service blocks), with approximately 60 districts (blocks) to be added by the end of fiscal 2009.

To market our products to sub-users, we have created a marketing structure that allows gas development in different markets for developers, house manufacturers, contractors/design offices, electronics retail stores and others.

We are encouraging households to use gas in a wide variety of ways by strategically introducing attractive gas appliances, such as floor-heating systems and mist saunas, which anticipate changing lifestyles. Through these efforts, we are offering enhanced lifestyle features and comfort to as many customers as possible. We are promoting these strategic appliances aggressively to communicate to our customers the attractiveness of gas. In addition to mass-media advertising, such as via television, newspapers, magazines and the Internet, we are increasing the number of opportunities for consumers to experience gas appliances at our showrooms, through third-party events and in condominium and housing displays. We are also encouraging customers to use these gas appliances by developing and promoting an attractive range of gas charging options.

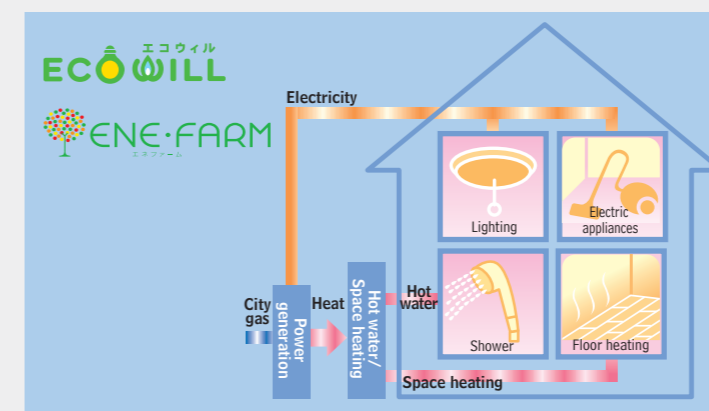
By promoting these various initiatives, Tokyo Gas intends to achieve sustainable growth in the residential sector.

#### Capturing Residential Electric Power Demand—Home Power Generation

Tokyo Gas promotes home power generation systems as a way of expanding residential gas demand and countering competition from all-electric systems. Our flagship products in this area, the ECOWILL gas engine cogeneration system and the ENE-FARM fuel cell cogeneration system, are being marketed primarily to customers living in detached houses.

We are using home power generation to develop a new residential electric power market. These strategic products have the potential to drive future growth in gas sales. By fiscal 2010, we aim to sell a cumulative total of approximately 43,000 units as a foundation for large-scale adoption of this technology.

##### Home Power Generation System



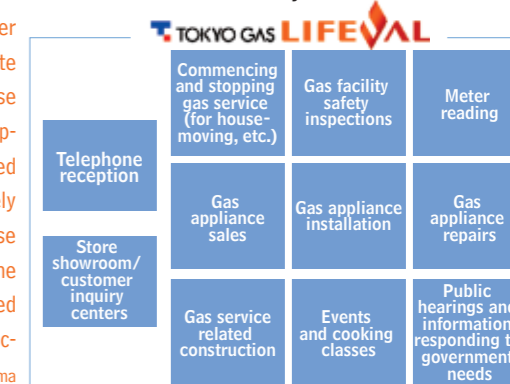
Tokyo Gas is studying strategies for entry into the market for energy systems for condominium housing. In this area, we will provide one-stop solutions, including the installation, ownership and maintenance of cogeneration systems designed to meet the energy needs of condominium residents.

\*The name of our residential fuel cell changed from "LIFUEL" to "ENE-FARM" in June 2008.

