

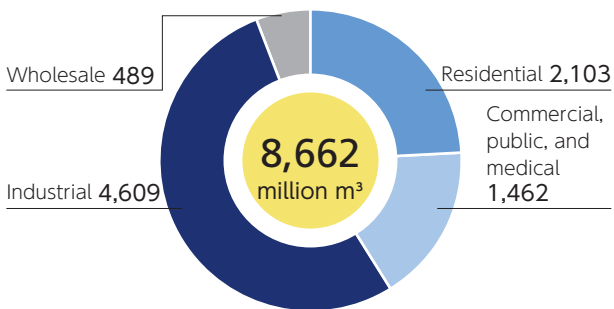
# Domestic Energy Business

## Gas

### 【 Overview of the fiscal year ended March 2017 】

The non-consolidated gas sales volume reported by Osaka Gas for the fiscal year ended March 31, 2017 rose 8.0% from the previous year to 8,662 million m<sup>3</sup>. A breakdown by use shows that residential use was up 0.9% to 2,103 million m<sup>3</sup>, mainly due to a cold winter and subsequent increase in hot water supply and heating demand. In commercial, public, and medical use, summer temperatures remained high, and mainly due to the resulting increase in demand for cooling and the development of new demand centered around air conditioning, sales volume increased 3.7% to 1,462 million m<sup>3</sup>. Industrial use was up 13.5% to 4,609 million m<sup>3</sup>, mainly due to increased demand for power generation and an increase in the operation of customer facilities. Sales to other gas providers increased 4.3% to 489 million m<sup>3</sup>.

Gas Sales Volume by Use [Non-Consolidated] (million m<sup>3</sup>) (2017.3)



### Forecast for the year ending March 31, 2018

Net Sales **¥1,019.5 billion**    Segment Income\* **¥29.0 billion**

Note: Starting in the fiscal year ending March 2018, the electric power supply business which had been classified within the "LPG, Electricity, and Other Energy" segment will be made independent and the segment name changed to "Domestic Energy-Electricity" with the LPG sales, LNG sales, and industry gas sales businesses concentrated in the "Gas" segment and the name changed to "Domestic Energy-Gas." The Osaka Gas Finance Co., Ltd. segment will be changed from "Life & Business Solutions" to "Domestic Energy-Gas."

Starting in the fiscal year ended March 2015, Osaka Gas repositioned the renewable energy business to either the "LPG, Electricity, and Other Energy" segment or to the "International Energy" segment according to the details of individual business activities. For this reason, figures from the fiscal year ended March 2015 on include the domestic renewable energy business.

## Electricity

### 【 Overview of the fiscal year ended March 2017 】

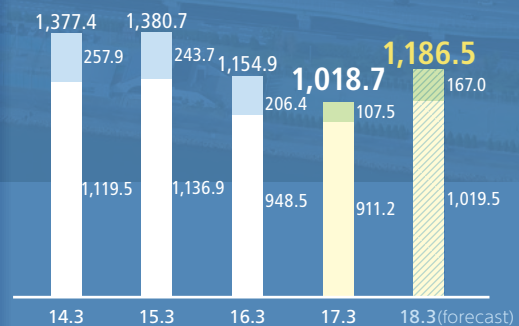
The consolidated electricity sales volume for the fiscal year ended March 2017 increased by 5.2% to 8,948 million kWh.

Since the deregulation of the retail electricity market began in April 2016, the number of Osaka Gas accounts for retail electricity supply has reached 305,000 as of the end of March 2017.

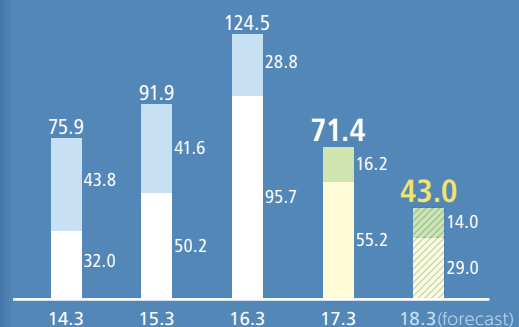
### Forecast for the year ending March 31, 2018

Net Sales **¥167 billion**    Segment Income\* **¥14 billion**

Net Sales (billion yen)



Segment Income\* (billion yen)