## Tokyo Gas LIFEVAL

Enesta, Tokyo Gas Customer Service and Tokyo Gas were previously responsible for different aspects of customer services, such as sales and repairs of gas appliances, meter reading and safety inspections of gas facilities. We have combined these entities to create the new Tokyo Gas LIFEVAL company, which provides one-stop services to meet the diverse needs of regional customers. It plays a central role in our regionally focused marketing approach, contributing to the realization of comfortable lifestyles using gas. We have divided our supply area\* in Tokyo, Kanagawa, Chiba and Saitama prefectures into approximately 60 districts (service blocks). We have integrated all gas-related services in each of these districts under the new company, which is carrying out sales and offering services as the new customer interface for Tokyo Gas in each of these regions. Tokyo Gas has invested more than one-third of the equity in Tokyo Gas LIFEVAL, and it is aiming to create a structure that will result in closer relationships with its customers. \*excluding some parts of Saitama

#### Business Outline of Tokyo Gas LIFEVAL





## Technology Research Development

### Giving Ourselves the Tools We Need to Thrive

Tokyo Gas places a high value on technology and accepts the challenge of creating new technology as the driving force for business development and growth. Particularly important are technologies relating to the gas business, such as combustion technology and pipeline technology. As a leading company in the Japanese energy sector, we aim to achieve sustainable growth in partnership with society by actively contributing to the development of new technologies for the energy society of the future.



Pilot sewage biomass power generation system

#### Developing both “strategic” and “platform” technologies

Our research and development activities are broadly divided into two areas. Strategic technology development contributes to the sustainable growth of our integrated energy business, with an emphasis on natural gas. Platform technology development helps to enhance our competitiveness while also fulfilling society’s needs in terms of reliability, safety and environmental considerations. By developing both forms of technology, we achieve reliable and efficient use of natural gas in each phase of the value chain—production, supply and sales. We seek to create new gas demand while contributing to sustainable growth and supporting a platform for an environmentally friendly and competitive energy supply business.

Our strategic technology development includes development of appliances through insightful exploration of the needs of customers. We work to create concepts that resonate with our customers and to provide energy conservation and comfort features. As for residential use products, we promote the advanced “Pipitto Konro + do” cooktop, which features the strengths of gas. In addition, we continuously enhance hot water heater systems such as floor-heating systems and mist saunas, with an emphasis on our highly efficient “Eco-JOES” water heaters. As for com-

mercial equipment, we have created “cool kitchens” equipped with gas kitchen appliances featuring low radiation heat. In addition, as support for in-house power generation businesses such as ECOWILL and ENE-FARM, and as proactive initiatives to achieve a low-carbon society, we have been working on the development of holonic energy systems. Technologies utilizing renewable energy sources such as biomass, solar heat and sunlight are being developed as well, along with hydrogen and CO<sub>2</sub> management technologies.

Our platform technology development plays a crucial role in promoting not only advancement of technologies for laying and maintaining natural gas infrastructures with a focus on pipeline networks but also development for cost reduction. These technologies help us deliver natural gas safely to our customers and thus give them security. Furthermore, we are aiming to improve, pass on and utilize platform technologies that will support the business platform of Tokyo Gas in the long term. These include technologies related to infrastructure-related technology, combustion engineering technology and gas quality management technology.

#### Technology Development Strategies

##### Platform Technology

###### Business infrastructure

- [Production]**
  - Long-term facility maintenance
  - Qualitative improvement of terminal operations and others



###### [Pipelines]

- Maintenance of security level and optimization of security investment



###### [Gas Meter]

- Development of services based on new technologies, such as ultrasound gas flow meters



#### Strategic Technology

- [Commercial equipment, industrial equipment, new services]**
  - Development of kitchen and water heating equipment
  - Development of new energy service content, etc.

- [Home appliance and new services]**
  - Development of enhancements, expansion of line-up
  - New product planning and development, etc.

- [PEFC (Polymer Electrolyte Fuel Cell)]**
  - Development of ENE-FARM enhancements (improvements in functions and efficiency, etc.)

- [Cogeneration systems/air conditioners]**
  - Development of high-efficiency gas engines
  - Development of technologies that utilize exhaust heat

- [Natural gas vehicles]**
  - Further development/enhancing existing lineups

##### Holonic Energy System

- Expansion of microgrid
- Realization of Holonic Energy Society

- [SOFC (Solid Oxide Fuel Cell)]**
  - Development of high-efficiency fuel cell systems and improvement of durability

- [Hydrogen]**
  - Development of high-efficiency hydrogen production system

- [Green energy]**
  - Development of efficient biomass utilization technologies

- [New usage]**
  - Development of diagnostic medicines that use stable isotopes

**Understanding customers, disseminating lifestyle culture**  
Gathering accurate data about changing consumer needs, generating new needs next line through the dissemination of cultural ideas

Helping to create future visions through the exploration of new technologies

##### Technology

###### [Platform technology]

- Maintaining and enhancing the Tokyo Gas brand through the use of platform technology, including infrastructure-related technology, combustion engineering technology and gas quality management technology.

###### [Actuarial assumption and energy information]

- Marketing and management support through data analysis, system analysis and modeling methods

### Holonic Energy Systems

Holonic energy systems involve networks over wide area, such as between buildings or between regions, and allow the flexible exchange and joint use of energy within such networks. This enables energy conservation and CO<sub>2</sub> reductions for the overall zone that cannot be achieved for individual buildings. We are working to maximize energy conservation and CO<sub>2</sub> reduction through effective use of the heat expelled from natural gas cogeneration systems, efficient operation during times of day when energy demand is low, priority use of renewable energy and other means. We can also build energy supply systems that remain strong in times of disaster because they employ dispersed power systems. Tokyo Gas has established a sponsored course at the University of Tokyo on “holonic energy systems” aimed at the realization of this kind of wide-area, networked energy use, and is collaborating with the university on research and development.



# Environmental Technology Development and Activities

## Giving Ourselves the Tools We Need to Thrive

As we work toward the realization of a low-carbon society, use of natural gas is destined to grow due to its outstanding environmental properties, and city gas will become the core of a comfortable and environmentally friendly lifestyle. We will propose highly efficient equipment suited to use in homes, buildings and service areas. Seeking further energy conservation and reduction of CO<sub>2</sub> emissions, we will take initiatives for the more effective use of energy, including the creation of energy networks and dispersed energy systems based on natural gas systems that give priority to the use of renewable energy.



Hydrogen filling station



High-efficiency burner for industrial furnaces



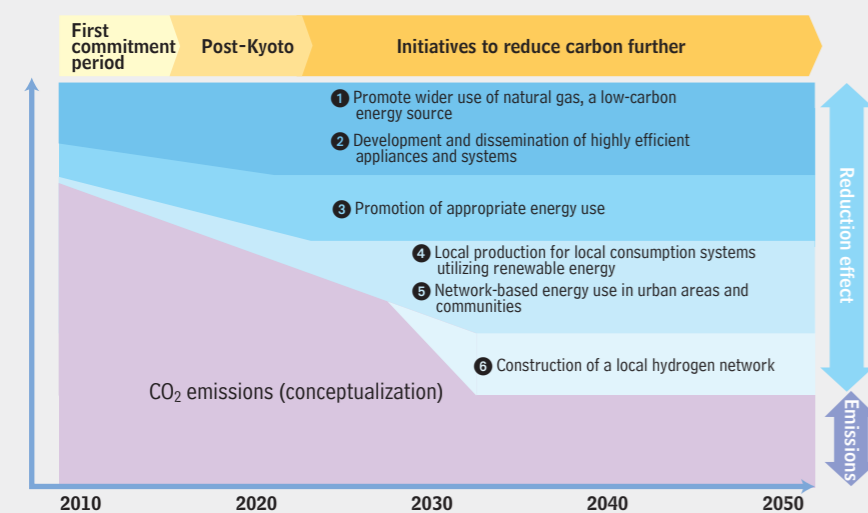
### Environmental Technology Development in the Energy Sectors

Now more than ever, it is necessary to take care of limited natural resources and the environment, create added value through technology and contribute to the sustainable development of society.

Tokyo Gas so far has been promoting a switch to clean natural gas fuel through the introduction of LNG. In addition, we have been working on improving the efficiency of energy use and wider use of highly efficient appliances and systems. For example, we have increased the use of gas air conditioning and cogeneration systems that utilize natural gas.