■ Gas    ■ LPG, electricity, and other energy  
 ■ Domestic energy-Gas    ■ Domestic energy-Electricity  
 \* The 2017.3 and 2018.3 figures include sales and segment income in the new segments

\* Segment income = Operating income + Equity in earnings of affiliates

【 Efforts to Become What We Aim To Be in FY2030 】

## We aim to maximize customer accounts through the comprehensive supply of energy and services.

Amidst the full deregulation of the electricity and gas retail markets, we will expand our connections with new customers for electricity and LPG while minimizing the outflow of gas customers. In addition to supplying energy, we will strive to strengthen our relationships with customers by offering comprehensive energy and

services, aiming to differentiate ourselves by expanding new services and offering high-quality operations. We will maximize customer accounts in electricity, LPG, Sumikata Services (home services), Utility Agent contracts, and more by utilizing the connections with customers that we have cultivated to date.

### Solutions for Residential Customers

We will further enhance our strengths, offering a range of gas and electricity rates, providing one-stop support for living, high-quality safety and reliability, and energy-saving and environmentally friendly products. We will continue striving to be our customers' preferred choice as a new era energy marketer.

#### Gas and Electricity Rate Options

In April 2017, in addition to standard gas rates, we started offering the "Gas-Toku Plan Motto-Wari" rate aimed mainly at residential customers. The plan offers better rates to more customers regardless of which gas appliances they use.

Customers who contract for both electricity and city gas with Osaka Gas will receive a package discount.

As of June 3, 2017, Osaka Gas is supplying electricity to 350,000 customers. We aim to expand to supply 700,000 customers by 2020 and will continue to expand our pricing plans and services to meet customers' needs.

#### High-Quality Safety and Reliability

We have approximately 200 service chain partners in our service area that work closely with customers in their areas providing Sumikata Services (home services) in addition to contract services for Osaka Gas (such as opening and shutting off gas service and maintenance of gas equipment). They take calls 365 days a year, and have a 24-hour reception system in place particularly for gas appliance repairs. If a call is received by 3:00 p.m., one of 1,300 technicians qualified by Osaka Gas to repair gas appliances will visit the customer on that day. Customers have given a 98% customer satisfaction rating to the speed with which repairs are completed after their call is made.

**Gas Rates**

**GAS得プラン**  
Gas-Toku Plan

- Floor heating
- Home power generation
- ECO-JOZU
- House air conditioning
- Motto-Wari

**Electricity Rates**

**Osaka Gas Four Key Points**

- Point 1**  
Reliable  
Leave it to the energy professionals
- Point 2**  
Economical  
Savings for families that use a lot of power
- Point 3**  
Easy to switch  
No construction needed! Just apply to Osaka Gas!
- Point 4**  
Convenient  
Pay your electricity and gas bills together

**Calls taken 365 days a year**

**Same-day repair system**  
(for calls received by 3:00 p.m.)

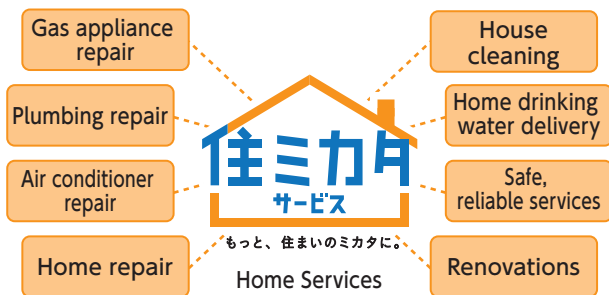
**High customer satisfaction**

## One-Stop Support for Living

In May 2016 we began offering Sumikata Services (home services) which provide plumbing repair, air conditioner repair, housecleaning, and other services as a one-stop service. In about one year since the start of this system, we have received over 15,000 inquiries and the customer satisfaction rating is very high at over 90%.

Additionally, in April 2017 we added the new Sumikata Plus service, which provides emergency home repairs and other living support services for a fixed monthly fee.

In these ways we are answering customers' varied needs and strengthening our relationships with those customers.



## Initiatives Aimed at Promoting Installation of Residential Fuel Cell Cogeneration System "ENE-FARM"

ENE-FARM is a fuel cell cogeneration system for residential use that generates energy by initiating a reaction between hydrogen extracted from city gas and oxygen in the air. In addition to further expanding the use of natural gas, it can help save energy, reduce CO<sub>2</sub> emissions, improve energy security, and cut peak electricity.