In the future, Tokyo Gas will continue to promote expanded use of environmentally friendly natural gas. It will also work toward the realization of a low-carbon society that utilizes hydrogen and dispersed energy systems that prioritize the use of renewable energy, based on advanced energy use technology and energy conservation technology.

City gas energy contributes to a wide range of energy conservation and CO<sub>2</sub> emission reduction measures



### Expansion of Sophisticated Uses for Natural Gas

Tokyo Gas has developed technologies to realize higher consumer acceptance of and a lower environmental burden for gas appliances by improving their safety, making them more efficient and more compact and reducing their nitrogen oxide (NO<sub>x</sub>) emissions.

In the residential sector, we will further advance these technologies to provide for a lifestyle that enables users to enjoy both energy conservation and comfort features. In the commercial and industrial sectors, we will increase the demand for city gas, which will contribute to improving the global environment through the use of optimal energy solutions.

### Residential-use Fuel Cell ENE•FARM

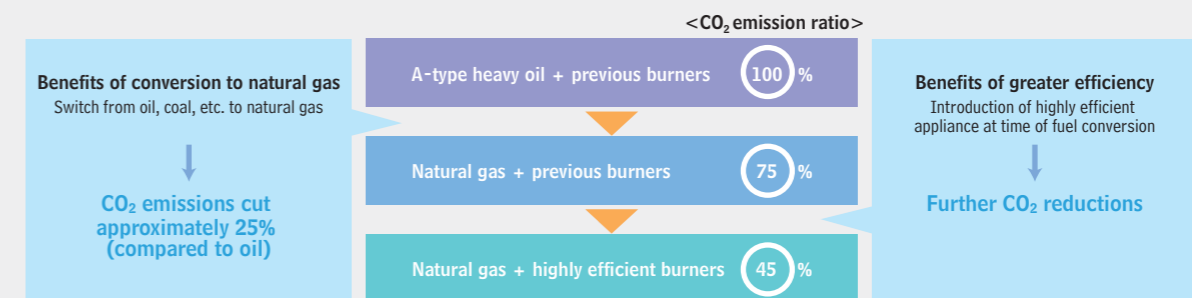
ENE-FARM fuel cells are economical and ecological since they generate electricity to be used on the spot and their exhaust heat can be used for hot water. Therefore, they make it possible for people to conserve energy while enjoying comfortable lives with floor-heating systems, mist saunas and the like. Current Polymer Electrolyte Fuel Cell (PEFC) appliances realize an electricity generation efficiency of 37% (LHV standard), an energy conservation rate of 31%, and a CO<sub>2</sub> reduction rate of 45%. Since their introduction to the market in 2005, a total of over 500 units have gone into operation.

We are aiming to make their use much more widespread through further development efforts that will make them even more compact and affordable. We are also focusing our efforts on development of the Solid Oxide Fuel Cell (SOFC), which offers greatly improved electricity generation efficiency. The SOFC is expected to become the next-generation fuel cell.

### Commercial and Industrial Sectors

To achieve significant CO<sub>2</sub> reductions, we are promoting the use of natural gas, which emits less CO<sub>2</sub> than any other fossil fuel, as a fuel. We are also introducing highly efficient appliances. Insert a pattern diagram of gasification of natural gas in an industrial furnace.

Reduce CO<sub>2</sub> emissions by converting energy sources of industrial furnaces to natural gas



In order to realize energy conservation and CO<sub>2</sub> reductions, it is important not only to introduce highly efficient appliances but also to select appropriate appliances in accordance with the energy use pattern of the consumer. In the residential sector, Tokyo Gas offers highly efficient appliances tailored to family structures and lifestyles; in the commercial and industrial sectors, we promote the most appropriate high-efficiency facilities and cogeneration plants for different heat and electricity ratios of different applications and industry types.

### Moving Closer to the Low-carbon Society of the Future

In order to move toward the realization of a low-carbon society, Tokyo Gas is promoting the utilization of renewable energy that has a strong CO<sub>2</sub> reduction effect.

We have positioned the use of biomass as one item on the menu of our one-stop energy services. Our aim is to expand its use among industrial customers such as breweries and among public-sector customers, including sewage treatment and waste processing plants. The output and caloric value of biomass-derived gas (biogas) varies depending on the season and time; therefore, we mix and combust it with caloric-stable city gas so that cogeneration facilities can be operated continuously. This leads to the use of more efficient, high value-added renewable energy.

We are also working on increasing the use of hydrogen, a future energy source that has the potential to reduce CO<sub>2</sub> emissions even further. We are aiming to develop a compact hydrogen-separating reformer, which produces high-purity hydrogen from natural gas at an efficiency of over 80%, for deployment in hydrogen filling stations.

Tokyo Gas is realizing suitable uses of energy for a low-carbon society by managing energy use from a variety of angles. Such perspectives include “concentration and diffusion,” “large scale and small scale,” “energy conversion and use” and “utilization of renewable energy and unused energy.”

## Safety Initiatives

### Taking All Steps to Assure Trust and Safety

The supply of energy is vital to the continuation of economic activity and modern life. Throughout its history, Tokyo Gas has remained keenly aware of its responsibilities as a supplier of energy, including the responsibility to ensure safety. We continue to fulfill these responsibilities through a wide range of measures.



Biotope on the roof of the Energy & Earth Exploratorium

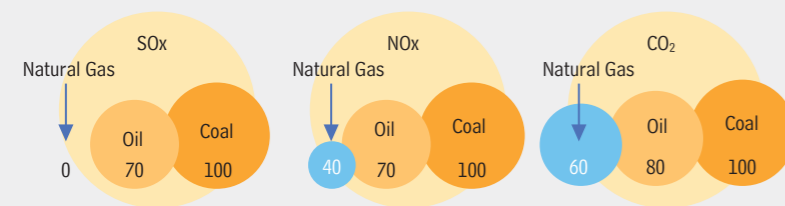
#### Environmental Activities of Tokyo Gas Group

“Tokyo Gas group recognizes the vital importance of the natural environment and is determined to make a positive contribution to global environmental conservation and sustainable social development by promoting the use of environmentally sound resources and energy technologies.” This philosophy is reflected in four policies that are making Tokyo Gas group a leader in environmental management and an active participant in efforts to solve global environmental problems.

1. Reducing the environmental load resulting from the use of energy by our customers.
2. Reducing the total environmental load resulting from our own business activities.
3. Strengthening our environmental partnerships with local and international communities.
4. Promoting research and development relating to environmental technologies.

Our core business activity is to supply city gas, and the main resource for city gas is natural gas, which has the smallest environmental footprint of any general-purpose fossil fuel. It emits almost no sulfur oxide (SOx) during combustion, while nitrogen oxide (NOx) and CO<sub>2</sub> emissions are lower than those of oil or coal.

#### Comparison of Emission Lives (Coal=100)



We aim to fully exploit the advantages of natural gas in our business activities by developing highly efficient equipment and systems, such as cogeneration systems, that minimize the environmental load. We see this as an excellent strategy for reducing global warming and atmospheric pollution. Another priority is making natural gas available to as many customers as possible.

Tokyo Gas has developed its own environmental protection guidelines to ensure that the environmental advantages of its city gas business are fully exploited. These guidelines call for the reduction of CO<sub>2</sub> emissions resulting from gas use by Tokyo Gas customers by 8 million tons-CO<sub>2</sub> by fiscal 2010.