In April 2016, we began marketing a new ENE-FARM product that for the first time in Japan allows for surplus electricity generated by customers to be purchased.

In the future, we will strive to see ENE-FARM come into more widespread use and will work to further develop the relevant technologies and reduce costs. We are helping our customers live more comfortable lifestyles, while reducing the burden on the environment, and improving energy security.

\*1 World's highest power generation efficiency using a household fuel cell with a rated power output of 1 kW or less (Source: Osaka Gas, as of February 24, 2016)

\*2 Calculated using the lower heating value; the power generation efficiency for the LP gas model is 51%

\*3 World's smallest solid oxide fuel cell (including waste heat management system) for residential use (Source: Osaka Gas, as of February 24, 2016)

\*4 First in Japan in the business of purchasing electricity generated by residential fuel cells through the electric power system (Source: Osaka Gas, as of February 24, 2016). Applicable targets from whom surplus electricity is purchased are customers who are using the new product (192-AS05 and 192-AS06 models) and have gas usage contracts with Osaka Gas.

### 住ミカタプラス

Sumikata Plus

**Emergency home repair services when you need them most**  
Primary response to emergency calls is free of charge.

<b>Gas appliance repair</b>  Problems with hot water heaters, stoves, or other gas appliances	<b>Plumbing repair</b>  Problems with faucet leaks or other plumbing concerns	<b>Air conditioner repair</b>  Air conditioning fails to cool the room or other problems	<b>Home repair</b>  Problems requiring repairs to floors, walls, or electrical outlets or switches
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**Living support services to help improve the quality of daily life**

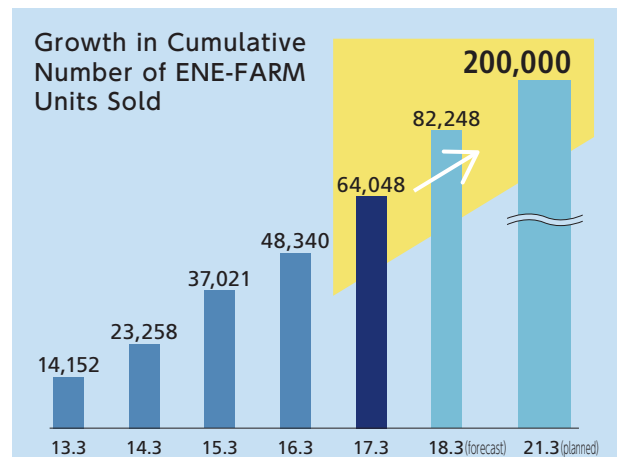
<b>Food</b>  <b>Everyday meal support</b> Recipe website "Bob and Angie" for pay membership services provided for free	<b>Health</b>  <b>Everyday health support</b> Nurses on call 24 hours a day, 365 days a year for health consultation	<b>Energy savings</b>  <b>Helpful energy-saving information</b> Energy consumption data reports are provided that are useful for energy-saving efforts
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\* "My Osaka Gas" membership is required to receive certain services.



### ENE-FARM type S

- Achieves the highest power generation efficiency in the world at 52%<sup>\*1,2</sup>
- World's smallest<sup>\*3</sup> fuel cell for residential use offers setup flexibility  
Can be installed in an apartment building or retrofitted to an existing residence
- Purchases of surplus electricity<sup>\*4</sup>
- Service for remote monitoring of power generation

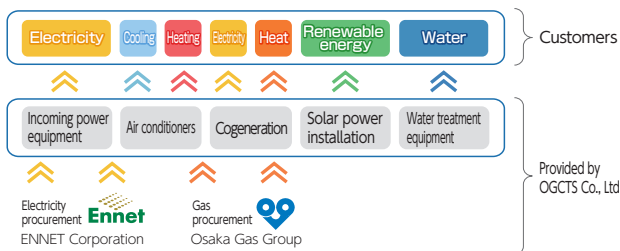
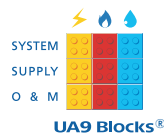


## Solutions for Commercial and Industrial Customers

In addition to supplying gas and electricity, we carry out a series of initiatives to use energy in optimal systems, from energy-saving diagnoses and facility improvement proposals for customers to procurement of required equipment, development of technologies and products, maintenance, and management. We strive to propose optimal solutions to solve customers' energy problems on a one-stop basis, strengthening relationships with and inspiring continuing loyalty from our customers.

### Utility Agent® contract

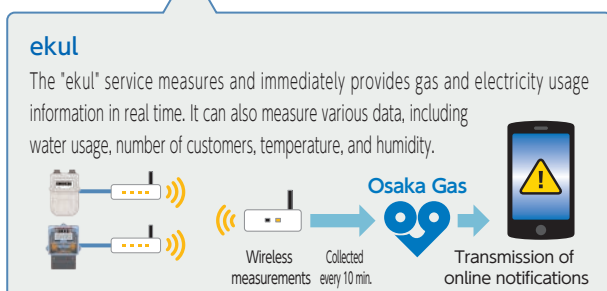
OGCTS Co., Ltd. of the Osaka Gas Group provides utility facilities (gas, electricity, and water supply) to customers for one-stop service from maintenance and management services to energy procurement.



### ICT Services

We operate the HelloOG! members-only website, which provides gas and electricity usage, billing, and other helpful information free of charge. Started in April 2016, in just one year the site received 23,000 customer signups. Each month, when the billing amount is determined, an email is sent to each customer informing them of the monthly bill. We are also developing other new functions and services.

Another service we offer is the "ekul" service, which measures and provides gas and electricity usage information in real time, alerting customers to overuse or wasteful use.



### Delivering Solutions for the Industrial Market

We began developing burners for industrial furnaces in the 1950s and 1960s, and have developed a vast range of burners at our experimental facility. With our unique engineering expertise, we also supply optimal solutions that boost customer satisfaction and help develop further demand.



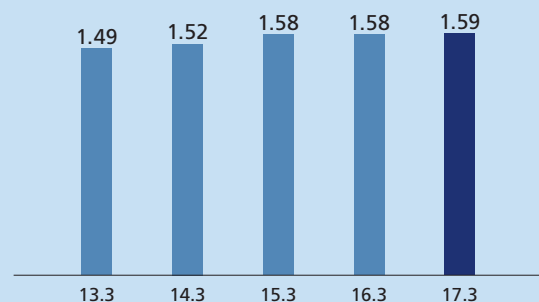
- Technology and Equipment Development Using Unique Engineering Strengths
- Engineering Solutions, Fuel Conversion
- Maintenance
- Energy Diagnoses and Facility Improvement Proposals

Boost Customer Satisfaction  
Develop Demand

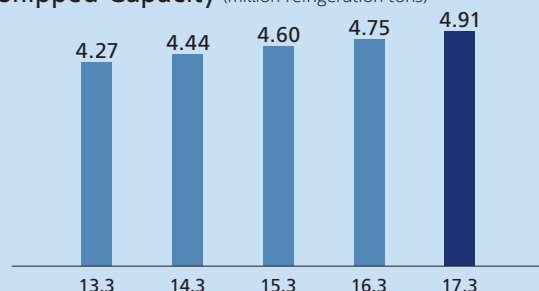
### Expanded Use of Gas Cogeneration Systems and Air Conditioning Systems

We are continuing to propose cogeneration systems and gas air conditioning systems that help reduce peak electricity consumption and promote energy conservation.

Cogeneration Cumulative Capacity (GW)



Gas Air Conditioning System Cumulative Shipped Capacity (million refrigeration tons)



## Electric Power Business

### [ Efforts to Become What We Aim To Be in FY2030 ]

The electric power business of the Osaka Gas Group will expand wholesale supply to ENNET Corporation and retail sales to user households growing to a scale of 9,000 MW in FY2030, including power sources in Japan and overseas. Moreover, we will secure the

required supply capability by utilizing market transactions and procurement from other companies in addition to developing new power sources, and we will build a flexible and optimal power source portfolio as we strive for business management efficiency.