#### Results for Fiscal 2007 and Targets for Fiscal 2010

	Target for FY2007	Result for FY2007	Target for FY2010
Global Warming	Reduction of CO <sub>2</sub> emissions from customers facilities	7.00 million tons	<b>7.24 million tons</b>
	Unit energy use in gas production facilities (Per unit of gas production)	1% or more reduction	<b>2.5% reduction*</b>
	Unit energy use in district cooling/heating systems (Per heat sales volume unit)	1% or more reduction	<b>0.8% reduction*</b>
	Unit energy use at power plants (Per power transmitted)	1% or more reduction	<b>1.3% reduction*</b>
	Unit energy use in Tokyo Gas business offices (Per city gas sales volume unit)	1% or more reduction	<b>4.1% reduction*</b>
Global Warming	Production waste	4 sites/10 sites	<b>6 sites/10 sites</b>
	Other waste (Construction waste, etc.)	More than 91%	<b>91%</b>
	Reduction ratio of waste paper	4% reduction	<b>10% reduction</b>
	Recycling of waste paper	More than 85%	<b>90%</b>
Green Purchasing	Sheets of copy paper used per person per year	6,800	<b>7,244</b>
	Excavation spoil ratio	19%	<b>18%</b>
	Green procurement ratio	More than 62%	<b>61%</b>
	Number of affiliated companies that have already introduced an electronic catalog purchasing system	40 companies	<b>41 companies</b>

\* Annual average reduction ratio

#### Advanced Disaster Prevention Measures

Tokyo Gas is working on three levels of safety and disaster prevention, namely, Prevention Countermeasures, Emergency Response Countermeasures, and Restoration Countermeasures. We have positioned these as the key measures for maintaining a reliable gas supply.

First, it is essential for Prevention Countermeasures to include preparations for the possibility of a major earthquake, as Japan is an earthquake-prone country. Tokyo Gas maintains a high standard of safety by adopting measures to ensure that key gas production and supply facilities are sufficiently able to withstand major earthquakes on the similar scale of the disaster that struck the Hanshin-Awaji area in 1995 (seismic motion with an intensity of seven on the Japanese scale). We are promoting the adoption of polyethylene gas pipes (which account for 90% of our pipelines) when laying new low-pressure pipelines, because they absorb the impact of ground movements and minimize the damage from earthquakes.

Looking at Emergency Response Countermeasures, when an earthquake with an intensity of five or higher on the Japanese scale occurs, the computerized meters in each household detect the seismic motion and shut off the supply of gas automatically. Moreover, in order to prevent secondary disasters such as fire and explosions, our Super-dense Real-time Monitoring of Earthquakes (SUPREME) system instantly monitors information from earthquake sensors deployed at the high concentration of one every square kilometer. This makes it possible to divide a disaster-stricken region into blocks and shut off the gas automatically. These technologies have reduced the estimated time required to stop the gas supply from 40 hours to just 15 minutes. In addition, our emergency mobilization team Gaslight 24, staffed with specialist personnel around the clock, is able to handle emergency situations such as gas leaks and is ready to respond immediately on a 24/7 basis.

Looking at our Restoration Countermeasures, in order to restore the supply of gas as rapidly as possible, we utilize our Restoration Support System to carry out the required work quickly.

In addition, we have adopted safety measures across a wide range of applications. For example, we promote the development of gas cooktops with high-level safety functions for residential use as well as for underground shopping areas and skyscrapers containing numerous gas kitchens.

#### Elimination of Carbon Monoxide Poisoning

Tokyo Gas, which always prioritizes customer safety and security as its first concern, has been encouraging customers in the Tokyo Gas service area to replace kitchen and bathroom water heaters that are not equipped with imperfect-oxygen-depletion safety shutoff devices with new units that incorporate this important safety feature. The new units prevent accidents in which incomplete combustion leads to carbon monoxide poisoning. In particular, in fiscal 2006, Tokyo Gas announced enhanced safety measures to prevent carbon monoxide poisoning accidents, which have been occurring frequently.

Since January 2007, the “switchover promotion campaign” has been implemented as well. There are around 11,450,000 kitchen and bathroom water heaters in operation in the Tokyo Gas service area, and 298,000 of these are not equipped with imperfect-oxygen-depletion safety shutoff devices. Through the campaign, we encourage the owners of these devices to switch to safe units that are equipped with imperfect-oxygen-depletion safety shutoff devices as soon as possible. The campaign has made a steady contribution to improving safety, with the number of units not equipped with this safety device declining from 298,000 before the campaign began to 217,000 by the end of March 2008.



Control room



Gaslight 24