### Efforts to Expand the Electric Power Business

Osaka Gas commenced retail sales of electric power in April 2016 in response to the full deregulation of the electricity retail market, and as of June 3, 2017 has accounts with approximately 350,000 customers, supplying electricity to households, restaurants, dry cleaners, and other low-voltage fields. We will strive to expand retail sales with the aim of supplying power to 700,000 customers by FY2020. In special high-voltage and high-voltage power, as before, we sell power as a sales agent of ENNET Corporation.\*1

The Osaka Gas Group also has alliances with other business operators in retail sales, in addition to selling and procuring power at the Japan Electric Power Exchange.

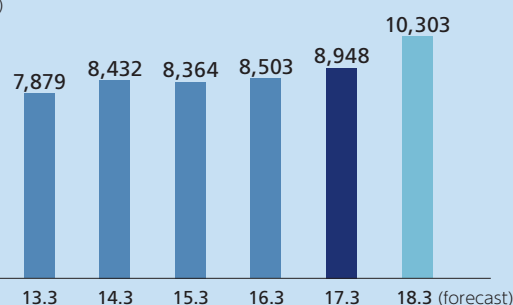
### Power Source Ownership and Development Status

Currently, we own about 1,880 MW of power in Japan—about 3,280 MW when including international power sources.

In the first half of FY2017, the Nagoya II Power Plant (coal/wood biomass, 110 MW) is scheduled to start operations adjacent to the currently operating Nagoya Power Plant.

### Electricity Sales Volume (Consolidated)

(GWh)



\*1 ENNET Corporation is a joint venture established by three companies: NTT Facilities, Tokyo Gas, and Osaka Gas. It entered the retail electricity business in 2000.

### Capacities of Owned Power Sources (as of year ended March 2017)

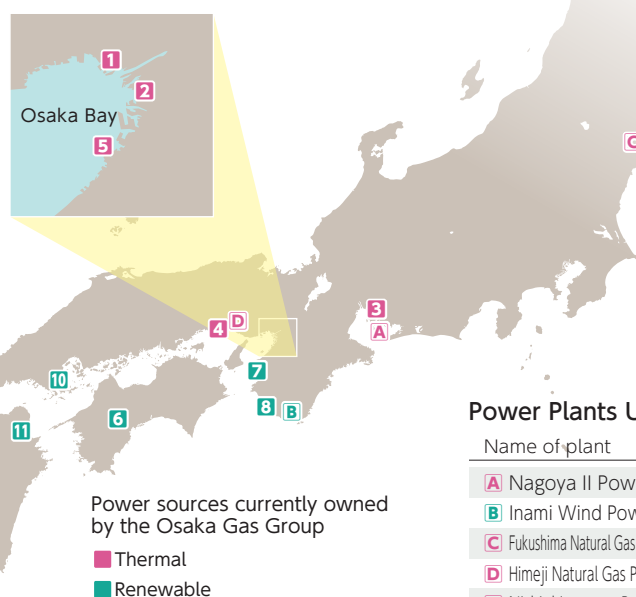
Domestic power plants and their power generation capacity (owned by the Osaka Gas Group)

1	Torishima Energy Center (natural gas), Gas & Power	150 MW
2	Funamachi Power Plant (natural gas), Nakayama Joint Power Generation	149 MW
3	Nagoya Power Plant (coal/wood biomass), Nakayama Nagoya Joint Power Generation	149 MW
4	Himeji Power Plant (natural gas)	58 MW
5	Senboku Natural Gas Power Plant (natural gas), Senboku Natural Gas Power Generation	1,109 MW
6	Hayama Wind Farm Power Plant (wind), Hayama Wind Farm Power Plant	20 MW
7	Hirogawa Myojin-yama Wind Power Plant (wind), Hirogawa Myojin-yama Wind Power Plant	16 MW
8	Yura Wind Power Plant (wind), Yura Wind Power Generation	10 MW
9	Hizen Wind Power Plant, Hizen South Wind Power Plant (wind), Hizen Wind Power Generation	30 MW
10	Hirao Wind Power Plant (wind), Hirao Wind Power Generation	9 MW
11	Nissan Green Energy Farm in Oita (solar), Nikki Mirai Solar Plant	13 MW
	Others	165 MW
	<b>Total</b>	<b>1,878 MW</b>

In addition to the above, the Osaka Gas Group owns stakes totaling 1,400 MW in power sources outside of Japan. Data in parentheses indicate the fuel used for power generation.

### Power Plants Under Construction or Under Consideration

Name of plant	Start of operation	Fuel for power generation	Power generation capacity	Amount owned by Osaka Gas
A Nagoya II Power Plant	First half of FY2017	Coal/wood biomass	110 MW	110 MW
B Inami Wind Power Plant	June 2018	Wind	26 MW	26 MW
C Fukushima Natural Gas Power Plant	Spring of 2020	Natural gas	1,180 MW	236 MW
D Himeji Natural Gas Power Plant	Early 2020s	Natural gas	1,000-1,800 MW	660-1,200 MW
E Nishiokinoyama Power Plant	Early 2020s	Coal	1,200 MW	540 MW



## Initiatives Aimed at Expanding the Use of Renewable Energy

We are promoting both solar power and wind power generation domestically and overseas to expand the use of renewable energy that is friendly to the global environment and to bring about a low carbon society.

The Yura Solar Power Plant started operation in FY2016, and the generation capacity of the solar power plant has reached 58MW. Adding to our existing wind power generation capacity of 85MW, the Inami Wind Power Plant will begin operations in June 2018.

Also, we will try to control CO<sub>2</sub> emissions by co-firing



Torishima Solar Power Plant  
(Osaka Prefecture)



Hirogawa Myojin-yama Wind Power Plant  
(Wakayama Prefecture)

5% wood biomass fuels at Nagoya Power Plant and 30% at Nagoya II Power Plant.

In FY2030, we aim to own a renewable energy power source of about 500 MW.

## Energy Resource Procurement

### 【 Efforts to Become What We Aim To Be in FY2030 】

The city gas supplied by the Osaka Gas Group is mainly manufactured from LNG imported from overseas. It is extremely important to procure LNG stably and inexpensively. We will strive to diversify our suppliers and procure new natural gas

resources such as shale gas, and will also work to reduce raw material procurement costs by diversifying the terms and conditions of agreements such as LNG procurement pricing mechanisms.

## Diversifying Sources of Supply

Currently, the Osaka Gas Group procures supplies of LNG under long-term agreements concluded with producers from the eight countries of Brunei, Indonesia, Malaysia, Australia, Qatar, Oman, Russia, and Papua New Guinea.

In FY2018, we will be pursuing opportunities to source supplies from the USA.

## Use of Osaka Gas Group LNG Carrier Fleet

In order to further stabilize the procurement of energy resources while reducing the costs of transportation, as well as expand trading in LNG, the Osaka Gas Group is building a fleet of LNG carriers.

The seventh and eighth vessels were launched in FY2014 and FY2016, respectively. By using new steam turbine engines in these newly built LNG carriers, we were able to reduce fuel consumption while also benefiting the environment through controls on CO<sub>2</sub> and NO<sub>x</sub> emissions.

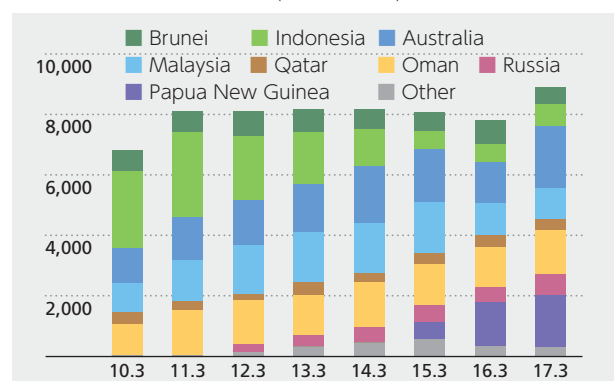
## Diversifying the Terms and Conditions of Agreements

There is an established system in Japan wherein LNG procurement prices are generally linked to the price of crude oil. For this reason, when crude oil prices rise, the price of LNG in Japan also rises, creating a situation which easily leads to a price discrepancy between Japan and the West.



Mars, the 8th Osaka Gas carrier

### LNG Purchase Volume (thousand tons)



The Osaka Gas Group is striving to establish new pricing mechanisms in LNG procurement. As one example, the Group will introduce pricing mechanisms indexed to Henry Hub\* prices instead of crude oil prices for procurement from the USA. By diversifying pricing mechanisms in agreements, we are working to stabilize and reduce the price of LNG.

\* The name given to an index widely used as a reference for natural gas prices in the USA.